

**RULE 69.4 STATIONARY RECIPROCATING INTERNAL COMBUSTION  
ENGINES (Adopted and Effective 9/27/94)**

**(a) APPLICABILITY**

Except as provided in Section (b), this rule shall apply to stationary internal combustion engines with a brake horsepower output rating of 50 bhp or greater located at a major stationary source of oxides of nitrogen (NO<sub>x</sub>). An engine subject to this rule shall not be subject to Rule 68.

**(b) EXEMPTIONS**

(1) The provisions of 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.

(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 engines operated either during emergency situations or for maintenance purposes, provided that the operation of the engine for maintenance purposes does not exceed 52 hours per calendar year.

(iii) Any emergency standby engine at a nuclear generating station subject to the requirements of the Nuclear Regulatory Commission, either during emergency situations or for maintenance purposes, provided that the operation of the engine for maintenance purposes does not exceed 500 hours per calendar year.

(iv) Any engine used in conjunction with military tactical deployable equipment operated at military sites, provided that the operation of the engine does not exceed 1000 hours per calendar year.

An owner or operator of an engine who is claiming exemption pursuant to Subsection (b)(2) shall maintain records in accordance with Subsections (e)(1) and (e)(2).

**(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 oxides of nitrogen emissions from the exhaust gas stream of an engine and is installed downstream of the engine.

(2) **"Brake Horsepower Output 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 derating.

(3) **"Emergency Standby Engine"** means an engine used exclusively in emergency situations 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 airports for the purpose of providing power in anticipation of a power failure due to severe storm activity shall be considered an emergency situation.

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) **"Existing Engine"** means an engine which commenced operation in San Diego County on or before September 27, 1994.

(6) **"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, and excluding waste derived gaseous fuel.

(7) **"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.

(8) **"Major Stationary Source of NOx"** means a stationary source that emits or has the potential to emit 25 tons or more of NOx per year. If the San Diego County Air Pollution Control District is reclassified to a "serious" ozone non-attainment area by the federal Environmental Protection Agency, then a major stationary source of NOx will mean a stationary source that emits or has the potential to emit 50 tons or more of NOx per year.

(9) **"Military Tactical Deployable Equipment"** means equipment operated

by the United States armed forces or National Guard which is designed specifically for military use in an off-road, dense terrain and/or hostile environment or on board military combat vessels and is capable of being moved from one location to another. This equipment requires the ability to perform in a uniform manner with a minimum amount of maintenance which has been standardized throughout the United States military and/or NATO forces.

(10) **"New Engine"** means an engine installed in San Diego County which commenced operation after September 27, 1994.

(11) **"Portable Emissions Unit"** means an emission unit which is designed and equipped to be easily movable and, as installed, easily capable of being moved from one stationary source to another, as determined by the Air Pollution Control Officer. Portable emission units are periodically moved and may not be located more than 180 days at any one stationary source within any consecutive 12-month period. Days when portable emission units are stored in a designated holding or storage area shall not be counted towards the 180-day limit, provided the emission unit was not operated on that calendar day except for maintenance and was in the designated holding area the entire calendar day.

(12) **"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.

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

(14) **"Stationary Source"** means the same as is defined in Rule 20.1.

(15) **"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.

(16) **"Uncontrolled NOx Emissions"** means NOx emissions from an engine calculated in parts per million by volume as nitrogen dioxide at 15% oxygen on a dry basis or in grams of NOx per brake horsepower-hour, before application of add-on air pollution control equipment or combustion modifications.

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

(d) **STANDARDS**

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

(i) The emissions of oxides of nitrogen (NO<sub>x</sub>), calculated in parts per million by volume (ppmv) as nitrogen dioxide at 15% oxygen on a dry basis, are not greater than the following:

<u>Engine Category</u>	<u>Concentration of NO<sub>x</sub> (ppmv)</u>
Rich-burn engines using exclusively fossil derived gaseous fuel or gasoline	50
Lean-burn engines using exclusively fossil derived gaseous fuel	125
Engines using waste derived gaseous fuel	125
Engines using diesel or kerosene fuel	700

or

(ii) Uncontrolled NO<sub>x</sub> emissions from such engine are reduced by not less than the following:

<u>Engine Category</u>	<u>Percent Reduction</u>
Rich-burn engines using exclusively fossil derived gaseous fuel or gasoline	90
Lean-burn engines using exclusively fossil derived gaseous fuel	80
Engines using waste derived gaseous fuel	80
Engines using diesel or kerosene fuel	25

(2) For all engines subject to this rule, emissions of carbon monoxide, calculated in parts per million by volume (ppmv) at 15% oxygen on a dry basis, shall not exceed 4500 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. The records required by this section shall be kept on site for at least the same period of time as the engines to which the records apply are 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 of maintenance performed.

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

(i) dates and times of engine operation indicating, if applicable, whether the operation was during emergency situations or for maintenance purposes; and

(ii) total cumulative annual hours of operation.

(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) using add-on control equipment shall keep the following monthly records:

(i) temperature of the inlet and outlet of the control device;

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

(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 engines using exclusively gaseous fuel subject to the requirements of Section (d) shall also keep the following monthly records:

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

(ii) engine exhaust temperature; and

(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 keep monthly records of operating parameters that are necessary to demonstrate continuous compliance, such as:

(i) engine air-to-fuel ratio;

- (ii) engine exhaust temperature; and
- (iii) engine inlet manifold temperature and pressure.

(6) Except as otherwise specified in this rule, all records required by Section (e) shall be retained on site for at least three years and made available to the District upon request.

(f) **TEST METHODS**

(1) To determine compliance with Section (d), measurement of oxides of nitrogen, carbon monoxide, and stack-gas oxygen content shall be conducted in accordance with the Air Resources Board (ARB) Test Method 100 as approved by the U.S. Environmental Protection Agency (EPA) and a source test protocol approved in writing by the Air Pollution Control Officer.

(2) The averaging period to calculate NO<sub>x</sub> and carbon monoxide emissions concentrations and to determine compliance shall be at least thirty minutes and not more than 60 minutes.

(3) Emissions source testing, if applicable, shall be performed at no less than 80 percent of the brake horsepower output rating. If an owner or operator of an existing engine demonstrates to the satisfaction of the Air Pollution Control Officer that the engine cannot operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous horsepower rating.

(g) **COMPLIANCE SCHEDULE**

The owner or operator of an engine subject to the requirements of Section (d) of this rule shall meet the following increments of progress:

(1) For an existing engine which does not need modification and/or add-on control equipment, submit documentation showing that the engine is in compliance with all applicable rule requirements not later than May 31, 1995.

(2) For an existing engine which requires modification and/or add-on control equipment:

(i) By January 27, 1995, submit to the Air Pollution Control Officer an application for Authority to Construct and Permit to Operate a modified engine or add-on control equipment as necessary to comply with the applicable requirements of Section (d).

(ii) By May 31, 1995, modify the engine or install add-on control equipment as necessary to comply with the applicable requirements of Section (d).

(3) For a new engine, comply with all applicable requirements of this rule upon installation and startup.