

**AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO**

**DRAFT PROPOSED AMENDMENTS TO RULE 69.4.1 – STATIONARY
RECIPROCATING INTERNAL COMBUSTION ENGINES-BEST AVAILABLE
RETROFIT CONTROL TECHNOLOGY, AND THE PROPOSED REPEAL OF
EXISTING RULE 69.4 – STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES-REASONABLY AVAILABLE CONTROL TECHNOLOGY**

WORKSHOP REPORT

The San Diego County Air Pollution Control District (District) held a public workshop on August 16, 2019, to discuss and receive input on the draft proposed amendments to Rule 69.4.1 – Stationary Reciprocating Internal Combustion Engines-Best Available Retrofit Control Technology, and the proposed repeal of existing Rule 69.4 – Stationary Reciprocating Internal Combustion Engines-Reasonable Available Control Technology. A meeting notice was mailed to each permit holder, applicant, registration holder, and chamber of commerce in the region, as well as the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB). Additionally, a meeting notice was posted on the District’s website and distributed to interested parties including through the County of San Diego’s electronic mail service.

The workshop was attended by 23 people. A summary of the comments and District responses are provided below:

1. WORKSHOP COMMENT

Existing Rule 69.4.1, Subsection (b)(2), provides an exemption from certain rule requirements for existing engines that commenced operation on or before November 15, 2000, and operate less than 200 hours per calendar year. Does this exemption still apply under the proposed amended rule?

DISTRICT RESPONSE

Yes, the existing exemption for qualifying engines still applies under the proposed amended rule. Proposed new Subsection (b)(3) has been added to clarify this point.

2. WORKSHOP COMMENT

The definition of “Emergency Situation” in Subsections (c)(15)(i) and (ii), and the record keeping requirements in Subsections (g)(2)(i)(A) and (B), require a demonstration by the owner or operator that the failure or loss of all or part of normal external or internal power service was “beyond the reasonable control” of the owner or operator. However, the term “beyond the reasonable control” is not defined in the rule and is ambiguous. For clarity, Subsections (c)(15)(i)(B) and (ii)(B) should

be revised to the following: “which is demonstrated by the owner or operator *not to have been the intended result of the owner or operator’s actions or omissions.*”

In addition, Subsections (g)(2)(i)(A) and (B) should be revised by deleting the phrase “that was beyond the reasonable control of the owner or operator.”

DISTRICT RESPONSE

The definition of “Emergency Situation” in proposed Subsection (c)(15) is consistent with the definition of “Emergency Use” in the State Air Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines. However, the term “beyond the reasonable control of the owner or operator” is not defined in the State ATCM. To provide clarification, the District issued a July 13, 2018, Compliance Advisory titled “Records to Demonstrate Emergency Use for Diesel Engines” to owners and operators of emergency diesel engines. The advisory provides guidance regarding the required records to demonstrate “emergency use.” Additionally, it defines “beyond the reasonable control of the owner or operator” as meeting all of the following conditions: not the result of neglect or disregard of any air pollution control law or rule or regulation; not intentional or the result of negligence; not the result of improper maintenance; and not a recurrent failure or malfunction of the same equipment. Also, per the advisory, “negligence” means failure to use the care that a prudent person usually exercises; and “improper maintenance” means not performing normal, regular maintenance required by the engine manufacturer or service provider.

3. WORKSHOP COMMENT

Emissions data provided by engine manufacturers can be listed in one of two forms, either as an emissions rate in grams per brake horsepower-hour (g/bhp-hr) or as an emissions concentration in parts per million by volume (ppmv). For clarity, the District should list the emissions limits specified in proposed Subsection (d)(1) in both forms.

DISTRICT RESPONSE

The emission standards for new diesel fueled engines (specified in proposed Subsections (d)(1)(ii)(D) and (E)), including the form of the standards, mirror the standards as listed in the State ATCM for Stationary Compression Ignition Engines and the federal New Source Performance Standards (NSPS) Subpart IIII – Stationary Compression Ignition Internal Combustion Engines. For consistency with these State and federal regulations, the proposed amended Rule 69.4.1 lists the emissions standards for new diesel fueled engines in g/bhp-hr only.

However, the emissions standards in NSPS Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines, are listed in both forms (g/bhp-hr and ppmv). For consistency with this federal regulation, Subsection (d)(1)(ii)(E) of the proposed amended rule has been revised to

include emissions standards in both forms (g/bhp-hr and ppmv) for lean-burn and black-start gaseous fueled emergency standby engines.

4. WORKSHOP COMMENT

Proposed Subsection (f)(2)(i) requires annual oil and filter changes. Is this required regardless of the condition of the oil?

DISTRICT RESPONSE

The proposed requirement for conducting annual maintenance of the engine, including oil and filter changes, is consistent with requirements of the federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines. As an alternative, the NESHAP allows for an oil analysis to be conducted in order to extend the specified oil change frequency. The analysis must include the testing of three parameters of the oil: total base or acid number, viscosity, and percent water content. If any of these three parameters exceed their respective limits, then the oil must be changed. Proposed Subsection (f)(2)(i) has been revised to include this alternative for oil analysis.

5. WORKSHOP COMMENT

The requirement for oil and filter changes annually (specified in proposed Subsection (f)(2)(i)) is more frequent than recommended by the engine manufacturer, will not decrease engine emissions, and will increase waste generation. Subsection (f)(2)(i) should be revised to the following: “Changing the oil and filter *according to the frequency recommended by the manufacturer.*”

DISTRICT RESPONSE

See District Response to Workshop Comment No. 4 above.

6. WORKSHOP COMMENT

Many emergency standby engines are located at unstaffed sites or sites that are not staffed on a frequent basis. Because of this, it is not possible for an engine operator to generate an operating log based on actual readings of engine hour or fuel meter as proposed in Subsection (g)(2)(i). Some logs are generated electronically based on automatic alarms and are remotely monitored. Actual engine hour or fuel meter readings are used to verify the electronically generated logs when the sites are visited. To allow for these situations, Subsection (g)(2)(i) should be revised to the following: “an operating log containing dates and elapsed times of every instance of engine operation *either based on actual readings of engine hour or fuel meter or validated against such actual readings during site visits.*”

DISTRICT RESPONSE

The District agrees. Proposed Subsection (g)(2)(i) has been revised to allow, for unstaffed sites only, validation against actual readings of engine hour or fuel meter during owner or operator site visits.

7. WORKSHOP COMMENT

Proposed Subsection (g)(2)(i)(A) requires the owner or operator to maintain documentation from the serving utility of an external power outage in the area where the engine is located. However, there are instances when such documentation is not available from the serving utility. Electric utilities are required to provide to its customers data related to total outages, but they are not required to provide such data when a partial loss of normal electrical power service has occurred. The rule should be revised to include additional options to document total or partial external power outages. Subsection (g)(2)(i)(A) should be revised to the following: *“for an external power outage, documentation from the serving utility of an outage in the area where the engine is located, data from power sensors, or other reasonable means; and/or.”*

DISTRICT RESPONSE

Proposed Subsection (g)(2)(i)(A) has been revised to clarify that documentation from the serving utility shall be required in the event of a *total* external power outage.

8. WORKSHOP COMMENT

Proposed Subsection (g)(2)(i)(B) requires the owner or operator to maintain receipts and/or work orders for the necessary repairs for an internal power outage. However, not all internal power outages require repairs that would involve receipts or work orders. For example, vandals may gain access to a disconnect switch which may only require the switch to be turned back on, or a lightning strike may trip an overcurrent limiter requiring a simple reset and not a repair. To account for those situations in which a repair is not required, Subsection (g)(2)(i)(B) should be revised to the following: *“for an internal power outage, a description of what caused the failure and receipts and/or work orders for the necessary repairs, as applicable.”*

DISTRICT RESPONSE

The District agrees. Proposed Subsection (g)(2)(i)(B) has been revised as suggested.

9. WORKSHOP COMMENT

According to a Compliance Advisory issued by the District on July 13, 2018, titled “Records to Demonstrate Emergency Use for Diesel Engines,” in the event of a public utility low-voltage incident in which backup power is triggered at a facility, a permittee shall document a description

of the incident and the emergency engine run times. The District should add this requirement to the rule.

DISTRICT RESPONSE

The District agrees. Proposed new Subsection (g)(2)(i)(C) has been added to require that for *partial* external power outages, including low-voltage or electric transient incidents, the owner or operator shall document a description of the event. Proposed Subsection (g)(2)(i) already requires that a log be maintained of elapsed times of every instance of engine operation.

10. CARB COMMENT

CARB has no official comments at this time.

11. EPA COMMENT

Proposed Subsection (a)(3) specifies that engines registered under Rule 12 shall not be subject to Rule 69.4.1. However, Rule 12 is not in the State Implementation Plan (SIP), and therefore cannot serve as the basis for an exclusion from a SIP-approved rule.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (a)(3) has been removed.

12. EPA COMMENT

Proposed Subsection (b)(1)(ii) provides an exemption from the rule for engines that are used exclusively in agricultural operations and that are also exempt from permit requirements pursuant to Rule 11. The District should remove this exemption, which is consistent with EPA's past comments on a previous version of Rule 69.4.1.

DISTRICT RESPONSE

The District disagrees. The existing exemption provided in Subsection (b)(1)(ii) for engines used exclusively in agricultural operations mirrors an existing exemption in District Rule 69.4, which EPA approved into the SIP in 2006. Moreover, the proposed amendment to Rule 69.4.1 further limits the exemption to engines located at non-major agricultural sources that are also exempt from permit requirements pursuant to Rule 11, consistent with California Health and Safety Code section 42301.16 (SB 700, 2003). These are smaller agricultural sources that produce actual emissions less than one-half of any applicable emissions threshold for a major source.

13. EPA COMMENT

The allowable operating hours for testing and maintenance of emergency standby engines are ambiguous as specified in proposed Subsection (b)(3)(i). The District should clarify that any additional exempt operating time is only allowable for testing and maintenance, and not for other operations.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (b)(3)(i) has been revised to clarify that any additional operating hours approved by the Air Pollution Control Officer (APCO) shall be for testing or maintenance purposes only.

14. EPA COMMENT

Proposed Subsection (b)(7) exempts engines certified by CARB or EPA from the source testing requirements of the rule. The District should clarify which certification provisions in California statewide programs are acceptable for the source testing exemption.

DISTRICT RESPONSE

The District agrees. For clarification, proposed language has been added to the definition of “Certified Engine” in Subsection (c)(10), specifying that compression-ignited and spark-ignited engines are certified by CARB as specified in Title 13, Division 3, Chapter 9, Article 4, Section 2423 of the California Code of Regulations (13 CCR, Section 2423), and Article 4.5, Section 2433 (13 CCR, Section 2433), respectively.

15. EPA COMMENT

The definition for “Testing or Maintenance” in proposed Subsection (c)(36) includes provisions for additional hours of operation upon approval by the APCO when there was a breakdown or failure during maintenance operation. There is no limit on the additional hours that could be provided, which is a rule approvability issue.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (c)(36) has been revised to allow, upon written approval by the APCO, not more than 10 additional hours of operation for testing or maintenance purposes provided that the owner or operator has demonstrated to the satisfaction of the APCO that such additional operation is necessary.

16. EPA COMMENT

The monitoring requirements in proposed Subsection (e)(2) appear to include APCO discretion as to which operating parameters should be monitored for various types of engines with add-on emissions control equipment. This is a rule approvability issue, and the District should specify the minimum monitoring requirements by replacing the word “may” with the word “shall”.

DISTRICT RESPONSE

The District agrees and has revised proposed Subsection (e)(2) as suggested.

As a related revision, proposed new Subsection (b)(5) has been added to provide an exemption from the requirement to monitor operating characteristics for any EPA-certified engine with manufacturer-installed add-on emissions control equipment. This proposed exemption is necessary because such engines automatically monitor the operating characteristics specified in Subsection (e)(2) and the resulting data are stored in the engines’ internal memory for use as feedback inputs. These parameter readings may not be readily available to the operator, thus making the corresponding monitoring and record keeping requirements infeasible for such engines.

17. EPA COMMENT

The District should specify the training requirements or qualifications for portable analyzer operators in proposed Subsection (e)(5). The rule should include a requirement for portable analyzer operators to be certified or trained in another air district SIP-approved training program.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (e)(5)(v) has been added to specify that a trained operator of a portable analyzer must have completed an appropriate South Coast Air Quality Management District (SCAQMD) approved training program in the operation of portable analyzers, and received a certification issued by SCAQMD.

18. EPA COMMENT

The District should clarify that an engine found to be exceeding the emission standards pursuant to Subsection (e)(5)(iv) is in violation of the rule if not brought into compliance within 20 calendar days.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (e)(5)(iv) has been revised to clarify that the exceedance shall be considered a rule violation if the engine is not brought into compliance within 20 calendar days.

19. EPA COMMENT

The records retention schedule specified in proposed Subsection (g)(10) should be extended to five years.

DISTRICT RESPONSE

The District disagrees. The proposed requirement to retain records for three years is consistent with all other District prohibitory rules.

20. EPA COMMENT

Proposed Subsection (e)(4) requires that new engines rated at 1,000 bhp or greater, and permitted to operate more than 2,000 hours per year, install a Continuous Emissions Monitoring System (CEMS). However, there are no requirements in Section (i) that a Relative Accuracy Test Audit (RATA) be conducted, which is a general requirement to validate CEMS. Subsection (i)(2) requires that such new 1,000 bhp engines be source tested at least once per year. While this source test requirement is suitable for engines without CEMS installed, a RATA requirement may be more appropriate for CEMS-equipped units.

DISTRICT RESPONSE

The District agrees. Proposed new Subsection (i)(3) has been added to require that a RATA be conducted on CEMS-equipped engines at least once per permit year.

21. EPA COMMENT

Proposed Subsections (i)(1) and (2) specify the required frequency of source testing. However, the language is ambiguous as to whether APCO discretion is limited to requiring more frequent testing than what is already required, or if the frequency of source testing in general is subject to APCO discretion. This language regarding APCO discretion should be clarified or removed.

DISTRICT RESPONSE

The District agrees. Proposed Subsections (i)(1) and (2) have been revised to clarify that source testing be conducted at the specified intervals, unless *more frequent* testing is otherwise specified in writing by the APCO.

RULE 69.4.1. STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES –~~BEST AVAILABLE RETROFIT CONTROL TECHNOLOGY (BARCT)~~ (Adopted & Effective 11/15/00; Rev. Adopted & Effective (date of adoption))

(a) APPLICABILITY

(1) Except as provided in Section (b) - Exemptions, this rule shall apply to stationary internal combustion engines with a brake horsepower (bhp) rating of 50 or greater.

~~(2) An engine subject to this rule and located at a major stationary source of oxides of nitrogen (NO_x) is also subject to the applicable requirements of Rule 69.4.~~

~~(32)~~ An engine subject to this rule or exempt from this rule by Subsection (b)(1) shall not be subject to Rule 68 - Fuel-Burning Equipment – Oxides of Nitrogen.

~~(3) An engine registered under Rule 12 – Registration of Specified Equipment shall not be subject to this rule.~~

(b) EXEMPTIONS

(1) This rule shall not apply to the following:

(i) Engines used exclusively in connection with a structure designed for and used as a dwelling for not more than four families.

(ii) Engines used exclusively in agricultural operations for the growing of crops or the raising of fowl or animals, and the site is exempt pursuant to Rule 11 - Exemptions from Rule 10 Permit Requirements.

(iii) Any engine when operated exclusively within a permitted test cell solely for the research, development, or testing of gas turbine engines or their components.

(iv) Any engine when operated exclusively within a permitted test cell solely for the research, development, or testing of reciprocating internal combustion engines or their components.

(v) Any engine used exclusively in conjunction with military tactical support equipment.

~~(2) The provisions of Subsections (d)(1) through (d)(3), (e)(1), (e)(2), (f)(1), (f)(3), (g)(3), (g)(4), (g)(5) and (i)(1) of this rule shall not apply to the following:~~

(i) ~~Any existing engine which operates less than 200 hours per calendar year, as determined by a non-resettable meter that measures elapsed operating time.~~

(ii) ~~Any existing emergency standby engine provided that operation of the engine for non-emergency purposes does not exceed 52 hours per calendar year. Operation for testing or maintenance purposes may be allowed for not more than 100 hours per year, with written authorization from the Air Pollution Control Officer, provided that an owner or operator demonstrates to the satisfaction of the Air Pollution Control Officer that such additional operation is necessary.~~

(iii) ~~Any existing emergency standby engine at a nuclear power generating station subject to the requirements of the Nuclear Regulatory Commission provided that operation of the engine for non-emergency purposes does not exceed 200 hours per calendar year.~~

(2) The provisions of Subsection (d)(1) of this rule shall not apply to the following:

(i) Any non-emergency engine during startup and shutdown periods, provided that the startup and shutdown periods do not exceed 60 continuous minutes each for engines with a selective catalytic reduction (SCR) system installed, or 30 continuous minutes each for engines without SCR installed.

(ii) Any new, modified or replacement engine with add-on control equipment only during a commissioning period, as determined by the Air Pollution Control Officer, provided that:

(A) prior to the commencement of a commissioning period, the owner or operator shall provide written notification to the Air Pollution Control Officer when the commissioning period will commence and its expected duration;

(B) the maximum allowable duration of a commissioning period, not to exceed 100 hours, shall be determined and approved by the Air Pollution Control Officer; and

(C) the air quality and public health risk impacts of emissions from the project, including emissions during the commissioning period, shall comply with the applicable requirements of Rules 20.2 and 20.3 (New Source Review Rules), and Rule 1200 - Toxic Air Contaminants – New Source Review of these Rules and Regulations.

To claim the applicability of this exemption, records shall be maintained in accordance with Subsections (g)(5) or (g)(6) of this rule, as applicable. Nothing in this
Regulation IV -2- Rule 69.4.1

rule shall be construed to limit the actual time needed during a commissioning period, or to conduct a startup or shutdown.

(3) The provisions of Subsections (d)(1), (e)(1), (e)(2), (e)(5), (f)(1), (g)(3), (g)(4), and (i)(1) shall not apply to the following:

(i) Any emergency standby engine that commenced operation in San Diego County on or before November 15, 2000, provided that operation of the engine for testing or maintenance purposes does not exceed 52 hours per calendar year. Operation for testing or maintenance purposes may be allowed for not more than 100 hours per year, with prior written authorization from the Air Pollution Control Officer, provided that an owner or operator demonstrates to the satisfaction of the Air Pollution Control Officer that such additional operation is necessary.

(ii) Any engine that commenced operation in San Diego County on or before November 15, 2000, and operates less than 200 hours per calendar year, as determined by a non-resettable meter that measures elapsed operating time.

To claim the applicability of this exemption, records shall be maintained in accordance with Subsections (g)(1) and (g)(2), as applicable.

(34) The provisions of Subsections (e)(1), (e)(2), ~~(e)(5)~~, (f)(1), (g)(3), (g)(4), ~~(g)(5)~~ and (i)(1) of this rule shall not apply to:

(i) Any emergency standby engine that commenced operation in San Diego County after November 15, 2000, or new or replacement emergency standby engine, provided that operation of the engine for ~~non-emergency testing or maintenance~~ purposes does not exceed 52 hours per calendar year. Operation ~~for testing or maintenance purposes~~ may be allowed for not more than 100 hours per year, with prior written authorization from the Air Pollution Control Officer, provided that an owner or operator demonstrates to the satisfaction of the Air Pollution Control Officer that such additional operation is necessary.

(ii) Any engine that commenced operation in San Diego County after November 15, 2000, or new or replacement engine ~~which~~, provided that operation of the engine ~~is operates~~ less than 200 hours per calendar year, as determined by a non-resettable meter that measures elapsed operating time.

To claim the applicability of this exemption, records shall be maintained in accordance with Subsections (g)(1) and (g)(2) of this rule.

~~(4) The provisions of Subsections (d)(1) through (d)(3) of this rule shall not apply to existing low-use diesel engines equipped with any two of the following: turbocharger, aftercooler, or injection timing retard by 4 degrees.~~

~~An owner or operator of an engine who is claiming an exemption pursuant to Subsections (b)(2), (b)(3) or (b)(4) shall maintain records in accordance with Subsections (g)(1) and (g)(2) of this rule.~~

(5) The provisions of Subsection (e)(2) shall not apply to any engine with manufacturer installed add-on control equipment and certified with such equipment by the Environmental Protection Agency (EPA).

~~(46) The provisions of Subsection (g)(4) of this rule shall not apply to any engine that is equipped with a continuous emission monitoring system (CEMS) pursuant to Subsection (e)(4).~~

~~(57) The provisions of Section (i) – Source Test Requirements of this rule shall not apply to any engine certified by the Environmental Protection Agency (EPA) or the California Air Resources Board (CARB) at emission concentrations equal to or below the applicable emission standards of Subsection (d)(1), provided the following requirements are met:~~

(i) The engine family has been tested and certified according to an EPA or CARB approved procedure, and the certification documents are provided to the District.

(ii) The engine and its emission control system are maintained as specified in Section (f) – Inspection and Maintenance Requirements.

(iii) There is no evidence of engine tampering.

(c) DEFINITIONS

For the purposes of this rule, the following definitions shall apply:

(1) **"Add-on Control Equipment"** means any technology that is used to reduce emissions from the exhaust gas stream of an engine and is installed downstream of the engine.

(2) **"Agricultural Operations"** means the growing and harvesting of crops or the raising of fowl or animals, for the primary purpose of earning a living, or of conducting agricultural research or instruction by an educational institution.

(3) **"Approach Light System with Sequenced Flasher Lights in Category 1 and Category 2 Configurations (ALSF-1 and ALSF-2)"** means high intensity approach lighting systems with sequenced flashers used at airports to illuminate specified runways during Category II or III weather conditions, where Category II means a decision height of 100 feet and runway visual range of 1,200 feet, and Category III means no decision height or decision height below 100 feet and runway visual range of 700 feet.

(2) **"Best Available Retrofit Control Technology (BARCT)"** means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

(4) **"Black Start Engine"** means an engine whose only purpose is to start up a combustion turbine and associated equipment.

(35) **"Brake Horsepower Rating, (bhp)"** means the maximum continuous brake horsepower output rating of the internal reciprocating combustion engine as specified by the engine manufacturer and listed on the engine nameplate, if available, regardless of any derating or in other documentation establishing the maximum continuous brake horsepower as approved by the Air Pollution Control Officer.

(46) **"Calendar Year"** means the same as defined in Rule 2 - Definitions.

(57) **"California Diesel Fuel"** means any fuel that is commonly or commercially known, sold or represented as diesel fuel No. 1-D or No. 2-D, and which meets the requirements specified in 13 CCR, Sections 2281 and 2282 of Title 13 of the California Code of Regulations.

(68) **"Capacity Factor"** means the ratio, expressed as a percentage, of the annual fuel consumption to the manufacturer's specified maximum annual fuel consumption or manufacturer's specified maximum hourly fuel consumption times 8,760 hours, whichever is less.

(9) **"CCR"** means California Code of Regulations.

(710) **"Certified Engine"** means: ~~an means an engine certified to comply with the Tier 1, Tier 2, or Tier 3 emission standards specified in Section 89.112 of the Code of Federal Regulations (40 CFR Part 89) - Control of Emissions of Air Pollution from Non-Road Diesel Engines or with the Tier 1, Tier 2, or Tier 3 emission standards specified in~~

~~Section 2423 of Title 13 of the California Code of Regulations—California Regulations for New 1996 and Later Off-Road Compression-Ignition Engines.~~

(i) A compression-ignition engine certified to comply with the Tier 1, Tier 2, Tier 3, Tier 4 interim, or Tier 4 final emission standards specified in 40 CFR Part 89, or in 40 CFR Part 1039, as applicable; or as specified in 13 CCR, Section 2423;
or

(ii) A spark-ignition engine certified to comply with the emission standards specified in 40 CFR Part 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines), 40 CFR Part 90, or 40 CFR Part 1048, as applicable; or as specified in 13 CCR, Section 2433.

(11) "CFR" means Code of Federal Regulations.

(12) "CO" means carbon monoxide.

(13) "Commissioning Period" means the period of time after the first firing of fuel when a new, modified or replacement engine undergoes initial tuning, debugging, performance testing and/or optimization, and before the add-on control equipment is installed and fully operational.

~~(8) "Cyclic Engine" means an engine, such as gantry cranes, having an external load which varies by approximately 40 percent or more of rated capacity under normal operating conditions during any load cycle.~~

(14) "Dual-Fueled Engine" means an engine designed to operate simultaneously on gaseous fuel and diesel fuel.

(15) "Emergency Situation" means providing electrical power or mechanical work during any of the following events and subject to the following conditions:

(i) The failure or loss of all or part of normal electrical power service or normal natural gas supply to the facility:

(A) 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

(B) which is demonstrated by the owner or operator to the Air Pollution Control Officer's satisfaction to have been beyond the reasonable control of the owner or operator.

(ii) The failure of a facility's internal power distribution system:

(A) 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

(B) which is demonstrated by the owner or operator to the Air Pollution Control Officer's satisfaction to have been beyond the reasonable control of the owner or operator.

(iii) The pumping of water or sewage to prevent or mitigate a flood or sewage overflow.

(iv) The pumping of water for fire suppression or protection.

(v) The powering of ALSF-1 and ALSF-2 airport runway lights under Category II or III weather conditions.

(vi) The pumping of water to maintain pressure in the water distribution system for the following reasons:

(A) a pipe break that substantially reduces water pressure; or

(B) high demand on the water supply system due to high use of water for fire suppression; or

(C) the breakdown of pumping equipment at sewage treatment facilities or water delivery facilities.

(916) **"Emergency Standby Engine"** means an engine used exclusively in emergency situations, except as provided in Subsections ~~(b)(2)(ii), (b)(2)(iii) and (b)(3)(i) or (b)(4)(i)~~, to drive an electrical generator, an air compressor, or a water pump.

(10) **"Emergency Situation"** means ~~any one of the following:~~

~~(i) An unforeseen electrical power failure from the serving utility or of on-site electrical transmission equipment.~~

~~(ii) An unforeseen flood or fire, or a life-threatening situation.~~

~~(iii) Operation of emergency generators for Federal Aviation Administration licensed or military airports for the purpose of providing power in anticipation of a power failure due to severe storm activity.~~

~~Emergency situation shall not include operation for purposes of supplying power for distribution to an electrical grid, operation for training purposes, or other foreseeable events.~~

~~(117)~~ **"Engine Family"** means a group of engines expected to have similar emissions and other characteristics throughout their useful life as specified in ~~Section 89.116, 40 CFR Part 89, Section 89.116.~~

~~(118)~~ **"Engine Tampering"** means removing or rendering inoperative any device or design element of the engine or its emission control system; or the manufacturing or installation of a part or a component which objective is to bypass, defeat, or render inoperative a device or design element of the engine or its emission control system.

~~(119)~~ **"Existing Engine"** means an engine for which commenced operation in San Diego County on or before November 15, 2000 a complete application was submitted to the District on or before (date of adoption).

~~(120)~~ **"Fossil Derived Gaseous Fuel"** means gaseous fuel including, but not limited to, natural gas, methane, ethane, propane, butane, and gases stored as liquids at high pressure such as liquefied petroleum gas, but excluding waste derived gaseous fuel.

~~(21)~~ **"Generator Set"** means an engine coupled to a generator that is used as a source of electricity.

~~(15)~~ **"High-use Engine"** means ~~an engine operating at a capacity factor of greater than 15%.~~

~~(122)~~ **"Lean-burn Engine"** means an engine that is designed to operate with an air-to-fuel ratio that is more than 1.1 times the stoichiometric air-to-fuel ratio.

~~(17)~~ **"Load Cycle"** means ~~the time interval between consecutive commencement of application of external load to an engine.~~

~~(18)~~ **"Low-use Engine"** means ~~an engine operating at a capacity factor of 15% or less.~~

~~(123)~~ **"Military Tactical Support Equipment"** means the same as defined in Rule 2 - Definitions.

~~(124)~~ **"New Engine"** means an engine for which commenced operation in San Diego County a complete application was submitted to the District after November 15, 2000 (date of adoption).

~~(25)~~ **"NMHC"** means non-methane hydrocarbons.

~~(26)~~ **"Permit Year"** means the 12-month period ending on the last day of the Permit to Operate expiration month.

~~(127)~~ **"Portable Emission Unit"** means the same as defined in Rule 20.1 - New Source Review (NSR) – General Provisions.

(2228) **"Replacement Engine"** means an engine that meets the definition of a replacement emission unit in Rule 20.1 - New Source Review (NSR) – General Provisions, and is not an existing engine as defined in this rule.

(2329) **"Rich-Burn Engine"** means an engine that is designed to operate with an air-to-fuel ratio less than or equal to 1.1 times the stoichiometric air-to-fuel ratio.

(30) **"School Grounds"** means any public or private school 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 primarily conducted in a private home(s). "School Grounds" includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.

(31) **"Shutdown"** means a sequence of actions necessary to cease operation of an engine and includes the amount of time needed to safely do so. A shutdown ends when fuel flow and emissions cease.

(32) **"Startup"** means a sequence of actions necessary to begin operation of an engine and includes the amount of time needed for an engine and ancillary equipment to achieve stable operation. A startup begins when fuel flow to the combustion chamber starts.

(2433) **"Stationary Internal Combustion Engine" or "Engine"** means a spark or compression ignited, reciprocating internal combustion engine which is not a portable emission unit.

(25) **"Stationary Source"** means the same as defined in Rule 2.

(2634) **"Stoichiometric Air-to-Fuel Ratio"** means the chemically balanced air-to-fuel ratio at which all fuel and all oxygen in the air and fuel mixture are theoretically consumed by combustion.

(35) **"Synthesis Gas" or "Syngas"** means a fuel gas mixture produced by gasification of a carbon containing fuel to a gaseous product that has some heating value.

(36) **"Testing or Maintenance"** means operating an emergency standby engine to:

(i) Evaluate the ability of the engine or its supported equipment to perform during an emergency. "Supported Equipment" includes, but is not limited to, generators, pumps, transformers, switchgear, uninterruptible power supply, and breakers; or

(ii) Facilitate the training of personnel on emergency activities; or

(iii) 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 situation; or

(iv) Provide additional hours of operation to perform testing on an engine that has experienced a breakdown or failure during maintenance. Upon approval by the Air Pollution Control Officer, these additional hours of operation will not be counted in the maximum allowable annual hours of operation for the emergency standby engine that provided the electrical power. Operation for testing or maintenance purposes may be allowed for not more than 10 hours per year, with prior written authorization from the Air Pollution Control Officer, provided that an owner or operator demonstrates to the satisfaction of the Air Pollution Control Officer that such additional operation is necessary; or

(v) Provide electric power for the facility during an electrical upgrade, such as the replacement or addition of electrical equipment and systems resulting in increased generation, transmission and/or distribution capacity; or

(vi) Provide electric power for the facility during the repair of supported equipment as defined in Subsection (c)(36)(i).

(2737) "Uncontrolled Oxides of Nitrogen (NOx) Emissions" means NOx emissions from an engine before application of add-on control equipment.

(2838) "Volatile Organic Compound (VOC)" means the same as defined in Rule 2 - Definitions.

(2939) "Waste Derived Gaseous Fuel" means gaseous fuel including, but not limited to, digester gas and landfill gas, but excluding fossil derived gaseous fuel and synthesis gas.

(d) STANDARDS

(1) A person shall not operate a stationary internal combustion engine subject to this rule unless:

(i) Uncontrolled NOx emissions, calculated as nitrogen dioxide, from the following engines are reduced with add-on control equipment by not less than the following:

	Weight Percent Engine Category <u>Reduction</u>
Rich-burn engines using fossil derived gaseous fuel or gasoline	96
Lean-burn engines using fossil derived gaseous fuel	90
Engines using exclusively waste derived gaseous fuel <u>or syngas</u>	90
Engines using diesel or kerosene fuel	90
<u>Dual-fueled engines</u>	<u>90</u>
<u>Rich-burn engines used exclusively in agricultural operations</u>	<u>80</u>
<u>Lean-burn engines used exclusively in agricultural operations</u>	<u>70</u>

or

(ii) The emissions of NO_x, in parts per million by volume (ppmv), calculated as nitrogen dioxide at 15% oxygen on a dry basis, or in grams of NO_x per brake horsepower-hour, as indicated, are not greater than the following:

<u>Engine Category</u>	<u>Concentration of NO_x</u>
Rich-burn engines using fossil derived gaseous fuel or —gasoline	25 ppmv
Rich-burn engines using exclusively waste derived —gaseous fuel	50 ppmv
Lean-burn engines using gaseous fuel	65 ppmv
Existing low-use engines using diesel or kerosene fuel	9.0 g/bhp-hr or 700 ppmv
Existing cyclic engines using diesel or kerosene fuel	9.0 g/bhp-hr or 700 ppmv
High-use engines using diesel or kerosene fuel	6.9 g/bhp-hr or 535 ppmv
New or replacement low-use engines using diesel or —kerosene fuel	6.9 g/bhp-hr or 535 ppmv
New or replacement cyclic engines using diesel or —kerosene fuel	6.9 g/bhp-hr or 535 ppmv

(ii) The emissions shall not exceed the following:

(A) Existing Non-Emergency Engines

<u>Engine Type</u>	<u>Concentration of NO_x¹</u>	<u>Concentration of VOC²</u>	<u>Concentration of CO³</u>
<u>Rich-burn engines using fossil derived gaseous fuel or gasoline</u>	<u>25 ppmv</u>	<u>250 ppmv</u>	<u>2,000 ppmv</u>
<u>Rich-burn engines using exclusively waste derived gaseous fuel</u>	<u>50 ppmv</u>	<u>250 ppmv</u>	<u>2,000 ppmv</u>

<u>Lean-burn engines using gaseous fuel</u>	<u>65 ppmv</u>	<u>750 ppmv</u>	<u>2,000 ppmv</u>
<u>Engines using diesel fuel</u>	<u>6.9 g/bhp-hr</u>	<u>N/A</u>	<u>4,500 ppmv</u>

(B) Existing Emergency Standby Engines

<u>Engine Type</u>	<u>Concentration of NO_x¹</u>	<u>Concentration of VOC²</u>	<u>Concentration of CO³</u>
<u>Rich-burn engines using gaseous fuel</u>	<u>25 ppmv</u>	<u>250 ppmv</u>	<u>4,500 ppmv</u>
<u>Lean-burn engines using gaseous fuel</u>	<u>2.0 g/bhp-hr</u>	<u>N/A</u>	<u>4,500 ppmv</u>
<u>Engines using diesel fuel</u>	<u>6.9 g/bhp-hr</u>	<u>N/A</u>	<u>4,500 ppmv</u>

¹Calculated as nitrogen dioxide in parts per million by volume (ppmv) corrected to 15% oxygen on a dry basis, or in grams of NO_x per brake horsepower-hour, as indicated.

²Calculated as methane in ppmv corrected to 15% oxygen on a dry basis.

³Calculated as carbon monoxide in ppmv corrected to 15% oxygen on a dry basis.

(C) New or Replacement Non-Emergency Engines – Gaseous Fuel

<u>Engine Type</u>	<u>Concentration of NO_x¹ (ppmv)</u>	<u>Concentration of VOC² (ppmv)</u>	<u>Concentration of CO³ (ppmv)</u>	<u>Concentration of formaldehyde⁴ (ppmv)</u>
<u>Rich-burn engines using fossil derived gaseous fuel or gasoline</u>	<u>11</u>	<u>60</u>	<u>270</u>	<u>70</u>
<u>Rich-burn engines using waste derived gaseous fuel or syngas</u>	<u>50</u>	<u>80</u>	<u>610</u>	<u>70</u>
<u>Lean-burn engines using fossil derived gaseous fuel</u>	<u>65</u>	<u>60</u>	<u>270</u>	<u>70</u>
<u>Lean-burn engines using waste derived gaseous fuel or syngas</u>	<u>65</u>	<u>80</u>	<u>610</u>	<u>70</u>
<u>Rich-burn engines used exclusively in agricultural operations</u>	<u>90</u>	<u>250</u>	<u>2000</u>	<u>N/A</u>
<u>Lean-burn engines used exclusively in agricultural operations</u>	<u>150</u>	<u>750</u>	<u>2000</u>	<u>N/A</u>

¹Calculated as nitrogen dioxide in ppmv corrected to 15% oxygen on a dry basis.

²Calculated as methane in ppmv corrected to 15% oxygen on a dry basis, and excluding emissions of formaldehyde.

³Calculated as carbon monoxide in ppmv corrected to 15% oxygen on a dry basis.

⁴Calculated as formaldehyde in ppmv corrected to 15% oxygen on a dry basis.

(D) New or Replacement Non-Emergency Engines – Diesel Fuel

<u>Engine Type</u>	<u>Concentration of NO_x (g/bhp-hr)</u>	<u>Concentration of NMHC (g/bhp-hr)</u>	<u>Concentration of CO (g/bhp-hr)</u>
<u>Certified engines using diesel fuel, 50 ≤ bhp < 75</u>	<u>3.5</u>	<u>N/A</u>	<u>3.7</u>
<u>Certified engines using diesel fuel, 75 ≤ bhp < 175</u>	<u>0.3</u>	<u>0.14</u>	<u>3.7</u>
<u>Certified engines using diesel fuel, 175 ≤ bhp < 750</u>	<u>0.3</u>	<u>0.14</u>	<u>2.6</u>
<u>Certified engines using diesel fuel, bhp ≥ 750</u>	<u>2.6</u>	<u>0.14</u>	<u>2.6</u>
<u>Certified generator sets using diesel fuel, bhp ≥ 750</u>	<u>0.5</u>	<u>0.14</u>	<u>2.6</u>

(E) New or Replacement Emergency Standby Engines

<u>Engine Type</u>	<u>Concentration of NO_x¹</u>	<u>Concentration of VOC²</u>	<u>Concentration of CO³</u>
<u>Rich-burn engines using gaseous fuel</u>	<u>25 ppmv</u>	<u>86 ppmv</u>	<u>540 ppmv</u>
<u>Lean-burn engines using gaseous fuel</u>	<u>2.0 g/bhp-hr or 160 ppmv</u>	<u>1.0 g/bhp-hr or 86 ppmv</u>	<u>4.0 g/bhp-hr or 540 ppmv</u>
<u>Black start engines using gaseous fuel</u>	<u>2.0 g/bhp-hr or 160 ppmv</u>	<u>1.0 g/bhp-hr or 86 ppmv</u>	<u>4.0 g/bhp-hr or 540 ppmv</u>
<u>Certified engines using diesel fuel, 50 ≤ bhp < 100</u>	<u>3.5 g/bhp-hr</u>	<u>N/A</u>	<u>3.7 g/bhp-hr</u>
<u>Certified engines using diesel fuel, 100 ≤ bhp < 175</u>	<u>3.0 g/bhp-hr</u>	<u>N/A</u>	<u>3.7 g/bhp-hr</u>
<u>Certified engines using diesel fuel, 175 ≤ bhp < 750</u>	<u>3.0 g/bhp-hr</u>	<u>N/A</u>	<u>2.6 g/bhp-hr</u>
<u>Certified engines using diesel fuel, bhp ≥ 750</u>	<u>4.8 g/bhp-hr</u>	<u>N/A</u>	<u>2.6 g/bhp-hr</u>

¹Calculated as nitrogen dioxide in ppmv corrected to 15% oxygen on a dry basis, or in grams of NO_x per brake horsepower-hour, as indicated.

²Calculated as methane in ppmv corrected to 15% oxygen on a dry basis, or in grams of VOC per brake horsepower-hour, as indicated, and excluding emissions of formaldehyde.

³Calculated as carbon monoxide in ppmv corrected to 15% oxygen on a dry basis, or in grams of CO per brake horsepower-hour, as indicated.

~~(2) For all engines subject to Subsection (d)(1) of this rule, emissions of carbon monoxide (CO), calculated at 15% oxygen on a dry basis, shall not exceed 4,500 ppmv.~~

~~(3) For all rich burn engines subject to Subsection (d)(1) of this rule, emissions of VOC, calculated as methane at 15% oxygen on a dry basis, shall not exceed 250 ppmv.~~

(42) Any engine subject to this rule and operating on diesel fuel shall use only California Diesel Fuel.

(e) MONITORING REQUIREMENTS

(1) An owner or operator of an engine without add-on control equipment, except engines specified in Subsections ~~(b)(2) or (b)(3) or (b)(4)~~, shall monitor the operating parameters recommended by the engine manufacturer and any additional operating parameters identified by the Air Pollution Control Officer. Such operating parameters may include, but are not limited to:

- (i) engine air-to-fuel ratio;
- (ii) engine inlet manifold temperature and pressure; and
- (iii) oxygen content of the exhaust gas.

Where the Air Pollution Control Officer determines that it is not feasible to monitor operating parameters of an engine or such monitoring may not be indicative of air contaminant emissions, the requirements of this subsection may be waived provided that periodic inspection and maintenance are conducted as specified in Section (f) – Inspection and Maintenance Requirements.

(2) An owner or operator of an engine with add-on control equipment, except engines specified in Subsections (b)(3) or (b)(4), shall install, operate and maintain in calibration, devices that continuously monitor the operational characteristics of the engine and any NOx emission reduction system as determined necessary to ensure compliance by the Air Pollution Control Officer. Such operational characteristics ~~may~~ shall include, but are not limited to:

- (i) engine air-to-fuel ratio;
- (ii) temperature of exhaust gas at the inlet and outlet of the add-on control equipment;

(iii) oxygen content of exhaust gas at the inlet and outlet of the add-on control equipment; ~~and or~~

(iv) flow rate of NOx reducing agent added to the engine exhaust gas.

(3) An owner or operator of an engine subject to this rule shall install, and maintain in good working order, a non-resettable totalizing fuel meter and/or non-resettable meter that measures elapsed operating time as determined appropriate by the Air Pollution Control Officer. If an engine hour meter is replaced, the owner or operator shall notify the Air Pollution Control Officer in accordance with Subsection (g)(7).

(4) An owner or operator of a new or replacement non-emergency gaseous-fueled engine rated at 1,000 bhp or greater and permitted to operate more than 2,000 hours per calendar year shall install, operate, and maintain in calibration a Continuous Emissions Monitoring System (CEMS) to continuously measure and record oxygen concentration, and NOx and CO emission concentrations corrected to 15% oxygen. The CEMS shall be certified, calibrated and maintained in accordance with all applicable federal regulations including, but not limited to, reporting requirements of 40 CFR Part 60, Sections 60.7(c), 60.7(d), and 60.13; performance specifications of 40 CFR Part 60 Appendix B; quality assurance procedures of 40 CFR Part 60 Appendix F; or other District CEMS rules; and a protocol approved in writing by the Air Pollution Control Officer.

(5) An owner or operator of a non-emergency gaseous-fueled engine, except engines specified in Subsections (b)(3)(ii), (b)(4)(ii) or (e)(4), shall have a trained operator use a portable analyzer to take NOx and CO emission readings to verify compliance with the emission standards of Subsection (d)(1) during any calendar quarter in which a source test is not performed, and comply with all of the following:

(i) All emission readings shall be taken with the engine operating either at the highest achievable continuous brake horsepower rating, or under the typical duty cycle or operational mode of the engine;

(ii) Emission readings shall be averaged over a consecutive 15-minute period by either taking a cumulative 15 consecutive minute sample reading or by taking at least five (5) readings evenly spaced out over the 15 consecutive minute period;

(iii) At least 6 calendar weeks shall separate the date of the last emission reading taken or source test conducted in the previous calendar quarter and the first emission reading taken in the subsequent calendar quarter in which a source test is not performed;~~and~~

(iv) If an engine is found to exceed the emission standards of Subsection (d)(1), the owner or operator shall bring the engine into compliance within 20 calendar days of the initial out-of-compliance reading as determined by the requirements of this Subsection (e)(5). If the engine is not brought into compliance within 20 calendar days, the exceedance shall be considered a violation of the rule; and

(v) A trained operator is a person who has completed an appropriate South Coast Air Quality Management District (SCAQMD) approved training program in the operation of portable analyzers, and has received a certification issued by SCAQMD.

(f) INSPECTION AND MAINTENANCE REQUIREMENTS

(1) An owner or operator of an engine subject to this rule, except engines specified in Subsections ~~(b)(2) or (b)(3), (b)(4), (e)(4) or (e)(5)~~, shall conduct periodic inspections of the engine and any add-on control equipment, as applicable, to ensure that the engine and control equipment is operated in compliance with the provisions of this rule. Inspections shall be conducted at least once every 4,000 hours of operation, or every six months, whichever is less.

(2) An owner or operator of an engine subject to this rule shall conduct ~~periodic~~, at a minimum, annual maintenance of the engine and any add-on control equipment, as applicable, as recommended by the engine and control equipment manufacturers or as specified by any other maintenance procedure approved in writing by the Air Pollution Control Officer. ~~The periodic~~ Notwithstanding the frequencies recommended by the engine and control equipment manufacturers, the annual maintenance shall be conducted at least once each calendar year. Engine maintenance shall include, but is not limited to, the following:

(i) Changing the oil and filter, or testing the oil in accordance with the requirements of 40 CFR Part 63, Sections 63.6625(i) or 63.6625(j);

(ii) Inspecting and cleaning air filters, and replacing as necessary;

(iii) Inspecting all hoses and belts, and replacing as necessary; and

(iv) Inspecting spark plugs, if equipped, and replacing as necessary.

(3) Notwithstanding the frequencies specified in Subsections (f)(1) and (f)(2), the Air Pollution Control Officer may require an owner or operator of an engine to conduct inspections and/or maintenance of the engine and any associated add-on control equipment more frequently if deemed necessary to assure compliance with this rule.

(g) RECORD KEEPING REQUIREMENTS

(1) An owner or operator of an engine subject to this rule shall keep the following records in electronic and/or hardcopy format and shall maintain these records on-site for at least the same period of time as the engine to which the records apply is located at the site:

- (i) engine manufacturer name and model number;
- (ii) brake horsepower rating;
- (iii) combustion method, (i.e., rich-burn or lean-burn);
- (iv) fuel type(s);
- (v) California Diesel Fuel certification, if applicable; and
- (vi) a manual of recommended maintenance as provided by the engine manufacturer, or other maintenance procedure as approved in writing by the Air Pollution Control Officer.

Where the information specified in Subsections (g)(1)(i) through (g)(1)(iv) is contained in a District Permit to Operate ~~or Certificate of Registration~~, and is the most current information, an additional record of this information shall not be required.

(2) An owner or operator of an engine exempt pursuant to Subsections ~~(b)(2) or (b)(3) or (b)(4)~~ shall ~~maintain an operating log containing~~, at a minimum, the following:

- (i) an operating log containing dates and elapsed times of every instance of engine operation either based on actual readings of engine hour or fuel meter, or validated against such actual readings during owner or operator visits to unmanned sites only. In addition, an owner or operator of an emergency standby diesel engine located within 500 feet of school grounds shall also maintain the time of day of every instance of engine operation for testing or maintenance; except for an engine that emits no more than 0.01 g/bhp-hr of diesel particulate matter, or meets the requirements specified in 17 CCR, Section 93115.13(f). If applicable, indicate whether the operation was for ~~non-emergency purposes testing or maintenance or~~

during an emergency situation and the nature of the emergency, ~~if available; and~~
maintain the following:

(A) ~~for an total external power outage that was beyond the reasonable control of the owner or operator,~~ documentation from the serving utility of an outage in the area where the engine is located; and/or

(B) ~~for an internal power outage that was beyond the reasonable control of the owner or operator,~~ a description of what caused the failure, and receipts and/or work orders for the necessary repairs, and a description of what caused the failure, as applicable; and

(C) for a partial external power outage, including a low-voltage or electric transient incident, in which the external power voltage is low enough to trigger the operation of an emergency standby engine, a description of the incident.

(ii) ~~total cumulative hours of operation per calendar year, based on actual readings of engine hour or fuel meter; and~~

(iii) ~~records of periodic annual engine maintenance, including dates maintenance was performed and the nature of the maintenance.~~

~~The records specified in Subsection (g)(2)(i) are not required if total engine operations for any purpose, including emergency situations, do not exceed 52 hours in a calendar year.~~

(3) An owner or operator of an engine subject to this rule, except engines specified in Subsections ~~(b)(2) or (b)(3) or (b)(4)~~, shall maintain a log containing, at a minimum, the following:

(i) ~~records of engine inspection, including dates an inspection was performed; and~~

(ii) ~~records of annual engine maintenance, including dates maintenance was performed and the nature of the maintenance.~~

(4) An owner or operator of an engine subject to this rule, except engines specified in Subsections ~~(b)(2) or (b)(3), (b)(4) or (e)(4)~~, shall measure and record at least

once each calendar month the applicable operating parameters identified pursuant to Subsections (e)(1) or (e)(2).

~~(5) An owner or operator of a low-use engine operating on diesel or kerosene fuel and subject to the requirements of Section (d)(1) shall maintain records of total cumulative hours of operation or total fuel consumption per calendar year, as applicable.~~

(5) An owner or operator of any non-emergency engine claiming an exemption pursuant to Subsection (b)(2)(i) shall maintain an operating log and record dates, times and duration of all startups and shutdowns.

(6) An owner or operator of a new, modified, or replacement engine claiming an exemption pursuant to Subsection (b)(2)(ii) shall comply with all of the following:

(i) Record and maintain the dates and times when fuel is being combusted and cumulative operating time for each new, modified, or replacement engine; and

(ii) Record and maintain any emissions data or other operating parameter data acquired or calculated by CEMS, or otherwise required by this rule for the engine.

(7) An owner or operator of an engine subject to the requirements of Subsection (e)(3) shall provide written notification to the Air Pollution Control Officer within 10 calendar days of replacing the engine hour meter. The notification shall include the following:

(i) Old meter's hour reading upon removal;

(ii) Replacement meter's manufacturer name, model, and serial number, if available;

(iii) Current hour reading of the replacement meter upon installation;

(iv) Copy of receipt of new meter, or of installation work order.

(8) An owner or operator of an engine subject to the requirements of Subsection (e)(5) shall comply with all of the following:

(i) Record and maintain all emission readings, and the dates and times of when the readings were recorded;

(ii) Maintain records of all calibrations, including relative accuracy during calibration, and maintenance of any portable analyzer used;

(iii) Maintain a manual of recommended calibration, maintenance and operation as provided by the manufacturer; and

(iv) Provide written notification to the Air Pollution Control Officer within 2 business days of a reading that exceeds the emission standards of Subsection (d)(1).

(69) All records required by Subsections (g)(2) through (g)(5-7) shall be retained in electronic and/or hardcopy format on-site for at least three years and made available to the District upon request.

(10) All records required by Subsection (g)(8) shall be retained in electronic and/or hardcopy format on-site, or off-site in a central location, for at least three years and made available to the District upon request.

(h) **TEST METHODS**

When more than one test method or set of test methods are specified in this section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

(1) All testing performed to determine compliance with the emission ~~limits~~ standards of Subsections (d)(1), ~~(d)(2)~~ and/or ~~(d)(3)~~, except as provided in Subsection (h)(3) below, shall be conducted in accordance with the following procedures:

(i) Measurement of NO_x, CO, ~~carbon dioxide (CO₂)~~ and oxygen content of exhaust gas shall be determined in accordance with the San Diego County Air Pollution Control District Test Method 100 (Test Procedures for the Determination of Nitrogen Oxides, Carbon Monoxide and Diluent Gases by Continuous Emission Monitoring), May 1995, Air Resources Board (ARB) Test Method 100 or equivalent Environmental Protection Agency (EPA) Test Method.

(ii) Measurement of VOC emissions shall be determined in accordance with the San Diego County Air Pollution Control District Test Method 25A (Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer), January 1992; EPA Test Methods 25A (Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer), August 2017; and/or the San Diego County Air Pollution Control District Test Method 18 (Measurement of Gaseous Organic Compound Emissions by Gas Chromatography), February 1992; EPA Test Method 18 (Measurement of Gaseous Organic Compound Emissions by Gas Chromatography), August 2017; EPA Test Method 316 (Sampling and Analysis for Formaldehyde Emissions from Stationary Sources in the Mineral Wool and Wool Fiberglass Industries, August 2017; EPA Test Method 323 (Measurement of Formaldehyde Emissions from Natural Gas-Fired Stationary Sources - Acetyl Acetone Derivatization Method), August 2017.

(iii) Emission concentrations of NO_x, VOC, and CO ~~emission concentrations~~ shall be calculated as an average of three subtests. The averaging period to calculate NO_x and CO emission concentrations and to determine compliance shall be at least 30 minutes and not more than ~~60-120~~ minutes unless otherwise specified in writing by the Air Pollution Control Officer.

(2) Specifications for California Diesel Fuel, if not provided by a vendor, shall be determined by the test methods specified in 13 CCR, Sections 2281 and 2282 of Title 13 of the California Code of Regulations.

(3) For an engine operating on diesel or kerosene fuel without add-on control equipment and certified by EPA or CARB at an emission rate concentrations equal to or below the applicable emission ~~rate limits standards~~ of ~~Section Subsection (d)(1),~~ measurements of NO_x, CO, CO₂, and oxygen content of exhaust gas shall be conducted in accordance with a test method approved by the District and ARB. Until such test method is approved, such engine shall be deemed in compliance with the emission rate limits standards of Section Subsection (d)(1), provided the requirements of Subsection (ib)(4-5) are met.

(4) ~~If a~~ A portable emission analyzer is used to provide emission data pursuant to Subsection (e)(5), the analyzer shall be calibrated, maintained and operated in accordance with a protocol approved in writing by the Air Pollution Control Officer the manufacturer's specifications and recommendations, and the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Stationary Engines Subject to South Coast Air Quality Management District Rules 1110.2, 1146, and 1146.1, May 2009. Emissions measured during source tests conducted in accordance with Subsection (h)(1) shall supersede the readings recorded with the use of a portable emission analyzer in the event of conflicting results.

(5) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board, and EPA may be used in place of the test methods specified in this rule.

(i) **SOURCE TEST REQUIREMENTS**

~~Except as provided in Subsection (i)(4), s~~Source tests shall be conducted according to the following:

(1) After initial compliance has been determined, any engine subject to the requirements of Subsections (d)(1), ~~(d)(2) and/or (d)(3),~~ except engines specified in Subsections (b)(3), (b)(4), (b)(7), and or (i)(2), shall be source tested at least once every ~~24 months~~ 2 permit years, unless more frequent testing is otherwise specified in writing by the Air Pollution Control Officer.

(2) ~~A new~~ An existing non-emergency gaseous-fueled engine rated at 1,000 bhp or greater and permitted to operate more than 2,000 hours per calendar year shall be tested at least once every permit year, unless more frequent testing is otherwise specified in writing by the Air Pollution Control Officer.

(3) A new non-emergency gaseous-fueled engine rated at 1,000 bhp or greater and permitted to operate more than 2,000 hours per calendar year shall conduct a Relative Accuracy Test Audit (RATA) for its CEMS at least once every permit year, unless more frequent testing is otherwise specified in writing by the Air Pollution Control Officer.

~~(234)~~ Emissions source testing shall be conducted using the test methods specified in Section (h) – Test Methods and a source test protocol approved in writing by the Air Pollution Control Officer prior to testing.

~~(345)~~ Emissions source testing shall be performed at no less than 80 percent % of the brake horsepower rating. If an owner or operator of an engine demonstrates to the satisfaction of the Air Pollution Control Officer that the engine does not operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous ~~brake-horsepower rating~~, or under the typical duty cycle or operational mode of the engine. The horsepower calculated during the emissions source test shall be used to determine compliance with the emission standards of Subsection (d)(1).

~~(4) Notwithstanding the requirements of Subsection (i)(1), any engine operating on diesel or kerosene fuel without add-on control and certified by EPA or ARB at emission rates equal to or below the applicable emission rate limits of Section (d) shall not require an initial or periodic source test, until an appropriate test method is approved by the District and ARB, provided the following requirements are met:~~

~~(i) The engine family has been tested and certified according to an EPA or ARB approved procedure, and the certification documents are provided to the District.~~

~~(ii) The engine family does not participate in the federal (ABT) program specified in 40 CFR 89, Subpart C and adopted by reference by ARB.~~

~~(iii) The engine and its emission control system are maintained as specified in Section (f).~~

~~(iv) There is no evidence of engine tampering.~~

(56) For the purposes of a compliance determination based on CEMS data, the averaging period to calculate NOx and CO emission concentrations shall be one clock hour.

(j) **COMPLIANCE SCHEDULE**

~~(1) For an engine operating on diesel fuel, comply with the requirements of Subsection (d)(4) by May 15, 2001.~~

(21) The owner or operator of an existing engine subject to the requirements of this rule ~~Subsection (e)(5) shall meet the following increments of progress: by (24 months after date of adoption), submit to the Air Pollution Control Officer documentation which demonstrates that the engine is in compliance with Subsections (e)(5) and (g)(8).~~

(i) ~~By May 15, 2001, submit to the Air Pollution Control Officer an application to modify conditions on the Permit to Operate or to convert a Certificate of Registration to a Permit to Operate, as necessary to comply with the applicable requirements of this rule. The application shall include the following information for the engine that will be evaluated for compliance with this rule:~~

~~(A) The information required by Section (g)(1),~~

~~(B) emission rate data and source of such data, and~~

~~(C) description of how compliance will be achieved (e.g. retrofit, replacement).~~

(ii) ~~By November 15, 2002, submit to the Air Pollution Control Officer documentation which demonstrates that the engine is in compliance with the Section (d)(1) through (d)(3) emission limits for NO_x, CO and VOC, and all other applicable requirements of this rule.~~

(32) For a new or replacement engine, including a new or replacement engine operating less than 200 hours per calendar year or a new or replacement emergency standby engine, comply with all applicable requirements of this rule upon installation and startup.

**RULE 69.4. STATIONARY RECIPROCATING INTERNAL COMBUSTION
ENGINES - REASONABLY AVAILABLE CONTROL TECHNOLOGY**
(Adopted 9/27/94; Rev. Effective 11/15/00; Rev. Effective 7/30/03)

(a) APPLICABILITY

(1) Except as provided in Section (b), this rule shall apply to stationary internal combustion engines with a brake horsepower (bhp) rating of 50 or greater located at a stationary source which emits or has a potential to emit 50 tons per year or more of oxides of nitrogen (NO_x).

(2) An engine subject to this rule or specifically exempt by Subsection (b)(1) of this rule shall not be subject to Rule 68.

(b) EXEMPTIONS

(1) This rule shall not apply to the following:

(i) Engines used exclusively in connection with a structure designed for and used as a dwelling for not more than four families.

(ii) Engines used exclusively in agricultural operations for the growing of crops or the raising of fowl or animals.

(iii) Any engine when operated exclusively within a permitted test cell solely for the research, development, or testing of gas turbine engines or their components.

(iv) Any engine when operated exclusively within a permitted test cell solely for the research, development, or testing of reciprocating internal combustion engines or their components.

(2) The provisions of Section (d) of this rule shall not apply to the following:

(i) Any engine which operates less than 200 hours per calendar year.

(ii) Any emergency standby engine provided that operation of the engine for non-emergency purposes does not exceed 52 hours per calendar year.

(iii) Any emergency standby engine at a nuclear power generating station subject to the requirements of the Nuclear Regulatory Commission provided that operation of the engine for non-emergency purposes does not exceed 200 hours per calendar year.

(iv) Any engine used exclusively in conjunction with military tactical support equipment.

An owner or operator of an engine who is claiming an exemption pursuant to Subsection (b)(2) shall conduct annual maintenance of the engine as recommended by the engine manufacturer or as specified by any other maintenance procedure approved in writing by the Air Pollution Control Officer and shall maintain records in accordance with Subsections (e)(1) and (e)(2) of this rule.

(3) The provisions of Subsections (e)(3), (e)(4), and (e)(5) of this rule shall not apply to any engine which is equipped with a continuous emission monitoring system (CEMS) pursuant to Subsections (e)(7) or (e)(8).

(c) **DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) **"Add-on Control Equipment"** means any technology that is used to reduce emissions from the exhaust gas stream of an engine and is installed downstream of the engine.

(2) **"Brake Horsepower Rating, bhp"** means the maximum continuous brake horsepower output rating as specified by the engine manufacturer and listed on the engine nameplate, if available, regardless of any de-rating.

(3) **"Emergency Standby Engine"** means an engine used exclusively in emergency situations, except as provided in Subsections (b)(2)(ii) and (b)(2)(iii), to drive an electrical generator, an air compressor or a water pump.

(4) **"Emergency Situation"** means any one of the following:

(i) An unforeseen electrical power failure from the serving utility or of on-site electrical transmission equipment.

(ii) An unforeseen flood or fire, or a life-threatening situation.

(iii) Operation of emergency generators for Federal Aviation Administration licensed or military airports for the purpose of providing power in anticipation of a power failure due to severe storm activity.

Emergency situation shall not include operation for purposes of supplying power for distribution to an electrical grid, operation for training purposes, or other foreseeable events.

(5) **"Fossil Derived Gaseous Fuel"** means gaseous fuel including, but not limited to, natural gas, methane, ethane, propane, butane, and gases stored as liquids at high pressure such as liquefied petroleum gas, but excluding waste derived gaseous fuel.

(6) **"Lean-Burn Engine"** means an engine that is designed to operate with an air-to-fuel ratio that is more than 1.1 times the Stoichiometric air-to-fuel ratio.

(7) **"Military Tactical Support Equipment"** means the same as defined in Rule 2.

(8) **"Portable Emission Unit"** means the same as defined in Rule 20.1.

(9) **"Reasonably Available Control Technology (RACT)"** means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

(10) **"Rich-Burn Engine"** means an engine that is designed to operate with an air-to-fuel ratio less than or equal to 1.1 times the Stoichiometric air-to-fuel ratio.

(11) **"Stationary Internal Combustion Engine" or "Engine"** means a spark or compression ignited, reciprocating internal combustion engine which is not a portable emission unit.

(12) **"Stationary Source"** means the same as is defined in Rule 2.

(13) **"Stoichiometric Air-to-Fuel Ratio"** means the chemically balanced air-to-fuel ratio at which all fuel and all oxygen in the air and fuel mixture are theoretically consumed by combustion.

(14) **"Uncontrolled NOx Emissions"** means NOx emissions from an engine before application of add-on control equipment.

(15) **"Waste Derived Gaseous Fuel"** means gaseous fuel including, but not limited to, digester gas and landfill gas, but excluding fossil derived gaseous fuel.

(d) **STANDARDS**

(1) A person shall not operate a stationary internal combustion engine subject to this rule unless:

(i) Uncontrolled NOx emissions from the following engines are reduced with add-on control equipment by not less than the following:

<u>Engine Category</u>	<u>Weight Percent Reduction</u>
Rich-burn engines using fossil derived gaseous fuel or gasoline	90
Lean-burn engines using fossil derived gaseous fuel	80
Engines using exclusively waste derived gaseous fuel	80

or

(ii) The emission concentration of NO_x, in parts per million by volume (ppmv), calculated as nitrogen dioxide at 15% oxygen on a dry basis, or in grams of NO_x per brake horsepower-hour, are not greater than the following:

<u>Engine Category</u>	<u>Concentration of NO_x g/bhp-hr (ppmv)</u>
Rich-burn engines using fossil derived gaseous fuel or gasoline	0.9 (50)
Lean-burn engines using gaseous fuel	2.3 (125)
Engines using exclusively waste derived gaseous fuel	2.3 (125)
Engines using diesel or kerosene fuel	9.0 (700)

(2) For all engines subject to Subsection (d)(1) of this rule, the emission concentration of carbon monoxide (CO), calculated at 15% oxygen on a dry basis, shall not exceed 4,500 ppmv.

(3) An owner or operator of an engine subject to this rule shall conduct annual maintenance of the engine as recommended by the engine manufacturer or as specified by any other maintenance procedure approved in writing by the Air Pollution Control Officer.

(e) MONITORING AND RECORDKEEPING REQUIREMENTS

(1) An owner or operator of an engine subject to this rule shall keep the following records and shall maintain these records on-site for at least the same period of time as the engine to which the records apply is located at the site:

- (i) engine manufacturer name and model number;
- (ii) brake horsepower output rating;
- (iii) combustion method (i.e. rich-burn or lean-burn);
- (iv) fuel type;
- (v) a manual of recommended maintenance as provided by the engine manufacturer, or other maintenance procedure as approved in writing by the Air Pollution Control Officer; and
- (vi) records of annual engine maintenance, including dates maintenance was performed.

(2) In addition to the records required by Subsection (e)(1), an owner or operator of an engine exempt pursuant to Subsection (b)(2) from the requirements of Section (d) shall maintain an operating log containing, at a minimum, the following:

(i) dates and times of engine operation. If applicable, indicate whether the operation was for non-emergency purposes or during an emergency situation and the nature of the emergency, if available; and

(ii) total cumulative hours of operation per calendar year, based on actual readings of the engine hour or fuel meter.

The records specified in Subsection (e)(2)(i) are not required if total engine operations for any purpose, including emergency situations, do not exceed 52 hours in a calendar year.

(3) In addition to the records required by Subsection (e)(1), an owner or operator of a rich-burn engine subject to the requirements of Section (d) shall measure and record at least once each calendar month those operating parameters determined necessary to ensure compliance by the Air Pollution Control Officer. Such operating parameters shall include but are not limited to:

(i) temperature of the inlet and outlet of the control equipment; or

(ii) engine air-to-fuel ratio; or

(iii) engine inlet manifold temperature and pressure.

(4) In addition to the records required by Subsection (e)(1), an owner or operator of a lean-burn engine using gaseous fuel subject to the requirements of Section (d) shall also measure and record at least once each calendar month those operating parameters determined necessary to ensure compliance by the Air Pollution Control Officer. Such operating parameters shall include but are not limited to:

(i) engine air-to-fuel ratio or automatic air-to-fuel ratio control signal voltage; or

(ii) engine exhaust gas temperature; or

(iii) engine inlet manifold temperature and pressure.

(5) In addition to the records required by Subsection (e)(1), an owner or operator of an engine using diesel fuel subject to the requirements of Section (d) shall also measure and record at least once each calendar month those operating parameters determined necessary to ensure compliance by the Air Pollution Control Officer. Such operating parameters shall include but are not limited to:

(i) engine air-to-fuel ratio; or

(ii) engine exhaust gas temperature; or

(iii) engine inlet manifold temperature and pressure.

(6) Except for engines exempt under Subsection (b)(1), an owner or operator of an engine subject to this rule shall install a non-resettable totalizing fuel meter or non-resettable totalizing engine operating hours meter.

(7) An owner or operator of a gaseous-fueled engine rated at 1,000 bhp or greater and operated more than 2,000 hours per calendar year and first installed in San Diego County after July 30, 2003, shall continuously monitor operating parameters necessary to ensure compliance with the emission standards specified in Section (d) of this rule. Alternatively, an owner or operator of such engine may install, operate, and maintain in calibration a continuous emission monitoring system (CEMS) to continuously measure and record oxygen concentration and NO_x emissions concentration corrected to 15 percent oxygen. The CEMS shall be certified, calibrated, and maintained in accordance with all applicable federal regulations including reporting requirements of Sections 60.7(c), 60.7(d), and 60.13 of 40 CFR Part 60, performance specifications of Appendix B of 40 CFR Part 60, quality assurance procedures of Appendix F of 40 CFR Part 60, and a protocol approved in writing by the Air Pollution Control Officer.

(8) An owner or operator of a gaseous-fueled engine rated at 5,000 bhp or greater and operated more than 6,000 hours per calendar year and first installed in San Diego County after July 30, 2003, shall install, operate, and maintain in calibration a continuous emission monitoring system (CEMS) to continuously measure and record oxygen concentration and NO_x emissions concentration corrected to 15 percent oxygen, or an alternative system such as a Parametric Emission Monitoring System approved by the Air Pollution Control Officer and Environmental Protection Agency (EPA). The CEMS shall be certified, calibrated, and maintained in accordance with all applicable federal regulations including reporting requirements of Sections 60.7(c), 60.7(d), and 60.13 of 40 CFR Part 60, performance specifications of Appendix B of 40 CFR Part 60, quality assurance procedures of Appendix F of 40 CFR Part 60, and a protocol approved in writing by the Air Pollution Control Officer.

(9) All records required by Subsections (e)(2) through (e)(7) shall be retained on-site for at least three years and made available to the District upon request.

(f) TEST METHODS

To determine compliance with Section (d) during a source test, measurements of NO_x, CO, carbon dioxide (CO₂) and oxygen content of exhaust gas shall be conducted in accordance with San Diego County Air Pollution Control District Test Method 100, Air Resources Board (ARB) Test Method 100 or equivalent EPA test method and a source test protocol approved in writing by the Air Pollution Control Officer.

(g) SOURCE TEST REQUIREMENTS AND COMPLIANCE DETERMINATION

Source tests shall be conducted according to the following:

(1) After initial compliance has been determined, any engine subject to the requirements of Subsection (d), except for engines described in Subsection (g)(2) below, shall be tested at least once every 24 months, unless more frequent testing is specified in writing by the Air Pollution Control Officer.

(2) Any gaseous-fueled engine rated at 1,000 bhp or greater and operated more than 2,000 hours per calendar year shall be tested at least once every 12 months, unless more frequent testing is specified in writing by the Air Pollution Control Officer.

(3) Emissions source testing shall be conducted using the test methods specified in Section (f) and a source test protocol approved in writing by the Air Pollution Control Officer prior to testing.

(4) Emissions source testing shall be performed at no less than 80 percent of the brake horsepower rating. If an owner or operator of an engine demonstrates to the satisfaction of the Air Pollution Control Officer that the engine does not operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous brake horsepower rating, or under the typical duty cycle or operational mode of the engine.

(5) The averaging period to calculate NO_x and CO emission concentrations and to determine compliance shall be at least 30 minutes and not more than 60 minutes. NO_x and CO emission concentrations shall be calculated as an average of three subtests.

(6) For the purposes of a compliance determination based on CEMS data, the averaging period to calculate NO_x emissions concentration shall be one clock hour.