



Air Pollution Control Board

San Diego County Air Pollution Control District

GOVERNING BODY

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First District

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Third District

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Fourth District

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Fifth District

AGENDA ITEM

DATE: July 8, 2020

AP03

TO: Air Pollution Control Board

SUBJECT

NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES – REASONABLY AVAILABLE CONTROL TECHNOLOGY (DISTRICTS: ALL)

OVERVIEW

This is a request for the Air Pollution Control Board (Board) to adopt proposed amendments to Rule 69.4.1 (Stationary Reciprocating Internal Combustion Engines) of the Air Pollution Control District (District). Rule 69.4.1 regulates air pollutant emissions from stationary engines, which are commonly used by facilities (such as office buildings, manufacturing plants, hospitals, and other facilities that use electricity) as primary or backup engines to power their operations. These emissions contribute to the formation of ozone in the air we breathe. When inhaled, ozone adversely impacts people's health. Symptoms can include chest pain, shortness of breath, worsening of bronchitis and asthma, and nausea.

Rule 69.4.1 was adopted on November 15, 2000 (AP4). Since then, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have adopted more stringent emission limitations for new stationary engines than are required by Rule 69.4.1, which is now out of date. With this, despite the outdated rule, the District has already implemented the more stringent State and federal emission limitations via the Permits to Operate that it issues for the affected engines, as is required by federal and State law.

If approved by the Board, the proposed amendments to Rule 69.4.1 will have two benefits. First, updating the rule will provide greater clarity for the entities subject to these already implemented federal and State requirements because the updated rule will accurately reflect them. Second, the District is required to have air quality attainment plans that demonstrate our progress toward meeting the federal National Ambient Air Quality Standards for ozone in a timely manner. Because the attainment plans are developed using air quality models that depend on how much air pollution is emitted into the air, it is important to account for all air pollutant emission reductions that occur as a result of the District's activities and because of the rules adopted by the Board. In this case, the District cannot currently use the emission reductions realized via its permitting actions and updating Rule 69.4.1 with the more stringent emissions requirements will enable the District to account for those

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES – REASONABLY AVAILABLE CONTROL TECHNOLOGY (DISTRICTS: ALL)

emission reductions in the region's air quality attainment plans. Being able to include these currently unused emission reductions in the air quality attainment modeling will improve the modeling and the prognosis for attaining National Ambient Air Quality Standards for ozone.

The Board is also requested to repeal Rule 69.4 (Stationary Reciprocating Internal Combustion Engines – Reasonably Available Control Technology), which was last amended on July 30, 2003 (AP1). Rule 69.4 contains federal-only emissions standards that are now outdated. Proposed amended Rule 69.4.1, if adopted, incorporates the most current federal and State standards and improves upon and replaces Rule 69.4, which is no longer needed.

This proposal was developed with input from the EPA and CARB, and District staff conducted substantial outreach to affected facilities including conducting a public workshop. Workshop participants requested clarifications and were not opposed to the proposed rule amendments.

The proposed amendments to Rule 69.4.1 will take effect upon adoption. The amended rule will be submitted through CARB to the EPA for approval and to replace Rule 69.4 in the State Implementation Plan for attaining and maintaining the air quality standards.

RECOMMENDATION(S)

AIR POLLUTION CONTROL OFFICER

1. Find that the adoption of proposed amended Rule 69.4.1 - Stationary Reciprocating Internal Combustion Engines and repeal of existing Rule 69.4 - Stationary Reciprocating Internal Combustion Engines – Reasonably Available Control Technology are categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment, and pursuant to California Code of Regulations, Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.
2. Adopt the Resolution entitled: RESOLUTION ADOPTING AMENDMENTS TO RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, AND REPEALING RULE 69.4 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES-REASONABLY AVAILABLE CONTROL TECHNOLOGY, OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT.

FISCAL IMPACT

There is no fiscal impact associated with the recommended actions. There will be no change in net General Fund cost and no additional staff years.

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES – REASONABLY AVAILABLE CONTROL TECHNOLOGY (DISTRICTS: ALL)

BUSINESS IMPACT STATEMENT

Adopting the proposed amendments to Rule 69.4.1 and repealing Rule 69.4 will not adversely impact the business community. The proposed rule amendments do not impose requirements beyond federal and State regulations that are already in effect, therefore the proposal will result in no additional costs to businesses.

The proposed emissions standards apply to new stationary engines only and do not require early replacement or modification of existing engines. The proposal increases regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements.

ADVISORY BOARD STATEMENT

The Air Pollution Control District Advisory Committee (Advisory Committed) considered the proposal to amend Rule 69.4.1 and repeal Rule 69.4 during its meeting on December 11, 2019. The Advisory Committee is comprised of a total of nine seats. Four of those seats are currently vacant. Of the five Advisory Committee members currently appointed, two attended the meeting and they both expressed support for the proposed amendments. Meeting materials, including the proposed amendments to Rule 69.4.1, were shared with all appointed Advisory Committee members in advance of the meeting. No concerns with the proposal were raised to the Air Pollution Control District by Advisory Committee members.

BACKGROUND

The San Diego region does not meet the California and National Ambient Air Quality Standards for ozone, and therefore is classified as an ozone nonattainment area. Both federal and State laws require the San Diego County Air Pollution Control District (District) to adopt and implement rules to further control and reduce ozone-forming emissions including volatile organic compounds and oxides of nitrogen (NO_x), which is the key pollutant that currently drives ozone pollution levels in the San Diego region.

Rule 69.4, which was last amended on July 30, 2003 (AP1), was subsequently approved by the U.S. Environmental Protection Agency (EPA) as part of the San Diego County portion of the State Implementation Plan for attaining and maintaining the air quality standards. The rule contains federal-only standards that reduce NO_x emissions from stationary engines with a brake horsepower (bhp) rating of 50 or more that are located at major stationary sources (facilities emitting 50 or more tons per year of NO_x) such as large power plants, manufacturing facilities, and landfills.

Rule 69.4.1, which was adopted on November 15, 2000 (AP4), also applies to stationary engines with a bhp rating of 50 or greater. However, this rule contains more health-protective State requirements for lower air pollutant emissions from stationary engines located at both major and non-major sources.

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO
RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 -
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES
– REASONABLY AVAILABLE CONTROL TECHNOLOGY
(DISTRICTS: ALL)

Following the adoption of these District rules, two federal regulations (applicable to new stationary engines throughout the nation) were enacted in 2006 and 2008, and then amended by the EPA eight times between 2011 and 2016. Similarly, a State regulation (applicable to new stationary engines throughout California) was enacted in 2003 and then amended by CARB three times between 2006 and 2011. These federal and State requirements are currently in effect and further limit the allowable air pollutant emissions from new stationary engines in the region; local sources must comply regardless of whether these requirements are incorporated in Rule 69.4.1, and thus the emission reductions are already occurring. Nevertheless, incorporating the requirements in Rule 69.4.1 will enable the District to take credit for these emission reductions in the region's air quality attainment plans, which it cannot do until Rule 69.4.1 incorporates the more stringent emission limitations. Additionally, the proposed amended rule will increase regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements. Furthermore, the new lower-emitting units are more fuel-efficient and by consuming less fuel they emit less greenhouse gases (such as carbon dioxide) and therefore help support the region's climate goals.

An estimated 3,300 existing stationary engines are currently in place at facilities throughout the region. When these engines are replaced at the end of their useful lives, the new replacement engines will be subject to the more stringent emission limits. The proposed amended Rule 69.4.1 will reduce NO_x emissions from affected equipment by approximately 55% (292 tons per year) once all existing units are ultimately replaced with new, lower-emitting units. This reduction in ozone-forming emissions will have the same air quality benefit in the region as permanently removing 285,000 cars from our roads.

The proposed amendments to Rule 69.4.1 will take effect upon adoption. The rule will be submitted through CARB to the EPA for approval and to replace Rule 69.4 in the State Implementation Plan for attaining and maintaining the air quality standards. Existing Rule 69.4 will be automatically repealed at that time, as it is outdated and no longer needed.

Customer/Stakeholder Notification

District staff conducted a public workshop to gather input on the proposed amended rule from affected parties. A workshop notice was posted on the District's website and sent to approximately 5,000 recipients including each air quality permit holder and chamber of commerce in the region, members of the Air Pollution Control District Advisory Committee, subscribers to the County's email notification service, the EPA and the California Air Resources Board.

The workshop was attended by 23 people, including industry representatives. District staff prepared responses to all comments and questions received, which were provided to the workshop participants in a workshop report (Attachment D). If the rule amendments are adopted, staff will conduct additional outreach including the distribution of an advisory notice to further inform potentially affected parties.

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO
RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 -
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES
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SOCIOECONOMIC IMPACT ASSESSMENT

State law requires the District to perform an assessment of the socioeconomic impacts when adopting, amending, or repealing a rule that will significantly affect air quality or emission limitations. A Socioeconomic Impact Assessment was prepared for proposed amended Rule 69.4.1 (Attachment E). The proposed rule amendments do not impose requirements beyond federal and State regulations that are already in effect, therefore the proposal will result in no additional costs to businesses. Adoption of proposed amended Rule 69.4.1 is not expected to pose significant impacts on the affected industry sectors in San Diego county.

ENVIRONMENTAL STATEMENT

The California Environmental Quality Act (CEQA) requires an environmental review for certain actions. The District has conducted a review of whether CEQA applies to the adoption of the proposed amendments to Rule 69.4.1 and the repeal of existing Rule 69.4. The proposed rule amendments incorporate new federal and State standards that are already in effect, and that are designed to protect air quality and public health. Therefore, District staff determined that the adoption of the proposed amendments to Rule 69.4.1 and the repeal of Rule 69.4 are exempt from the provisions of CEQA pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, and pursuant to Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant adverse effect on the environment.

LINKAGE TO THE COUNTY OF SAN DIEGO STRATEGIC PLAN

Today’s proposed actions support the Sustainable Environments/Thriving Initiative in the County of San Diego’s 2020-2025 Strategic Plan with an objective to enhance the quality of the environment by focusing on sustainability, pollution prevention and strategic planning. The proposed amendments to Rule 69.4.1 will reduce air pollutant emissions and improve air quality in San Diego County.

Respectfully submitted,



SARAH E. AGHASSI
Deputy Chief Administrative Officer



ROBERT REIDER
Interim Director/Air Pollution Control Officer

ATTACHMENT(S)

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RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 -
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES
– REASONABLY AVAILABLE CONTROL TECHNOLOGY
(DISTRICTS: ALL)

Note: Due to the size of the attachments, the documents are available online through the Clerk of the Board's website at www.sandiegocounty.gov/content/sdc/cob/bosa.html.

Attachment A – Resolution Adopting Amendments to Rule 69.4.1 – Stationary Reciprocating Internal Combustion Engines, and Repealing Rule 69.4 – Stationary Reciprocating Internal Combustion Engines-Reasonably Available Control Technology, of Regulation IV of the Rules and Regulations of the San Diego County Air Pollution Control District

Attachment B – Comparative Analysis

Attachment C – Incremental Cost Effectiveness Analysis

Attachment D – Workshop Report

Attachment E – Socioeconomic Impact Assessment

Attachment F – Rule 69.4.1 – Stationary Reciprocating Internal Combustion Engines Change Copy

Attachment G – Existing Rule 69.4 – Stationary Reciprocating Internal Combustion Engines-Reasonably Available Control Technology to be Repealed

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO
RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL
COMBUSTION ENGINES, AND REPEAL OF EXISTING RULE 69.4 -
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AGENDA ITEM INFORMATION SHEET

REQUIRES FOUR VOTES: Yes No

WRITTEN DISCLOSURE PER COUNTY CHARTER SECTION 1000.1 REQUIRED

 Yes No

PREVIOUS RELEVANT BOARD ACTIONS:

July 30, 2003 (AP1), Adoption of Amended Rule 69.4 - Stationary Reciprocating Internal Combustion Engines - Reasonably Available Control Technology; November 15, 2000 (AP4), Adoption of new Rule 69.4.1 - Stationary Reciprocating Internal Combustion Engines – Best Available Retrofit Control Technology

BOARD POLICIES APPLICABLE:

N/A

BOARD POLICY STATEMENTS:

N/A

MANDATORY COMPLIANCE:

N/A

**ORACLE AWARD NUMBER(S) AND CONTRACT AND/OR REQUISITION
NUMBER(S):**

N/A

ORIGINATING DEPARTMENT: Air Pollution Control District

OTHER CONCURRENCE(S): None

CONTACT PERSON(S):

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RESOLUTION ADOPTING AMENDMENTS TO RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES, AND REPEALING RULE 69.4 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES-REASONABLY AVAILABLE CONTROL TECHNOLOGY, OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

On motion of Member Jacob, seconded by Member Gaspar, the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board (Board), pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been held relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code and Section 51.102 of Title 40 of the Code of Federal Regulations; and

WHEREAS, pursuant to Section 40727 of the Health and Safety Code, the San Diego County Air Pollution Control Board makes the following findings:

- (1) (Necessity) The adoption of proposed amended Rule 69.4.1 is necessary in order to implement state requirements for all feasible control measures to achieve the ambient air quality standards for ozone in San Diego County, and the repeal of Rule 69.4 is necessary in order to maintain clarity of requirements for those affected;
- (2) (Authority) The adoption of proposed amended Rule 69.4.1 and repeal of Rule 69.4 are authorized by Health and Safety Code Section 40702;
- (3) (Clarity) Proposed amended Rule 69.4.1 and the repeal of Rule 69.4 can be easily understood by persons directly affected by them;
- (4) (Consistency) The adoption of proposed amended Rule 69.4.1 and repeal of Rule 69.4 are in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and state and federal regulations;
- (5) (Non-duplication) The adoption of proposed amended Rule 69.4.1 and repeal of Rule 69.4 will not duplicate existing District, state, or federal requirements;

- (6) (Reference) The adoption of proposed new Rule 69.4.1 and repeal of Rule 69.4 are necessary to comply with: federal law, Clean Air Action Section 182(b)(2), which requires implementation of Reasonably Available Control Technology on stationary sources of oxides of nitrogen emissions; and state law, California Health and Safety Code Section 40914(b)(2), which requires adoption of every feasible control measure to reduce ozone-precursor emissions;

WHEREAS, the Board further finds pursuant to Health and Safety Code Section 40001 that adoption of proposed amended Rule 69.4.1 will facilitate the attainment of ambient air quality standards; and

WHEREAS, the Board further finds that Rule 69.4 is now duplicative of proposed amended Rule 69.4.1, and will be rendered obsolete upon the adoption of proposed amended Rule 69.4.1, at which time existing facilities are required to comply with the new requirements; and

WHEREAS, the Board further finds that an analysis comparing proposed amended Rule 69.4.1 with applicable requirements of federal and local regulations has been prepared pursuant to Health and Safety Code Section 40727.2; and

WHEREAS, the Board further finds that an incremental cost-effectiveness analysis pursuant to Health and Safety Code Section 40920.6(a) has been prepared for proposed amended Rule 69.4.1 and has been made available for public review and comment, and has been actively considered; and

WHEREAS, the Board further finds pursuant to Health and Safety Code section 40728.5(e) that proposed amended Rule 69.4.1 only adopts requirements that are substantially similar to, or required by, state or federal statutes, regulations, or formal guidance documents, and as such, the socioeconomic analysis required pursuant to Health and Safety Code section 40728.5 is not required to analyze either the impact of the adoption of proposed amended Rule 69.4.1 on employment and the economy of the region, or the availability and cost-effectiveness of alternatives to proposed amended Rule 69.4.1, and that as a result a socioeconomic analysis of the remaining factors specified in Health and Safety Code section 40728.5(b) has been prepared.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be, and hereby are amended as follows:

1. Proposed amended Rule 69.4.1 is to read as follows:

RULE 69.4.1. STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (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 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:

(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.

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 *(date of adoption)*.

(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 *(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.

(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) 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 |

(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 |

¹Calculated 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.

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

| 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 |
|---|-----|-----|------|-----|

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

| Engine Type | Concentration of NO _x (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 NO _x 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 \geq 750 | 4.8 g/bhp-hr | N/A | 2.6 g/bhp-hr |
|---|--------------|-----|--------------|

¹Calculated as nitrogen dioxide in ppmv corrected to 15% oxygen on a dry basis, or in grams of NOx 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) 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)(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 NO_x 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 NO_x 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, 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, 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 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).

(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 Subsections (d)(1), except as provided in Subsection (h)(3) below, shall be conducted in accordance with the following procedures:

(i) Measurement of NO_x, 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 NO_x, VOC, and CO 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 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 Subsections (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 *(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).

(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.

2. Existing Rule 69.4 is to be repealed in its entirety.

IT IS FURTHER RESOLVED AND ORDERED that proposed amended Rule 69.4.1 of Regulation IV shall take effect *(date of adoption)*.

IT IS FURTHER RESOLVED AND ORDERED that the repeal of Rule 69.4 of Regulation IV shall take effect *(date of adoption)*.

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY: Paula Forbis, Senior Deputy

The foregoing Resolution was passed and adopted by the Air Pollution Control District, County of San Diego, State of California, on this 8th day of July, 2020, by the following vote:

AYES: Cox, Jacob, Gaspar, Fletcher, Desmond

- - -

STATE OF CALIFORNIA)
County of San Diego)^{SS}

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution entered in the Minutes of the San Diego County Air Pollution Control Board.

ANDREW POTTER
Clerk of the Air Pollution Control Board

By: 
Joana Santiago, Deputy



Resolution No. 20-120
Meeting Date: 07/08/2020 (AP3)

COMPARATIVE ANALYSIS

**PROPOSED AMENDED RULE 69.4.1 – STATIONARY RECIPROCATING
INTERNAL COMBUSTION ENGINES**

Statutory Requirements

Prior to adopting, amending, or repealing a rule or regulation, California Health and Safety Code Section 40727 requires findings of necessity, authority, clarity, consistency, non-duplication, and reference, as defined therein. As part of the consistency finding and to ensure proposed rule requirements do not conflict with or contradict other Air Pollution Control District (District) or federal regulations, Health and Safety Code Section 40727.2(a) requires the District to perform a written analysis identifying and comparing the air pollution control standards and other provisions of proposed amended Rule 69.4.1 with existing or proposed District rules and guidelines and existing federal rules, requirements, and guidelines applying to the same source category.

Comparison with existing District rules and regulations

Rule 69.4, which was last amended on July 30, 2003, was subsequently approved by the U.S. Environmental Protection Agency (EPA) as part of the San Diego County portion of the State Implementation Plan (SIP) for attaining and maintaining the air quality standards. The rule contains federal-only standards (Reasonably Available Control Technology – RACT) that reduce oxides of nitrogen (NOx) emissions from stationary engines with a brake horsepower (bhp) rating of 50 or more that are located at major stationary sources (facilities emitting 50 or more tons per year of NOx).

Rule 69.4.1, which was adopted on November 15, 2000, also applies to stationary engines with a bhp rating of 50 or greater. However, this rule contains more health-protective State requirements (Best Available Retrofit Control Technology – BARCT) for lower air pollutant emissions from stationary engines located at both major and non-major sources.

Proposed amended Rule 69.4.1 contains standards either equivalent to or more stringent than those in Rule 69.4. If adopted by the Board, proposed amended Rule 69.4.1 will be submitted to the EPA for approval into the SIP for attaining and maintaining the air quality standards. Existing Rule 69.4 will be automatically repealed at that time, as it is outdated and no longer needed.

In addition, Best Available Control Technology (BACT) is a requirement of the New Source Review regulations, developed according to federal guidelines. BACT emission standards are established for more general engine categories than proposed amended Rule 69.4.1 standards, though the emissions limits are nearly equivalent. Requirements for monitoring, recordkeeping and source testing in proposed amended Rule 69.4.1 are more stringent and specific than the BACT requirements.

Comparison with federal NSPS Subparts IIII and JJJJ

There are two federal regulations that apply to the control of NO_x emissions from stationary internal combustion engines: New Source Performance Standards (NSPS) Subpart IIII – Compression Ignition Internal Combustion Engines, and Subpart JJJJ – Spark Ignition Internal Combustion Engines. Proposed amended Rule 69.4.1 contains standards either equivalent to or more stringent than those in the two Subparts.

Conclusion

There are no conflicts or contradictions between proposed amended Rule 69.4.1 and BACT requirements, NSPS Subpart IIII, and NSPS Subpart JJJJ for stationary internal combustion engines.

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

PROPOSED AMENDED RULE 69.4.1 – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

Health and Safety Code Section 40920.6(a) requires air pollution control districts to identify one or more potential control options that achieve at least the same benefit as the proposed rule, assess the cost-effectiveness of those options and calculate the incremental cost-effectiveness of each identified option. Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential options achieving the same emission reduction goal.

The only potential option that achieves at least the same or better environmental benefits from controlling emissions from stationary reciprocating internal combustion engines would be to adopt the lower oxides of nitrogen (NO_x) emission limits of Rule 1110.2 (Emissions from Gaseous- and Liquid-Fueled Engines) of the South Coast Air Quality Management District (SCAQMD).

Table 1. SDAPCD Rule 69.4.1 – Proposed Amendments

| | |
|--|---|
| NO _x Emission Reductions | 292 tons per year = 583,400 pounds per year |
| Annualized Cost for proposed Rule 69.4.1 | \$3,041,200 per year |
| Cost-Effectiveness | \$5.21 per pound NO _x reduced |

Table 2. SCAQMD Rule 1110.2 – 2019

| | |
|-------------------------------------|---|
| NO _x Emission Reductions | 463 tons per year = 926,000 pounds per year |
| Annualized cost | \$12,646,180 per year |
| Cost-Effectiveness | \$13.66 per pound NO _x reduced |

Table 3. Incremental Cost-Effectiveness

| | |
|--|---|
| Incremental Annualized Cost | $\$12,646,180 - \$3,041,200 = \$9,604,980$ per year |
| Incremental Annual Emission Reductions | $926,000 - 583,400 = 342,600$ pounds per year |
| Incremental Cost-Effectiveness | \$28 per pound NO _x reduced |

As shown in Table 3, the incremental cost-effectiveness of achieving higher emission reductions is \$28 per pound of NO_x reduced. This means that each extra pound of NO_x emissions that would be reduced by adopting the more stringent limits of SCAQMD Rule 1110.2 would cost \$28 in San Diego County. Therefore, this potential option is not feasible.

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.

SOCIOECONOMIC IMPACT ASSESSMENT

**PROPOSED AMENDED RULE 69.4.1 -
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES**

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**SOCIOECONOMIC IMPACT ASSESSMENT
PROPOSED AMENDED RULE 69.4.1 –
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES**

TABLE OF CONTENTS

| | |
|--|---|
| EXECUTIVE SUMMARY | 3 |
| I. INTRODUCTION | 5 |
| II. NECESSITY OF PROPOSED AMENDED RULE 69.4.1 | 5 |
| III. SUMMARY OF PROPOSED AMENDED RULE 69.4.1 | 6 |
| IV. TYPE OF INDUSTRIES AFFECTED BY PROPOSED AMENDED RULE | 7 |
| V. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS | 8 |
| VI. EMISSION REDUCTION POTENTIAL AND COST- EFFECTIVENESS OF THE PROPOSED AMENDED RULE | 8 |
| VII. CONCLUSION | 8 |

EXECUTIVE SUMMARY

The San Diego County Air Pollution Control District (District) is required by federal and State law to adopt and periodically update rules to control and reduce ozone-forming emissions from stationary sources in the San Diego region, which is an ozone nonattainment area. The District's proposed amended Rule 69.4.1 (Stationary Reciprocating Internal Combustion Engines) is the result of these federal and State requirements.

Additionally, when adopting, amending or repealing a rule that will significantly affect air quality or emissions limitations, the District is required by State law to assess the socioeconomic impacts. Proposed amended Rule 69.4.1 will affect emissions limitations by establishing emissions standards for new stationary engines. Accordingly, this Socioeconomic Impact Assessment (SIA) has been prepared pursuant to State law.

Rule 69.4, which was last amended on July 30, 2003, was subsequently approved by the U.S. Environmental Protection Agency (EPA) as part of the San Diego County portion of the State Implementation Plan for attaining and maintaining the air quality standards. The rule contains federal-only standards (Reasonably Available Control Technology – RACT) that reduce oxides of nitrogen (NO_x) emissions from stationary engines with a brake horsepower (bhp) rating of 50 or more that are located at major stationary sources (facilities emitting 50 or more tons per year of NO_x).

Rule 69.4.1, which was adopted on November 15, 2000, also applies to stationary engines with a bhp rating of 50 or greater. However, this rule contains more health-protective State requirements (Best Available Retrofit Control Technology – BARCT) for lower air pollutant emissions from stationary engines located at both major and non-major sources.

Following the adoption of these District rules, federal and State regulations were enacted which further limit the allowable air pollutant emissions from new and replacement stationary engines. These federal and State requirements are currently in effect and sources must comply regardless of whether they are incorporated in Rule 69.4.1. Nevertheless, incorporating the requirements in Rule 69.4.1 will enable the District to take credit for the resulting emissions reduction benefits in the region's air quality attainment plans, which it cannot do until Rule 69.4.1 incorporates the more stringent emissions limitations. Additionally, the proposed amended rule will increase regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements.

An estimated 3,300 existing stationary engines will be affected by the proposed amended rule. Upon full implementation, when all existing engines are replaced through normal attrition, proposed amended rule will reduce NO_x emissions from affected equipment by approximately 55% or 292 tons per year, with an average cost-effectiveness of about \$5 per pound of NO_x emissions reduced.

If adopted by the Board, proposed amended Rule 69.4.1 will be submitted to the EPA for approval into the State Implementation Plan pursuant to federal RACT requirements, and for attaining and maintaining the air quality standards. Existing Rule 69.4 will be automatically repealed at that time, as it is outdated and no longer needed.

The proposed rule amendments do not impose requirements beyond federal and State regulations that are already in effect, therefore the proposal does not result in additional costs to businesses. The proposed emissions standards apply to new and replacement stationary engines only and do not require early replacement or modification of existing engines. The proposal increases regulatory certainty for businesses by enhancing consistency with existing federal and State requirements, improving clarity, and providing a single, local regulation identifying all applicable requirements. Therefore, adoption of proposed amended Rule 69.4.1 is not expected to pose significant impacts on the affected industry sectors in San Diego County.

I. INTRODUCTION

California law requires air pollution control districts (with populations of 500,000 people or higher) to perform an SIA when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emission limitations.

The Health and Safety Code section 40728.5 specifies the following elements to be included in the SIA:

1. The type of industry or business, including small business, affected by the rule or regulation.
2. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
3. The range of probable costs to industry or business, including small business, of the rule or regulation.
4. The availability and cost-effectiveness of alternatives to the rule or regulation.
5. The emission reduction potential of the rule or regulation.
6. The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air quality standards.

Pursuant to Health and Safety Code Section 40728.5(e), the analyses specified in 2. and 4. above are not required if the proposed rule is substantially similar to or required by a state or federal law, regulation, or formal guidance document, including federal Control Techniques Guidelines. Proposed amended Rule 69.4.1 has included requirements that mirror those of the federal New Source Performance Standards Subpart IIII (Compression Ignition Internal Combustion Engines), Subpart JJJJ (Spark Ignition Internal Combustion Engines), the State Airborne Toxic Control Measure for Stationary Compression Ignition Engines, and the State RACT/BARCT Determination for Stationary Spark-Ignited Internal Combustion Engines in terms of emission standards, and administrative and testing requirements. Therefore, based on the Health and Safety Code stipulation, this SIA does not address either the availability or cost-effectiveness of the alternatives to proposed amended Rule 69.4.1, or its impact on the employment and the economy of San Diego County.

II. NECESSITY OF PROPOSED AMENDED RULE 69.4.1

The proposed amendments to Rule 69.4.1 is needed for two reasons. First, updating the rule will provide greater clarity for the entities subject to these already implemented federal and State requirements because the updated rule will accurately reflect them. Second, the District is required to have air quality attainment plans that demonstrate our progress toward meeting the federal National Ambient Air Quality Standards for ozone in a timely manner. Because the attainment plans are developed using air quality models that depend on how much air pollution is emitted into the air, it is important to account for all air pollutant emissions reductions that occur as a result of the District's activities and because of the rules adopted by the Board. In this case, the District cannot currently use

the emissions reductions realized via its permitting actions and updating Rule 69.4.1 with the more stringent emissions requirements would enable the District to account for those emission reductions in the region's air quality attainment plans. Being able to include these currently unused emission reductions in the air quality attainment modeling will improve the modeling and the prognosis for attaining National Ambient Air Quality Standards for ozone.

III. SUMMARY OF PROPOSED AMENDED RULE 69.4.1

In summary, proposed amended Rule 69.4.1 will:

New or Replacement Engines

- Provide an exemption from the rule for a new or replacement engine used in agricultural operations that is located at a site that is exempt from Permit to Operate requirements.
- Provide an exemption from the emission standards for new or replacement engines during commissioning periods of no more than 100 hours.
- Specify lower emission standards for the following new or replacement engine categories: prime gaseous-fueled; prime diesel-fueled (Tier 4 final certified); emergency standby gaseous-fueled; and emergency standby diesel-fueled (Tier 2 or Tier 3 certified).
- Require the installation of a Continuous Emissions Monitoring System for a new or replacement gaseous-fueled engine rated at 1,000 brake horsepower (bhp) or greater and permitted to operate more than 2,000 hours per calendar year.
- Require a new or replacement gaseous-fueled engine rated at 1,000 bhp or greater and permitted to operate more than 2,000 hours per calendar year to be source tested at least once every permit year.

Existing and New or Replacement Engines

- Provide an exemption from the emission standards for an engine during startup and shutdown periods.
- For a prime gaseous-fueled engine, unless otherwise exempted, require the use of a portable analyzer to take emission readings to verify compliance with the rule emission standards during any calendar quarter in which a source test is not performed.
- Require written notification to the District within 10 calendar days of replacing an engine hour meter.

IV. TYPE OF INDUSTRIES AFFECTED BY THE PROPOSED AMENDED RULE

Proposed amended Rule 69.4.1 will affect many diverse industrial sectors in San Diego County. Businesses and entities directly affected by the rule will be those who use stationary internal combustion engines in their daily operations. Distributors, wholesale vendors, other suppliers and manufacturers of the regulated products are expected to experience little impact from the rule.

Businesses affected by proposed amended Rule 69.4.1 fall into many different industries as designated by SIC code. As the rule affects a wide spectrum of San Diego County's local economy, this SIA divides the local industries into seven broad industry categories: *Manufacturing, Mineral, Shipbuilding, Utilities, Airport, Military, and Services.*

"Manufacturing" includes all manufacturing segments that are not rock/mineral industry or shipbuilding industry related. End users of the manufacturing group use their engines in applications such as compressors, generators and other production related tasks.

"Mineral" includes companies using engines for rock/mineral related manufacturing and processing, special construction (such as dredging) and other industrial applications like concrete and asphalt recycling operations.

"Shipbuilding" includes manufacturing and associated sectors in the shipbuilding and repair industries. It excludes dredging operations.

"Utilities" includes the transportation, communication and utilities sectors with the exception of airport and air transport related segments. Many government agencies with municipal utility services also belong in this group. Landfills and non-mineral recycling facilities (e.g., mulching) are included in this group as well.

"Airport" includes airport and air transport related segments that use airport ground support engines. These engines provide backup electrical power or compressed air to aircraft on the ground.

"Military" includes military operators of stationary internal combustion engines used in non-tactical support areas such as hospitals and on-base public works.

"Services" includes a wide spectrum of SIC groups, including retail, finance, insurance, real estate, services, health care and all other (non-military) government services sectors. Mainly, this group addresses engine operators in building operation, management, and maintenance (office, recreational facilities, parks, hotels, and schools). These engines are used most commonly as emergency standby engines or for cogeneration.

V. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS

A variety of engines that comply with the emissions limits of the proposed amended rule are commercially available as a result of federal and State regulations that are currently in effect. Therefore, compliance with proposed amended Rule 69.4.1 is not expected to increase costs for manufacturers to develop new technology.

Table 1 shows the average annualized costs for prime (non-emergency) diesel engines and emergency diesel or gaseous fueled engines upon replacement with compliant equipment. Costs are grouped by engine brake horsepower ratings as costs rise with increased engine size.

TABLE 1 – Total Annualized Costs of Engines Subject to Proposed Amended Rule 69.4.1

| <i>Engine Rating (bhp)</i> | <i>Replacement Non-Emergency Diesel Engines Average Annualized Cost (\$/yr)</i> | <i>Replacement Emergency Engines (diesel or gaseous fuel) Average Annualized Cost (\$/yr)</i> |
|----------------------------|---|---|
| 50 – 120 | 1,964 | 82 |
| 121 - 175 | 3,100 | 145 |
| 176 - 250 | 4,449 | 210 |
| 251 – 500 | 7,531 | 384 |
| 501 - 750 | 15,550 | 603 |
| 751 – 1,000 | 19,091 | 828 |
| 1,001 – 1,500 | 31,237 | 1,305 |
| 1,501 – 2,000 | 40,452 | 1,614 |
| 2,001 – 3,000 | 63,656 | 2,618 |
| >3000 | N/A | 4,664 |

VI. EMISSION REDUCTION POTENTIAL AND COST-EFFECTIVENESS OF THE PROPOSED AMENDED RULE

An estimated 3,300 existing stationary engines, the vast majority of which are emergency standby engines, will be subject to the proposed amended rule. The total NOx emissions from these existing units are estimated to be about 533 tons per year. Upon full implementation, when all existing engines are replaced through normal attrition, the proposed amended rule will reduce NOx emissions from affected equipment by approximately 55% or 292 tons per year, with an average cost-effectiveness of about \$5 per pound of NOx emissions reduced.

VII. CONCLUSION

Proposed amended Rule 69.4.1 does not impose requirements beyond federal and State regulations that are already in effect. The proposed amended rule is not expected to negatively impact affected residences or industries, including small businesses, nor to affect employment or the economy of San Diego County. The proposed amended rule will bring considerable environmental benefits by reducing NOx emissions that are precursors of ground level ozone, a major component of photochemical smog.

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 (NOx) 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

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.

~~(121)~~ **"Generator Set"** means an engine coupled to a generator that is used as a source of electricity.

~~(125)~~ **"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.

~~(127)~~ **"Load Cycle"** means ~~the time interval between consecutive commencement of application of external load to an engine.~~

~~(128)~~ **"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)*.

~~(125)~~ **"NMHC"** means non-methane hydrocarbons.

~~(126)~~ **"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:

| | <u>Weight Percent Engine Category 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 (i)(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 NOx, in parts per million by volume (ppmv), calculated as nitrogen dioxide at 15% oxygen on a dry basis, or in grams of NOx 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.