

BAY AREA AIR QUALITY MANGEMENT DISTRICT

**RULE 9-8 – NITROGEN OXIDES AND CARBON MONOXIDE FROM
STATIONARY INTERNAL COMBUSTION ENGINES**

(Adopted January 20, 1993) (Last amended August 1, 2001)

**REGULATION 9
INORGANIC GASEOUS POLLUTANTS
RULE 8
NITROGEN OXIDES AND CARBON MONOXIDE
FROM STATIONARY INTERNAL COMBUSTION ENGINES**

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FROM STATIONARY INTERNAL COMBUSTION ENGINES

(Adopted January 20, 1993)

9-8-100 GENERAL

9-8-101 Description: This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at 50 brake horsepower or more.

9-8-110 Exemptions: The requirements of Sections 9-8-301, 302, and 502 shall not apply to the following:

110.1 Engines rated by the manufacturer at less than 250 brake horsepower output rating.

110.2 Engines fired exclusively by liquid fuels including, but not limited to, diesel fuel, gasoline, and methanol.

110.3 Engines used directly and exclusively for the growing of crops or the raising of fowl or animals.

110.4 Emergency standby engines.

9-8-111 Limited Exemption for Low Usage: The requirements of Sections 9-8-301 and 302 shall not apply to the following low use operations provided the requirements of Section 9-8-502 are met:

111.1 Engines rated at, or below, 1000 brake horsepower which operate less than 200 hours in any 12-consecutive-month period.

111.2 Engines rated above 1000 brake horsepower which operate less than 100 hours in any 12-consecutive-month period.

9-8-200 DEFINITIONS

9-8-201 Gaseous Fuels: For the purposes of this rule, gaseous fuels include, but are not limited to:

201.1 Fossil derived fuel gas such as natural gas, methane, ethane, propane, refinery fuel gas, and butane, including gases stored as liquids such as liquified petroleum gas (LPG).

201.2 Waste derived fuel gas such as sewage sludge digester gas or landfill gas.

9-8-202 Nitrogen Oxide (NO_x) Emissions: The sum of nitric oxide (NO) and nitrogen dioxide (NO₂) in the engine exhaust, collectively expressed as nitrogen dioxide.

9-8-203 Rated Brake Horsepower: The maximum brake horsepower rating at maximum revolutions per minute (RPM) specified for the engine by the manufacturer or indicated on the engine nameplate.

9-8-204 Stationary Internal Combustion Engine (Engine): Any spark or compression ignited internal combustion engine that is operated, or intended to be operated, at a specific site for more than one year or is attached to a foundation at that site.

9-8-205 Rich-Burn Engine: Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of less than 4 percent, by volume. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

9-8-206 Lean-Burn Engine: Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of 4 percent, by volume, or greater. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

9-8-230 Emergency Standby Engine: Any engine that is exclusively operated:

230.1 For emergency use; and

230.2 For reliability-related activities.

- 9-8-231 Emergency Use:** The use of an emergency standby engine during any of the following:
- 231.1 In the event of loss of regular natural gas supply;
 - 231.2 In the event of failure of regular electric power supply;
 - 231.3 Flood mitigation;
 - 231.4 Sewage overflow mitigation;
 - 231.5 Fire;
 - 231.6 Failure of a primary motor, but only for such time as needed to repair or replace the primary motor.
- 9-8-232 Reliability-related activities:** Either:
- 232.1 Operation of an emergency standby engine to test its ability to perform for an emergency use; or
 - 232.2 Operation of an emergency standby engine during maintenance of a primary motor.
- 9-8-233 Essential Public Service:**
- 233.1 A sewage treatment facility, and associated collection system, which is publicly owned and operated;
 - 233.2 Water treatment and delivery operations;
 - 233.3 Public transit;
 - 233.4 Police or fire fighting facility;
 - 233.5 Airport runway lights; or
 - 233.6 Hospital or other medical emergency facility.
- 9-8-300 STANDARDS**
- 9-8-301 Emission Limits - Fossil Derived Fuel Gas:** Effective January 1, 1997, a person shall not operate a stationary internal combustion engine fired exclusively on fossil derived fuel gas, unless the following emission limits are met:
- 301.1 Rich-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 56 ppmv as corrected to 15% oxygen, dry basis.
 - 301.2 Lean-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis.
 - 301.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.
- 9-8-302 Emission Limits - Waste Derived Fuel Gas:** Effective January 1, 1997, a person shall not operate a stationary internal combustion engine fired on waste derived fuel gas or any combination of gaseous fuels and liquid fuels unless the following emission limits are met:
- 302.1 Lean-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis.
 - 302.2 Rich-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 210 ppmv as corrected to 15% oxygen, dry basis.
 - 302.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.
- 9-8-330 Emergency Standby Engines, Hours of Operation:** A person may only operate an emergency standby engine under the following circumstances:
- 330.1 For emergency use for an unlimited number of hours; and
 - 330.2 For reliability-related activities so long as total hours of operation for this purpose do not exceed 100 hours in a calendar year, or limitations contained in a District permit, whichever is lower.
- 9-8-331 Essential Public Service, Hours of Operation:** An essential public service may only operate an emergency standby engine under the following circumstances:
- 331.1 For emergency use for an unlimited number of hours; and
 - 331.2 For reliability-related activities so long as total hours of operation for this purpose do not exceed 200 hours per calendar year, or limitations contained in a District permit, whichever is lower.

9-8-400 ADMINISTRATIVE REQUIREMENTS

9-8-401 Compliance Schedule: A person subject to the requirements of Section 9-8-301 or 302 shall submit an application for any Authority to Construct, necessary to achieve compliance with such requirements, by January 1, 1996, and be in compliance with all of the requirements of this rule by January 1, 1997.

9-8-500 MONITORING AND RECORDS

9-8-501 Initial Demonstration of Compliance: A person who must modify existing sources or install new control equipment shall conduct a District approved source test, pursuant to Sections 9-8-601 and 602 by March 31, 1997, for the purpose of demonstrating compliance with Section 9-8-301 or 302. Source test results shall be submitted to the District by May 31, 1997.

9-8-502 Recordkeeping: Any person who operates engines which are exempt from the requirements of Section 9-8-301 or 302 by Section 9-8-111 shall keep records of the number of hours the engines are fired on a monthly basis. Such records shall be retained for a minimum of 24 months from the date of entry and made available to District staff upon request.

9-8-530 Emergency Standby Engines, Monitoring and Recordkeeping: Each emergency standby engine shall be equipped with a non-resettable totalizing meter that measures hours of operation or fuel usage. All records shall be kept for at least two years, and shall be available for inspection by District staff upon request. The operator shall keep a monthly log of usage that shall indicate the following:

- 530.1 Hours of operation (total)
- 530.2 Hours of operation (emergency)
- 530.3 For each emergency, the nature of the emergency condition.

9-8-600 MANUAL OF PROCEDURES

9-8-601 Determination of Nitrogen Oxides: The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of nitrogen oxides are set forth in the District's Manual of Procedures, Volume IV, ST-13 A or B.

9-8-602 Determination of Carbon Monoxide and Stack Gas Oxygen: The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of carbon monoxide and stack gas oxygen are set forth in the District's Manual of Procedures, Volume IV, ST-6 (carbon monoxide) and ST-14 (oxygen).