

COLUSA COUNTY AIR POLLUTION CONTROL DISTRICT

**RULE 2.36 -- STATIONARY INTERNAL COMBUSTION ENGINES**

*(Adopted 3/24/98)*

a. PURPOSE

To limit emissions of nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) from stationary internal combustion engines.

b. APPLICABILITY

The provisions of this rule apply to any gaseous, diesel, or any other liquid-fueled stationary internal combustion engine within the boundaries of the District.

c. EXEMPTIONS

Except for the administrative requirements of Section f.3. the provisions of this rule shall not apply to the following engines:

1. Engines operated directly and exclusively for agricultural operations in the growing of crops or raising of fowl or animals if maintained to manufacturers specifications;
2. Non-emergency engines operating less than 200 hours per calendar year for non-emergency purposes as determined by a non-resetting hour meter, or any emergency standby engine as approved by the Air Pollution Control Officer (APCO);
3. Any engine rated by the manufacturer  $\leq$  50 brake horsepower if maintained to manufacturers specifications;
4. Gas turbine engines;
5. Engines operated exclusively for fire fighting or flood control;
6. Laboratory engines operated in research and testing;
7. Existing internal combustion engines to be permanently replaced with electric motors or removed from service by July 1, 2000 based upon a permit condition, contract, or binding agreement with the District;
8. Portable internal combustion engines which have been registered and certified under the state portable equipment regulation contained in California Health & Safety Code Sections 41750 through 41755.

9. Diesel internal combustion engines manufactured prior to 1950 and operated less than 500 hours per year.

d. DEFINITIONS

1. EMERGENCY

Any situation arising from sudden and reasonably unforeseeable natural disaster such as earthquake, flood, wildfire, or other act of God, or events beyond the control of the operator, employees, or contractors, or accidents which require the operation of internal combustion engine(s) to provide primary mechanical or electrical power in its abatement or control.

2. EMERGENCY STANDBY ENGINE

An internal combustion engine operated only during emergencies and for testing and maintenance purposes. Testing and maintenance shall be limited to no more than 100 hours per year.

3. NON-EMERGENCY ENGINE

An internal combustion engine that is not used for electric power generation or any other engine as approved by the APCO that is not used in conjunction with any utility voluntary demand reduction program.

4. LEAN-BURN ENGINE

Any spark or compression ignited internal combustion engine that is operated with an exhaust gas stream oxygen concentration of four percent (4%) by volume, or greater. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust gas stream.

5. RATED BRAKE HORSEPOWER

The maximum rated brake horsepower specified for the engine by the manufacturer and listed on the nameplate for the unit, regardless of any derating, unless limited by the engine's Permit to Operate (PTO).

6. RICH-BURN ENGINE

Any spark or compression ignited internal combustion engine that is operated with an exhaust gas stream oxygen concentration of less than four percent (4%) by volume. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust gas stream.

7. STATIONARY INTERNAL COMBUSTION ENGINE

Any spark or compression ignited internal combustion engine, excluding emergency equipment, that is attached to a foundation, frame, or other support and is stationary while in operation, or is operated at a site for more than six (6) consecutive months:

- A. Any engine, such as a back-up or standby engine, that replaces an engine at a location and is intended to perform the same function as the unit being replaced will be included in calculating the consecutive time period. In that case, the cumulative time of both emissions units, including the time between removal of the original unit and the installation of the replacement unit, would be counted toward the consecutive residence time period; or
- B. The engine remains or will remain at a location for less than six (6) consecutive months where such a period represents the full length of normal operations at the stationary source, such as a seasonal source; or
- C. The engine is removed from one location for a period and then returned to the same location in an attempt to circumvent the residence time requirements of six (6) months.

The period during which the emissions unit is maintained at a storage facility shall be excluded from determining the above residency requirement.

e. REQUIREMENTS

1. EMISSION LIMITS

Any stationary internal combustion engine, other than those engines specified in Section c., rated at  $> 50$  bhp but  $\leq 300$  bhp shall not be operated in a manner that results in emissions exceeding the limits listed below:

| <u>Engine Type</u>        | <u>NOx (ppmv)</u> | <u>CO (ppmv)</u> |
|---------------------------|-------------------|------------------|
| Rich Burn                 | 640 ppmv          | 4500             |
| Lean Burn                 | 740 ppmv          | 4500             |
| Diesel & all liquid fired | 700 ppmv          | 4500             |

ppmv = parts per million by volume corrected to 15% oxygen, dry basis

NOx = oxides of nitrogen, calculated as equivalent NO<sub>2</sub>

CO = carbon monoxide

## 2. EMISSION LIMITS

Any stationary internal combustion engine, other than those engines specified in Section c., rated at > 300 bhp shall not be operated in a manner that results in emissions exceeding the limits listed below:

| <u>Engine Type</u>        | <u>NOx (ppmv)</u> | <u>CO (ppmv)</u> |
|---------------------------|-------------------|------------------|
| Rich Burn                 | 90 ppmv           | 4500             |
| Lean Burn                 | 150 ppmv          | 4500             |
| Diesel & all liquid fired | 700 ppmv          | 4500             |

ppmv = parts per million by volume corrected to 15% oxygen, dry basis

NOx = oxides of nitrogen, calculated as equivalent NO<sub>2</sub>

CO = carbon monoxide

## 3. EMISSION LIMITS

Except for visible emissions from diesel pile-driving hammers and any diesel auxiliary engine or generator used exclusively to operate a drinking water system, no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity as determined by EPA Method 9. Diesel pile-driven hammers shall comply with the applicable provisions of Section 41701.5, diesel auxiliary engine or generator used exclusively to operate a drinking water system shall comply with the applicable provisions of Section 41701.6 of the California Health and Safety Code.

f. ADMINISTRATIVE REQUIREMENTS

1. INFORMATION REQUESTED

No later than July 1, 1998 the owner or operator of any existing engine subject to the provisions of this rule shall provide the following or apply for an Authority to Construct:

- A.
  - 1) Permit to Operate number;
  - 2) Engine manufacturer;
  - 3) Model designation;
  - 4) Rated brake horsepower;
  - 5) Type of fuel and type of ignition;
  - 6) Combustion type: rich-burn or lean-burn;
  - 7) Two (2) or four (4) cycle;
  - 8) Any installed emission control equipment.
- a. The owner or operator shall identify the type of emission control to be applied to each stationary engine, or shall provide support documentation sufficient to demonstrate that the engine is in compliance with the emission limits of this rule.

2. RECORD KEEPING

The owner or operator of any stationary internal combustion engine subject to the provisions of this rule shall maintain an engine operating log for each month or any part of a month that the device is operated that includes the following:

- A. Total recorded hours of operation, calculated hours of operation based upon fuel usage, or other calculation procedure to determine hours of operation based upon a method authorized by the Air Pollution Control Officer;
- B. Type of fuel combusted, measured quantity of fuel used, or calculated fuel usage based upon a method authorized by the Air Pollution Control Officer;
- C. Date(s) and type of maintenance performed.
- D. Annual emission test results using a portable analyzer as specified in Section g.1.B. of this Rule.

This information shall be maintained for a period of two years and shall be submitted to the APCO upon request.

3. EXEMPT ENGINES

Any owner or operator claiming an exemption under section c. 2. through c. 9. shall:

- A. Submit support documentation identifying reasons for the exemption no later than July 1, 1998. Documentation shall be submitted for each exemption applied for and shall contain a list that provides the following if applicable:
  - 1) Engine manufacturer;
  - 2) Model designation;
  - 3) Rated brake horsepower;
  - 4) Type of fuel and type of ignition;
  - 5) Combustion type: rich-burn or lean-burn;
  - 6) Two (2) or four (4) cycle;
  - 7) Gas turbine;
  - 8) Portable equipment registration or certificate number;
  - 9) Removal or electrification schedule.
- B. Maintain annual operating records and/or support documentation necessary to claim exemption. This information shall be maintained for two years and shall be submitted to the APCO upon request.

g. COMPLIANCE TESTING

1. TESTING SCHEDULE

- A. The owner or operator of any stationary internal combustion engine subject to the provisions of this rule, except those engines utilizing Continuous Emission Monitoring (CEM), or are exempt under Section c., shall demonstrate compliance with the requirements of Section e.1. or e.2. by conducting an initial emission test in accordance with methods specified in Section g.2. of this Rule.
- B. Upon successful demonstration of initial compliance, testing of emissions with a portable analyzer as specified in Section g.2. shall be completed by the owner or operator as an inspection and maintenance program. This testing shall be conducted every 8760 hours or three years, whichever occurs first. If any emission values are found to be greater than the limits specified in Section e.1. or e.2., immediate corrective action shall be taken and the District shall be advised of the condition of excessive emissions. Record keeping of all results of this

inspection and maintenance program shall be required as specified in Section f.2. of this Rule.

- C. The testing of emissions required in Section g.1.B. above shall be demonstrated in the presence of District staff for compliance demonstration purposes upon request by the District.
- D. Testing of emissions pursuant to Section g.2. may be required at any time for enforcement purposes.

## 2. TEST METHODS

Compliance with the requirements of Section e.1. or e.2. shall be determined at the manufacturers recommended maximum horsepower for continuous operation, normal operating level, or consistent with limitations listed in the Permit to Operate, in accordance with the following test procedures as approved by the APCO:

- A. Oxides of Nitrogen shall be determined by EPA Method 7E, or ARB Method 100, or a method approved in writing by the APCO using a portable analyzer\*.
- B. Carbon Monoxide shall be determined by EPA Method 10, or ARB Method 100, or a method approved in writing by the APCO using a portable analyzer\*.
- C. Oxygen Content shall be determined by EPA Method 3, 3A, or ARB Method 100, or a method approved in writing by the APCO using a portable analyzer\*.
- D. NO<sub>x</sub> emission limitations specified in Section e.1. and e.2. shall be expressed as nitrogen dioxide (NO<sub>2</sub>). All ppmv emission limitations are referenced at fifteen percent (15%) volume stack gas oxygen on a dry basis. Source test data point intervals shall be no greater than five (5) minutes and data points shall be averaged over no less than 15 minutes of engine operation.

\*Note: The APCO may authorize use of specific portable analyzers for the measurement of oxides of nitrogen, carbon monoxide, and oxygen which do not meet the requirements of the test methods specified in Sections g.2.A., g.2.B. and g.2.C. provided that evidence accompanies each test report that instrument operation conformed to manufacturer's recommendations and that the instrument(s) used responded appropriately to calibration gases both before and after testing, and provided that measurements made by the methods specified in Sections g.2.A., g.2.B. and g.2.C. shall be

recognized as more reliable in any dispute involving measurements made by different methods. Evidence of instrument response stability shall be provided if calibration checks are not performed at the test site immediately before and after testing.

h. INITIAL COMPLIANCE SCHEDULE

Owners or operators of engines subject to the requirements of Section e.1. and/or e.2. shall comply with the requirements of this rule by the following schedule:

1. No later than January 1, 1999 submit a complete application for Authority to Construct for all modifications to each engine required to comply with Section e.1. or e.2. of this rule, or shall provide support documentation sufficient to demonstrate that each engine is in compliance with the emission limits of this rule.
2. No later than January 1, 2000 complete all modifications to each engine and demonstrate full compliance with all provisions of this rule.