SAN DIEGO COUNTY
AIR POLLUTION CONTROL DISTRICT

DRAFT PROPOSED AMENDMENTS TO RULE 69.3.1 – STATIONARY GAS TURBINE ENGINES & RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

RESPONSE TO COMMENTS REPORT
December 15, 2025

The San Diego County Air Pollution Control District (District) held a virtual public workshop on October 22, 2025, to discuss and receive input on draft proposed amendments to Rule 69.3.1 (Stationary Gas Turbine Engines) and Rule 69.4.1 (Stationary Reciprocating Internal Combustion Engines). A workshop notice was mailed on September 22, 2025, to over 2,850 owners or operators of turbines or engines potentially subject to the draft proposed amendments to Rules 69.3.1 and 69.4.1, interested stakeholders, and Chambers of Commerce in San Diego County. An electronic workshop notice was also sent to over 12,800 interested parties subscribed to the District's electronic mail service, the California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (EPA). The District also notified members of the Portside Community Steering Committee (CSC) and International Border CSC on September 23, 2025, and October 15, 2025, respectively, of the virtual workshop. The workshop notice was also posted on the District's website and on social media. Comments were accepted through November 7, 2025.

A summary of the comments and District responses during the virtual workshop, and submitted written comments prior or after the virtual workshop, are provided below:

1. PUBLIC COMMENT

Do the proposed amendments to Rule 69.4.1 intend to minimize the number of startups and shutdowns for engines that might occur during a month/year?

DISTRICT RESPONSE

The proposed amendments to Rule 69.4.1 do not contain numerical limits on the number of startups and shutdowns per month or year. Startup and shutdown occurrences can vary significantly depending on the size, type, and operation of each engine. However, the amendments do propose to minimize the frequency and duration of startup and shutdown periods and their associated emissions to the greatest extent practicable. Additionally, existing permits may already contain specific numerical limitations of startups and shutdown occurrences for other required reasons.

2. PUBLIC COMMENT

Will the proposed startup and shutdown limits within Rule 69.4.1 apply to portable emergency engines?

DISTRICT RESPONSE

No. The proposed amendments, and Rule 69.4.1 overall, generally do not apply to portable emergency engines. Rule 69.4.1 generally applies only to stationary engines, as well as engines that operate with aftermarket emission control technology. However, maintenance requirements found within Rule 69.4.1 do apply to portable engines if they are currently registered with the District.

3. PUBLIC COMMENT

Do Rule 69.3.1 and/or Rule 69.4.1 apply to industrial diesel generators?

DISTRICT RESPONSE

Rule 69.4.1 applies to applicable stationary engines, which can include industrial stationary diesel generators. Rule 69.3.1 only applies to stationary gas turbines.

4. PUBLIC COMMENT

The District should consider aligning the periodic maintenance amendment proposed in Rule 69.4.1 to only require oil and filter changes to the specific subgroup of engines specified for the federal Reciprocating Internal Combustion Engines (RICE) National Emission Standards for Hazardous Air Pollutants (NESHAP). The proposed amendments require all stationary engines subject to Rule 69.4.1 to comply with the periodic maintenance requirements, whereas the RICE NESHAP only specifies that new or reconstructed engines (on or after June 12, 2006) and existing engines (before June 12, 2006) located at a residential, commercial, or institutional facilities require maintenance in accordance with manufacturer's instructions. Oil and filter changes are costly, and the additional maintenance required will have no significant emission reduction benefit, considering that most emergency engines operate only a few hours each year. Additional oil and filter changes on emergency engines will also generate more hazardous waste, which is costly to dispose of.

DISTRICT RESPONSE

The District appreciates the comment. The comment is correct in that the new periodic maintenance requirements found within the RICE NESHAP apply to a specific subgroup of engines. Specifically, Table 2d in 40 CFR Part 63, Subpart ZZZZ, requires oil and filter changes at defined intervals (e.g., every 500 hours of operation or within 1 year plus 30 days of the previous change) for emergency engines located at area sources, which includes commercial and intuitional facilities. Only certain non-emergency or small-scale engines have the flexibility to follow manufacturer instructions without fixed intervals.

Rule 69.4.1 includes the option to test oil in lieu of changing the oil and filter in accordance with the requirements of 40 CFR Part 63, Sections 63.6625(i) or 63.6625(j), if the oil is still suitable for use, which will avoid potential additional hazardous waste being generated and/or additional costs to facilities associated with numerous oil changes.

The District maintains the regulatory authority to be more stringent than State or federal law requirements. For example, all engines subject to existing Rule 69.4.1 today must already change oil and/or test on an annual basis. Consequently, staff determined that requiring the revised proposed oil and filter change provisions only to engines specified in the RICE NESHAP, would be a relation of existing requirements that would result in significant enforcement and permitting constraints. Having similar periodic maintenance provisions apply to all engines subject to Rule 69.4.1 will result in more consistent enforceability for District inspectors. As a co-benefit, it may also result in more expedient permitting revisions if the amendments are adopted, which in turn may result in lower annual renewal costs of permits associated with making such changes. These potential cost savings for facilities may (in part) mitigate potential additional costs associated with potentially more frequent oil and filter changes.

5. PUBLIC COMMENT

The District should consider specifying that portable engine units (i.e., engines subject to the Portable Diesel Engine Airborne Toxic Control Measure (ATCM) that move within the facility from location to location) be excluded from the specific maintenance requirements proposed in amended Rule 69.4.1. These units are non-road engines that are not subject to the RICE NESHAP federal regulation maintenance requirements. Neither the Portable Diesel Engine ATCM nor the Stationary Diesel Engine ATCM include periodic maintenance requirements for diesel engines.

DISTRICT RESPONSE

The District appreciates the comment. As mentioned in Response #4, the District maintains the regulatory authority to be more stringent than State or federal law requirements. While the respective State ATCMs do not contain periodic maintenance requirements associated with portable engines, the District has previously determined that such requirements are appropriate and reasonable to ensure engines are operating efficiently to avoid unnecessary emissions. Definitions for a “Portable Emission Unit” and a “Stationary Source” can be found in District Rules 12.1 and 20.1. The District defines portable engines that reside at the same facility for more than 12 consecutive months as a stationary source of air pollution.

6. PUBLIC COMMENT

The District should consider starting implementation of the new periodic maintenance requirements found in Rule 69.4.1 at a future date (e.g., 2026 or 2027) rather than upon adoption of the rule amendments. The starting point is critical for facilities that plan out maintenance years

in advance. The change will allow permit holders, especially ones with many permitted engines, to create a sensible schedule while avoiding a potential log jam of maintenance in 2025/2026.

DISTRICT RESPONSE

The District agrees. Proposed amended Rule 69.4.1, Subsection (f)(2), has been revised to specify the new periodic maintenance requirement (i.e., "1 year plus 30 days of the previous maintenance event") which will now begin on January 1, 2027, instead of upon rule adoption.

7. PUBLIC COMMENT

The periodic maintenance requirement in proposed amended Rule 69.4.1 that states "within 1 year plus 30 days" needs to be better defined with examples. One year plus 30 days is too vague for the end user and the District Compliance inspector. We recommend, as an alternative, allowing for the entire month for maintenance to be performed plus an additional 30 days as the window for periodic maintenance. In other words, if maintenance is performed on July 15, 2025, the next maintenance would be due anytime within the month of July 2026 plus 30 days.

DISTRICT RESPONSE

The District disagrees. The current language included within proposed amended Rule 69.4.1 for periodic maintenance is consistent and verbatim with the federal RICE NESHAP (40 CFR Part 63, Subpart ZZZZ), which specifies that periodic maintenance be conducted within "1 year + 30 days" as a fixed maximum interval. To illustrate this, if periodic maintenance is performed on January 15, 2027, the deadline to conduct the next periodic maintenance (and/or testing) would be February 15, 2028. To ensure the amended rule maintains alignment with federal requirements, the District must retain this language.

8. PUBLIC COMMENT

The public should be encouraged to report license plate numbers of vehicles that violate emission laws to an agency that will issue citations. Vehicles stopped in traffic that are spewing fumes, smoke, etc., are hazardous and affect public health. If citation(s) are ignored, these vehicles should be confiscated.

DISTRICT RESPONSE

The comment received is beyond the scope of the proposed amendments applicable to the consideration of proposed amended Rules 69.3.1 and 69.4.1. Nonetheless, the District does not have authority to regulate on-road vehicles. Resources are available online on the California Air Resources Board website (http://ww2.arb.ca.gov/environmental-complaints) that allow the public to report smoking passenger and commercial vehicles that appear to be out of compliance with emission regulations.

9. DISTRICT COMMENT

The District made additional administrative edits to proposed amended Rule 69.4.1, Subsection (f)(2), to remove two references of the word “annual” for additional clarity due to the proposed new periodic maintenance requirement (i.e., “1 year plus 30 days of the previous maintenance event”).

RULE 69.3.1. STATIONARY GAS TURBINE ENGINES

(Rev. Adopted and Effective ~~12/09/21~~ *date of adoption*)

(a) APPLICABILITY

Except as provided in Subsection (b)(1), this rule shall apply to any stationary gas turbine engine with a power rating of 0.3 megawatt (MW) or greater. Any unit subject to Section (d) Standards of this rule shall not be subject to Rule 68 – Fuel-Burning Equipment-Oxides of Nitrogen.

(b) EXEMPTIONS

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

(i) Any gas turbine engine when operated exclusively for the research, development or testing of gas turbine engines or their components.

(ii) Any portable gas turbine engine. It is the responsibility of any person claiming this exemption to maintain records indicating the dates that such gas turbine engine was located at each stationary source. These records shall be maintained for a minimum of two calendar years by the owner or operator of such gas turbine engine and made available to the District upon request.

(iii) Any stationary gas turbine engine with a power rating less than or equal to 0.4 MW used in conjunction with military tactical support equipment operated at military sites, provided that operations do not exceed 1,000 hours per calendar year. It is the responsibility of any person claiming this exemption to maintain records indicating the hours that such gas turbine engine was operated. These records shall be maintained for a minimum of two calendar years by the owner or operator of such gas turbine engine and made available to the District upon request.

(2) The provisions of Section (d) Standards shall not apply to any emergency unit provided that operation for testing or maintenance purposes to ensure operability in the event of an emergency situation does not exceed 80 hours per calendar year. It is the responsibility of any person claiming this exemption to maintain records in accordance with Subsections (e)(5) and (e)(8) of this rule.

~~(3) The provisions of Subsections (d)(1) and (d)(2) shall not apply to the following:~~

~~(i) Any unit during startup, shutdown or a fuel change for a period not to exceed 120 consecutive minutes except as provided for in Subsection (b)(4). Nothing in this rule shall be construed to limit the actual time needed to conduct a startup, shutdown or fuel change.~~

~~(ii) For turbines equipped with lean premix combustors, periods of operation at low load` provided that:~~

~~(A) The aggregate time of such periods does not exceed 130 minutes in any calendar day;~~

~~(B) The aggregate of all such periods does not exceed 780 minutes in any calendar year; and~~

~~(C) The turbine is equipped with a continuous emission monitoring system (CEMS) or other monitoring system that monitors and records turbine fuel flow and gross electrical output in increments of one minute or less.~~

~~(4) The provisions of Subsection (d)(1) shall not apply to any combined-cycle gas turbine engine during an extended startup for a period not to exceed 360 consecutive minutes.~~

(c) **DEFINITIONS**

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

(1) **"Combined-Cycle Gas Turbine Engine"** means any stationary gas turbine engine which recovers heat from the gas turbine exhaust gases to generate steam that is used to create additional power output in a steam turbine.

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

(i) An unforeseen electrical power failure of the serving utility or of onsite electrical transmission equipment;

(ii) An unforeseen flood or fire; or

(iii) An unforeseen event that requires the use of gas turbine engines to help alleviate the threat to public health and safety.

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

(3) **"Emergency Unit"** means a stationary gas turbine engine used exclusively in emergency situations, or for testing or maintenance purposes only. A peaking unit shall not be considered an emergency unit.

(4) **"Extended Startup"** means the startup of a combined-cycle gas turbine engine when any of the following key operational parameters indicate that more than 120 consecutive minutes are needed to meet the emission limits of Section (d) Standards:

(i) The steam turbine reheat bowl temperature is less than or equal to 750°F when the startup period begins; or

(ii) The steam turbine inner casing temperature is less than or equal to 500°F when the startup period begins; or

(iii) The unit has experienced zero fuel flow for a period of 24 hours or more.

(5) **"Fuel Change"** means the transitory operating period when a switch occurs between liquid or gaseous fuels, or any combination thereof.

(6) **"Gaseous Fuel"** means natural gas, digester gas, landfill gas, methane, ethane, propane, butane, or any gas stored as a liquid at high pressure such as liquefied petroleum gas.

(7) **"Higher Heating Value (HHV)"** means the total heat liberated, including the heat of condensation of water, per mass of fuel burned (Btu per pound) when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to standard conditions.

(8) **"Lean Mixture"** means a mixture of air and fuel such that the operating air-to-fuel ratio is more than 1.1 times the stoichiometric air-to-fuel ratio.

(9) **"Lean Premix Combustor"** means any turbine combustor design where the air and majority of the fuel are thoroughly mixed to form a lean mixture before combustion. Mixing may occur before or in the combustion chamber. A lean premix combustor may operate in a non-lean-premix mode (diffusion flame mode) during operating conditions including, but not limited to, startup and shutdown, or period of operation at low load.

(10) **"Liquid Fuel"** means any fuel which is a liquid at standard conditions including, but not limited to, distillate oils, kerosene and jet fuel. Liquefied gaseous fuels are not liquid fuels.

(11) **"Lower Heating Value (LHV)"** means the total heat liberated, excluding the heat of condensation of water, per mass of fuel burned (Btu per pound) when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to standard conditions.

(12) **“Manufacturer’s Rated Thermal Efficiency (MRTE)”** means the manufacturer’s continuous rated percent thermal efficiency of the gas turbine engine, including the effect of any air pollution control equipment if such equipment is installed, at peak load, after correction to lower heating value.

(13) **"Military Tactical Support Equipment"** means any equipment owned by the U.S. Department of Defense or the National Guard and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations.

(14) **"Peaking Unit"** means a stationary gas turbine engine that is only operated for generation of electric power during periods of high energy demand as directed by the California Independent System Operator (CAISO), or for testing or maintenance purposes only.

(15) **“Period of Operation at Low Load”** means a period of time that begins when the gas turbine power level is reduced from a higher level to a lower level such that the gas turbine is unable to comply with the standards of Section (d) Standards, and ends 10 minutes after the turbine power level next exceeds the level where the gas turbine is capable of complying with the standards of Section (d) Standards, provided that fuel is continuously combusted during the entire period. No period of operation at low load shall begin during a period ~~when the provisions of Section (d) do not apply pursuant to Subsection (b)(3)(i), or Subsection (b)(4)~~ of startup, extended startup, shutdown, or fuel change operations.

(16) **"Portable Gas Turbine Engine"** means a gas turbine engine which meets the definition of a portable emission unit in Rule 20.1 – New Source Review (NSR)-General Provisions.

(17) **"Power Augmentation"** means an increase in the gas turbine engine shaft output, or a decrease in turbine fuel consumption, by the addition of energy recovered from exhaust heat.

(18) **"Power Rating"** means the maximum, continuous, gross power output of a unit, in megawatts (MW) or equivalent at ISO standard day conditions, as certified by the manufacturer unless limited by a condition in a District Authority to Construct or a Permit to Operate. Power augmentation shall not be included in power rating.

(19) **“Selective Catalytic Reduction (SCR)”** means a post-combustion control technology that utilizes a reducing agent, such as ammonia, injected into the exhaust gas stream where it converts oxides of nitrogen (NOx) to molecular nitrogen in the presence of a catalyst.

(20) **"Shutdown"** means an action necessary to cease operation of a unit and includes the amount of time needed to safely do so. For gas turbines equipped with a CEMS or other continuous monitoring system that monitors and records fuel flow in increments of one minute or less, a shutdown period ends five minutes after fuel flow to the unit ceases.

(21) **"Stationary Gas Turbine Engine"** means any gas turbine engine system, with or without power augmentation, which is permanently attached to a foundation, or is not a portable gas turbine engine. Two or more gas turbines powering a common shaft shall be treated as one gas turbine.

(22) **"Stationary Source"** means the same as defined in Rule 2 – Definitions.

(23) **"Startup"** means an action necessary to begin operation of a unit and includes the amount of time needed for a unit and ancillary equipment to achieve stable operation. For gas turbines equipped with a CEMS or other continuous monitoring system that monitors and records fuel flow in increments of one minute or less, a startup period begins when fuel starts flowing to the gas turbine engine.

(24) **"Testing or Maintenance"** means operating an emergency unit, or a peaking unit as otherwise indicated, to:

(i) Evaluate the ability of the unit 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 emergency unit 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 unit that provided the electrical power. Operation for testing or maintenance purposes as described in this Subsection 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 from the emergency unit 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 from the emergency unit for the facility during the repair of supported equipment as defined in Subsection (c)(24)(i); or

(vii) Evaluate the ability of the peaking unit or its supported equipment, as defined in Subsection (c)(24)(i), to operate as directed by the CAISO.

(25) **"Unit"** means any stationary gas turbine engine.

(26) **"Unit Thermal Efficiency (E)"** means the percent thermal efficiency of the gas turbine engine and is calculated as follows:

$$E = \frac{(MRTE)\ (LHV)}{(HHV)}$$

A gas turbine engine with an efficiency lower than 25 percent shall be assigned a unit thermal efficiency of 25 percent.

(d) **STANDARDS**

(1) Except as provided for in Section (b) Exemptions and Subsections (d)(2), (d)(6), the emissions concentration in parts per million by volume (ppmv) of NOx from any unit subject to this rule, calculated as nitrogen dioxide at 15% oxygen on a dry basis, shall not exceed the following:

Power Rating (Gross Megawatts)	**NOx Emissions Concentration (ppmv @ 15% O_2)**	
	Gaseous Fuel	Liquid Fuel
≥0.3 and <2.9	42	65
<4.0 and operating less than 877 hours per calendar year	42	65
≥2.9 and <10.0	25 x E/25	65
≥10.0 without installed post-combustion air pollution control equipment	15 x E/25	42 x E/25
≥10.0 with installed post-combustion air pollution control equipment	9 x E/25	25 x E/25

(2) Except as provided for in Section (b) Exemptions and notwithstanding Subsection (d)(1), the emissions concentration in parts per million by volume (ppmv) of NOx from any ~~unit~~ combined-cycle gas turbine engine subject to this rule, calculated as nitrogen dioxide at 15% oxygen on a dry basis, shall not exceed the following during an extended startup as defined in Subsection (c)(4):

Unit Description	NOx Emissions Concentration (ppmv @ 15% O_2)	
	Gaseous Fuel	Liquid Fuel
Combined-cycle units, following the first 120 consecutive minutes of an extended startup	42	65

(3) The emission limits in Subsections (d)(1) and (d)(2) shall not apply to:

(i) Any unit during startup, shutdown, or fuel change provided that such a period does not exceed 120 consecutive minutes, except as provided for in Subsection (d)(4) during an extended startup.

(ii) Any unit equipped with a lean premix combustor, periods of operation at low load provided that:

(A) The aggregate time of such periods does not exceed 130 minutes in any calendar day;

(B) The aggregate of all such periods does not exceed 780 minutes in any calendar year; and

(C) The unit is equipped with a continuous emission monitoring system (CEMS) or other monitoring system that monitors and records turbine fuel flow and gross electrical output in increments of one minute or less.

(4) The emission limits in Subsections (d)(1) shall not apply to any combined-cycle gas turbine engine during an extended startup for a period not to exceed 360 consecutive minutes.

(5) During periods of startup and shutdown, an owner or operator of any gas turbine engine shall:

(i) Operate each unit in accordance with the manufacturer's recommended procedures.

(ii) Maintain proper air to fuel ratios.

(iii) If applicable, begin water injection, urea/ammonia injection, or engage lean-premix combustion mode as soon as possible during startup.

(6) The frequency and duration of startup and shutdown periods and their associated emissions from any unit subject to this rule shall be minimized to the greatest extent practicable.

(e) **MONITORING AND RECORD KEEPING REQUIREMENTS**

(1) An owner or operator of a unit which is subject to the requirements of Section (d) Standards shall install, calibrate and maintain continuous monitors in accordance with the manufacturer's recommended procedures to monitor and record the operational characteristics of the unit and of any NOx emissions reduction system, as applicable, to demonstrate continuous compliance, including, but not limited to:

(i) fuel flow rate;

(ii) exhaust gas temperature;

(iii) ammonia injection rate;

(iv) water injection rate;

(v) stack-gas oxygen content;

(vi) inlet or outlet SCR catalyst temperature; and

(vii) operational parameters defining an extended startup.

(2) An owner or operator of any unit with a power rating of 10 MW or more that operates more than 4,000 hours per calendar year shall install and operate a CEMS to measure and record NOx emissions. The CEMS shall be certified, calibrated and maintained in accordance with all applicable federal regulations including, but not limited to, the requirements of Sections 60.7(c), 60.7(d), and 60.13 of Title 40, Code of Federal Regulations, Part 60 (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, Sections 75.10 and 75.12 of 40 CFR Part 75, the specifications and test procedures of Appendix A of 40 CFR Part 75, the quality assurance and quality control procedures of Appendix B of

40 CFR Part 75, and a protocol approved in writing by the San Diego County Air Pollution Control Officer.

(3) An owner or operator of any unit with a CEMS which has been installed to monitor and record NOx emissions pursuant to any federal regulation shall certify, calibrate and maintain the CEMS in accordance with applicable federal regulations including the requirements of Sections 60.7(c), 60.7(d), and 60.13 of Title 40, Code of Federal Regulations Part 60 (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 San Diego County Air Pollution Control Officer.

(4) An owner or operator of any unit subject to this rule shall maintain, as applicable for the type of unit, records of dates and times of operation, times of all startups, shutdowns, periods of operation at low load, fuel changes and records of the type, ~~and~~ quantity of each fuel used during each calendar day and calendar year, and actions taken to comply with Subsections (d)(5) and (d)(6).

(5) An owner or operator of an emergency unit shall maintain records of dates and times of operation, including operating hours for testing or maintenance purposes and during each emergency situation. At a minimum, these records shall include the dates and times of all startups and shutdowns, total cumulative hours of operation for testing or maintenance purposes during each calendar year, and a description of each emergency situation.

(6) An owner or operator of a peaking unit shall maintain records of dates and times of operation, the hours of operation each calendar day, and the total cumulative hours of operation during each calendar year.

(7) An owner or operator of any unit operating less than 877 hours per calendar year and subject to Subsection (d)(1) shall maintain records of the total cumulative hours of operation during each calendar year.

(8) An owner or operator of any unit subject to this rule shall maintain all records required by this Section (e) Monitoring and Record Keeping Requirements and records of all source tests required by Subsection (g)(2) or Subsection(g)(3) for a minimum of two calendar years. These records shall be maintained on the premises and made available to the District upon request. Records for facilities that are unmanned may be kept at an alternative location approved in writing by the San Diego County Air Pollution Control Officer.

(9) An owner or operator of any emergency unit subject to Subsection (b)(2) shall install and maintain a non-resettable meter that measures elapsed operating time if deemed necessary by the San Diego County Air Pollution Control Officer.

(f) **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) To determine compliance with Section (d) Standards, measurement of NOx and stack-gas oxygen content shall be conducted in accordance with the U.S. Environmental Protection Agency (EPA) Method 7E (Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)), May 2018, and Method 3A (Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)), August 2017; or District Source Test Method 100 (Test Procedures for the Determination of Nitrogen Oxides, Carbon Monoxide and Diluent Gases by Continuous Emission Monitoring), May 1995, as approved by the EPA.

(2) The higher heating value and lower heating value of a fuel shall be determined by the following methods or their most current versions and can be provided by a fuel supplier:

(i) ASTM Test Method D240-19, "Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter", or D4809-18, "Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method)" for liquid fuels, or their most current versions, and

(ii) ASTM Test Method D1826-94(2017), Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter", or D1945-14(2019), "Standard Test Method for Analysis of Natural Gas by Gas Chromatography", in conjunction with ASTM Test Method D3588-98(2017)e1, "Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels" for gaseous fuels, or their most current versions.

(g) **SOURCE TEST REQUIREMENTS AND COMPLIANCE DETERMINATION**

(1) Any required source testing shall be performed at no less than 80% of the power rating. If an owner or operator of a gas turbine engine demonstrates to the satisfaction of the San Diego County Air Pollution Control Officer that the turbine cannot operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous power rating.

(2) Except as specified in Subsection (g)(3), a unit subject to the requirements of Section (d) Standards shall be tested for compliance at least once annually in the twelve-calendar-month period ending on the last day of the Permit to Operate expiration month, unless more frequent testing is specified in writing by the San Diego County Air Pollution Control Officer.

(3) Unless more frequent testing is specified in writing by the San Diego County Air Pollution Control Officer, a unit equipped with a continuous emission monitoring system (CEMS), subject to the requirements of Section (d) Standards, and subject to the provisions of the federal Acid Rain Program pursuant to Section 72.6 of 40 CFR Part 72, shall be tested for compliance at a frequency in accordance with 40 CFR Part 75 Appendix B Section 2.3.1 and Section 2.3.3.

(4) All testing shall be conducted in accordance with the requirements of Section (f) Test Methods and a source test protocol approved in writing by the San Diego County Air Pollution Control Officer.

(5) Test reports shall include the operational characteristics, as described in Subsection (e)(1), of the unit and of all add-on NOx control systems.

(6) For the purposes of a compliance determination based on source testing, the NOx emissions concentration shall be calculated as an average of three subtests.

(7) For the purposes of a compliance determination based on CEMS data, the averaging period to calculate NOx emissions concentration shall be one clock hour. For the purposes of compliance determination, the clock hour average NOx emissions concentration shall not include the data during periods of startup, shutdown, fuel change, and operation at low load.

(8) Notwithstanding provisions of this Section (g) Source Test Requirements and Compliance Determination, the San Diego County Air Pollution Control Officer may require source testing to determine compliance with these Rules and Regulations or to determine emissions at any time.

(h) COMPLIANCE SCHEDULE

An owner or operator of a new or replacement unit shall comply with all applicable provisions of this rule upon initial installation and commencement of operation.

RULE 69.4.1. STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (Rev. Adopted & Effective ~~July 8, 2020~~ *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 or exempt from this rule by Subsection (b)(1) shall not be subject to Rule 68 – Fuel-Burning Equipment-Oxides of Nitrogen.

(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 Subsection (d)(1) shall not apply to ~~the following~~ 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:

~~(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.~~

(i) 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;

(ii) 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

(iii) 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.

To claim the applicability of this exemption, records shall be maintained in accordance with Subsections ~~(g)(5) or~~ (g)(6)~~, as applicable~~. Nothing in this 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.

(4) The provisions of Subsections (e)(1), (e)(2), (e)(5), (f)(1), (g)(3), (g)(4), and (i)(1) 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 testing or maintenance purposes does not exceed 52 hours per calendar year. Operation 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, provided that operation of the engine is 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).

(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).

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

(7) The provisions of Section (i) – Source Test Requirements shall not apply to any engine certified by 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.

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

(5) **"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 or in other documentation establishing the maximum continuous brake horsepower as approved by the Air Pollution Control Officer.

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

(7) **"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.

(8) **"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.

(10) **"Certified Engine"** means:

(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.

(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.

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

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

(18) **"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.

(19) **"Existing Engine"** means an engine for which a complete application was submitted to the District on or before July 8, 2020.

(20) **"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.

(22) **"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.

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

(24) **"New Engine"** means an engine for which a complete application was submitted to the District after July 8, 2020.

(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.

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

(28) **"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.

(29) **"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.

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

(34) **"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).

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

(38) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2 – Definitions.

(39) **"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) Except as provided in Subsection (d)(3), ~~A~~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 Reduction
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 or syngas	90
Engines using diesel or kerosene fuel	90
Dual-fueled engines	90
Rich-burn engines used exclusively in agricultural operations	80
Lean-burn engines used exclusively in agricultural operations	70

or

(ii) The emissions shall not exceed the following:

(A) Existing Non-Emergency Engines

Engine Type	Concentration of NOx[1]	Concentration of VOC[2]	Concentration of CO[3]
Rich-burn engines using fossil derived gaseous fuel or gasoline	25 ppmv	250 ppmv	2,000 ppmv
Rich-burn engines using exclusively waste derived gaseous fuel	50 ppmv	250 ppmv	2,000 ppmv
Lean-burn engines using gaseous fuel	65 ppmv	750 ppmv	2,000 ppmv
Engines using diesel fuel	6.9 g/bhp-hr	N/A	4,500 ppmv

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

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

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

(B) Existing Emergency Standby Engines

Engine Type	Concentration of NOx[1]	Concentration of VOC[2]	Concentration of CO[3]
Rich-burn engines using gaseous fuel	25 ppmv	250 ppmv	4,500 ppmv
Lean-burn engines using gaseous fuel	2.0 g/bhp-hr	N/A	4,500 ppmv
Engines using diesel fuel	6.9 g/bhp-hr	N/A	4,500 ppmv

[1]Calculated as nitrogen dioxide in parts per million by volume (ppmv) corrected to 15% oxygen on a dry basis, or in grams of NOx per brake horsepower-hour, as indicated.
[2]Calculated as methane in ppmv corrected to 15% oxygen on a dry basis.
[3]Calculated as carbon monoxide in ppmv corrected to 15% oxygen on a dry basis.

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

Engine Type	Concentration of NOx[1] (ppmv)	Concentration of VOC[2] (ppmv)	Concentration of CO[3] (ppmv)	Concentration of formaldehyde[4] (ppmv)
Rich-burn engines using fossil derived gaseous fuel or gasoline	11	60	270	70
Rich-burn engines using waste derived gaseous fuel or syngas	50	80	610	70
Lean-burn engines using fossil derived gaseous fuel	65	60	270	70
Lean-burn engines using waste derived gaseous fuel or syngas	65	80	610	70
Rich-burn engines used exclusively in agricultural operations	90	250	2000	N/A
Lean-burn engines used exclusively in agricultural operations	150	750	2000	N/A

[1]Calculated as nitrogen dioxide in ppmv corrected to 15% oxygen on a dry basis.
[2]Calculated as methane in ppmv corrected to 15% oxygen on a dry basis, and excluding emissions of formaldehyde.
[3]Calculated as carbon monoxide in ppmv corrected to 15% oxygen on a dry basis.
[4]Calculated as formaldehyde in ppmv corrected to 15% oxygen on a dry basis.

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

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

(E) New or Replacement Emergency Standby Engines

Engine Type	Concentration of NOx[1]	Concentration of VOC[2]	Concentration of CO[3]
Rich-burn engines using gaseous fuel	25 ppmv	86 ppmv	540 ppmv
Lean-burn engines using gaseous fuel	2.0 g/bhp-hr or 160 ppmv	1.0 g/bhp-hr or 86 ppmv	4.0 g/bhp-hr or 540 ppmv
Black start engines using gaseous fuel	2.0 g/bhp-hr or 160 ppmv	1.0 g/bhp-hr or 86 ppmv	4.0 g/bhp-hr or 540 ppmv
Certified engines using diesel fuel, 50 ≤ bhp < 100	3.5 g/bhp-hr	N/A	3.7 g/bhp-hr
Certified engines using diesel fuel, 100 ≤ bhp < 175	3.0 g/bhp-hr	N/A	3.7 g/bhp-hr
Certified engines using diesel fuel, 175 ≤ bhp < 750	3.0 g/bhp-hr	N/A	2.6 g/bhp-hr
Certified engines using diesel fuel, bhp ≥ 750	4.8 g/bhp-hr	N/A	2.6 g/bhp-hr

[1]Calculated as nitrogen dioxide in ppmv corrected to 15% oxygen on a dry basis, or in grams of NOx per brake horsepower-hour, as indicated.
[2]Calculated 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.
[3]Calculated 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) Any engine subject to this rule and operating on diesel fuel shall use only California Diesel Fuel.

(3) An owner or operator of any non-emergency engine shall not be subject to the emission standards specified in Subsection (d)(1) during startup and shutdown for the following duration limits:

(i) 60 continuous minutes each for engines with a selective catalytic reduction (SCR) system installed, or

(ii) 30 continuous minutes each for engines without SCR installed.

(4) During periods of startup and shutdown, an owner or operator of any engine shall:

(i) Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, and/or

(ii) Operate in accordance with the engine manufacturer's recommended procedures.

(5) The frequency and duration of startup and shutdown periods and their associated emissions shall be minimized to the greatest extent practicable.

(e) **MONITORING REQUIREMENTS**

(1) An owner or operator of an engine without add-on control equipment, except engines specified in Subsections (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 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; 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;

(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)(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, 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. Notwithstanding the frequencies recommended by the engine and control equipment manufacturers, beginning January 1, 2027, the ~~annual~~ maintenance shall be conducted ~~at least once each calendar year~~ within 1 year plus 30 days of the previous maintenance event. 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, 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)(3) or (b)(4) shall maintain, 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 testing or maintenance or during an emergency situation and the nature of the emergency, and maintain the following:

(A) for a total external power outage, documentation from the serving utility of an outage in the area where the engine is located;

(B) for an internal power outage, a description of what caused the failure, and receipts and/or work orders for the necessary repairs, 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; and

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

(3) An owner or operator of an engine subject to this rule, except engines specified in Subsections (b)(3) or (b)(4), shall maintain, 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)(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 any non-emergency engine ~~claiming an exemption pursuant to~~ subject to the requirements of Subsection ~~(b)(2)(i)~~(d)(3) 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).

(9) All records required by Subsections (g)(2) through (g)(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 standards of Subsection (d)(1), except as provided in Subsection (h)(3) below, shall be conducted in accordance with the following procedures:

(i) Measurement of NOx, CO 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.

(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; 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 Derivitization Method), August 2017.

(iii) Emission concentrations of NOx, VOC, and CO shall be calculated as an average of three subtests. The averaging period to calculate NOx and CO emission concentrations and to determine compliance shall be at least 30 minutes and not more than 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.

(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 standards of Subsection (d)(1), such engine shall be deemed in compliance with the emission standards of Subsection (d)(1), provided the requirements of Subsection (b)(5) are met.

(4) A portable emission analyzer used to provide emission data pursuant to Subsection (e)(5) shall be calibrated, maintained and operated in accordance with 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

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)(1), except engines specified in Subsections (b)(3), (b)(4), (b)(7), or (i)(2), shall be source tested at least once every 2 permit years, unless more frequent testing is otherwise specified in writing by the Air Pollution Control Officer.

(2) 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.

(4) 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.

(5) Emissions source testing shall be performed at no less than 80% 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 horsepower, 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).

(6) 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) The owner or operator of an existing engine subject to the requirements of Subsection (e)(5) shall by July 8, 2022, submit to the Air Pollution Control Officer documentation which demonstrates that the engine is in compliance with Subsections (e)(5) and (g)(8).

(2) 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.