

## RULE 1160

### Internal Combustion Engines

#### (A) General

##### (1) Purpose

- (a) The purpose of this rule is to limit the emissions of Oxides of Nitrogen (NO<sub>x</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC) from Internal Combustion Engines that are not subject to District Rule 1160.1 – *Internal Combustion Engines in Agricultural Operations*.

##### (2) Applicability

- (a) This rule applies to any stationary Internal Combustion Engine rated at 50 or more brake horsepower (bhp), when located within the Federal Ozone Nonattainment Area.

#### (B) Definitions

The definitions contained in District Rule 102 – *Definition of Terms* shall apply unless the term is otherwise defined herein:

- (1) “Emergency Internal Combustion Engines”– Any Internal Combustion Engines which meets any of the following criteria:
  - (a) An Internal Combustion Engine driving a generator used at facilities normally serviced with commercial power, where the generators are used exclusively as emergency units during loss of commercial power.
  - (b) An Internal Combustion Engine driving a generator used at facilities normally serviced with an alternative energy supply including, but not limited to, photovoltaic power, where the generators are used exclusively as emergency units during loss of such alternative energy source but no more than 200 hours total per year.
  - (c) An Internal Combustion Engine driving a fire pump or deluge pump that is used exclusively during fire emergency or testing.
  - (d) An Internal Combustion Engine driving an air compressor that is used exclusively during emergency shutdowns and/or to start-up black start engines.

- (2) “Emissions Compliance Test” – An emissions compliance test conducted in accordance with a District approved test protocol pursuant to the MDAQMD Compliance Test Procedural Manual.
- (3) “Emission Control Equipment” – Equipment technologies which control Internal Combustion Engine emissions, including, but not limited to, Selective Catalytic Reduction (SCR); Non-Selective Catalytic Reduction (NSCR); Oxidation Catalyst; and fuel, air, and exhaust modifications. This definition excludes diesel particulate filters or traps.
- (4) “Internal Combustion Engine” – A spark- or compression-ignited reciprocating engine featuring intermittent combustion within one or more internal chambers to produce useful work by applying a varying force against a reciprocating piston.
- (5) “Lean-burn Engine” – Any Spark-Ignited Internal Combustion Engine that is operated with an exhaust stream oxygen concentration of four (4) percent by volume, or greater prior to any exhaust stream Emission Control Equipment.
- (6) “Portable Internal Combustion Engine” – Internal Combustion Engines which are not operated, nor intended to be operated, at one specific site for more than twelve (12) consecutive months, is not permanently affixed to only one location. Indications of Portable Internal Combustion Engines include, but are not limited to, those that are transportable and may be mounted on mobile sources, trailers, skids, or other platforms.
- (7) “Rich-Burn Engine” – Any Spark-Ignited Internal Combustion Engine that is operated with an exhaust stream oxygen concentration of less than four (4) percent by volume prior to any exhaust Emission Control Equipment.
- (8) “Spark-Ignited Internal Combustion Engine” – A liquid or Gaseous Fueled engine designed to ignite its air/fuel mixture by a spark across a spark plug.

## (C) Requirements

- (1) Emissions Limits
  - (a) NOX Emissions
    - (i) Internal Combustion Engines subject to this rule shall not exceed the following emission limits in Table 1, unless the Internal Combustion Engine is subject to (C)(1)(a)(ii).
    - (ii) Internal Combustion Engines K-2, K-5, K-6, K-8 and K-9 located at the Pacific Gas & Electric Facility Hinkley Compressor Station in Hinkley, California (or its successor) shall not be in operation for more than a total of 2600 engine-hours per calendar year in aggregate, verified by engine hour meters and use records. Operation in excess of this limit will subject all these engines to (C)(1)(a)(i) and require a demonstration of compliance with that section within 180 days.

<b>Table 1</b> <b>NO<sub>x</sub> Emission Limits for Internal Combustion Engines</b> (ppmv limitations shall be referenced at 15 percent volume stack gas oxygen measured on a dry basis and averaged over 15 consecutive minutes)	
<b>Engine Type</b>	<b>NO<sub>x</sub> Limit</b>
Spark-Ignited Internal Combustion Engine, Rich Burn	50 ppmv
Spark-Ignited Internal Combustion Engine, Lean Burn	125 ppmv
Compression-Ignited Internal Combustion Engine	80 ppmv

(b) VOC Emissions

- (i) Internal Combustion Engine(s) subject to this rule shall not exceed the following emission limits for VOC, as listed in Table 2, unless the Internal Combustion Engine is subject to (C)(1)(b)(ii).
- (ii) Internal Combustion Engines located at the Facility of Southern California Gas, Newberry Springs (or its successor) shall not exceed the VOC limit of 255 ppmv, referenced at 15 percent, volume stack gas, oxygen measured on a dry basis and averaged over 15 consecutive minutes.

<b>Table 2</b> <b>VOC Emission Limits for Internal Combustion Engines</b> (ppmv limitations shall be referenced at 15 percent, volume stack gas, oxygen measured on a dry basis and averaged over 15 consecutive minutes)	
<b>Engine Type</b>	<b>VOC Limit</b>
Spark-Ignited Internal Combustion Engine, Rich Burn	106 ppmv
Spark-Ignited Internal Combustion Engine, Lean Burn	106 ppmv
Compression-Ignited Internal Combustion Engine	106 ppmv

(c) CO Emissions

- (i) Internal Combustion Engines subject to this rule shall not exceed the following emission limits in Table 3.

<b>Table 3</b> <b>CO Emission Limits for Internal Combustion Engines</b> (ppmv limitations shall be referenced at 15 percent volume stack gas oxygen measured on a dry basis and averaged over 15 consecutive minutes)	
<b>Engine Type</b>	<b>CO Limit</b>
Spark-Ignited Internal Combustion Engine, Rich Burn	4500 ppmv
Spark-Ignited Internal Combustion Engine, Lean Burn	4500 ppmv
Compression-Ignited Internal Combustion Engine	4500 ppmv

- (2) Engine Operations
  - (a) All engines subject to this rule shall be operated in a manner such that emissions are minimized, in conformance with good combustion practices and in compliance with manufacturer's recommendations.

(D) Exemptions

- (1) The provisions of this rule shall not apply to:
  - (a) Any Internal Combustion Engine rated at less than 50 brake horsepower.
  - (b) Any Internal Combustion Engine operated less than 100 hours in any rolling twelve (12) month period.
  - (c) Any Internal Combustion Engine subject to the *Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines rated at 50 Horsepower and Greater*, Title 17 CCR 93116, or otherwise classified as a Portable Internal Combustion Engine.
  - (d) Any Internal Combustion Engine that is an Emergency Internal Combustion Engine provided that the Internal Combustion Engine does not operate more than 100 hours for non-emergency use in any rolling twelve (12) month period.
  - (e) Any Internal Combustion Engine operated on an engine test stand.
  - (f) Any Internal Combustion Engine subject to District Rule 1160.1 – *Internal Combustion Engines in Agricultural Operations*.
  - (g) Any Internal Combustion Engine located outside the Federal Ozone Nonattainment Area.
  - (h) Any Internal Combustion Engine registered with a Statewide Portable Equipment Registration (PERP), provided that the Internal Combustion Engine is operating in compliance with the *Regulation to Establish a Statewide Portable Equipment Registration Program*, Title 13 CCR 2450, and for which the Internal Combustion Engine does not require a local District Permit.
- (2) Any Facility claiming any of the above exemptions shall maintain the following records and documentation for compliance determination. These records and documentation must be readily available, and be made available to the District upon request:
  - (a) Documentation from the manufacturer that documents the rated brake horsepower of the Internal Combustion Engine, such as:
    - (i) Manufacturer specification documents; and/or,
    - (ii) Manufacturer nameplate that is affixed to the engine.

- (b) Records of the monthly operation in terms of hours.
  - (i) The hours of operation must be documented from a non-resettable, four-digit (9,999), hour timer that is installed and maintained on the Internal Combustion Engine to indicate elapsed engine operating time.
  - (ii) The monthly operation records must be retained for a period of at least five (5) years.
  
- (c) Documentation that demonstrates that the Internal Combustion Engine is subject to the *Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines rated at 50 Horsepower and Greater*, Title 17 CCR 93116.; or, that the Internal Combustion Engine is otherwise classified as a Portable Internal Combustion Engine, as follows:
  - (i) A District permit for the Internal Combustion Engine that designates the requirements of the above regulation; and/or, designates the Internal Combustion Engine as a Portable Internal Combustion Engine.
  
- (d) Documentation that demonstrates that the Internal Combustion Engine is an Emergency Internal Combustion Engine, as follows:
  - (i) A District permit for the Internal Combustion Engine that designates the requirements of emergency use; and, designates the Internal Combustion Engine is an Emergency Internal Combustion Engine.
  
- (e) Documentation that demonstrates that the Internal Combustion Engine operates on an engine test stand as follows:
  - (i) A District permit for the Internal Combustion Engine that designates the requirements of an engine test stand, and designates the Internal Combustion Engine is an Internal Combustion Engine operating on a test stand.
  
- (f) Documentation that demonstrates that the Internal Combustion Engine is subject to District Rule 1160.1 – *Internal Combustion Engines in Agricultural Operations*, as follows:
  - (i) A District permit for the Internal Combustion Engine that designates the requirements of District Rule 1160.1 – Internal Combustion Engines in Agricultural Operations; or,
  - (ii) A District agricultural engine registration for the Internal Combustion Engine that designates the requirements of District Rule 1160.1 – *Internal Combustion Engines in Agricultural Operations*.

- (g) Documentation that demonstrates the Internal Combustion Engine is located outside the Federal Ozone Nonattainment Area; as follows:
  - (i) A District permit for the Internal Combustion Engine that designates the address of operation.
- (h) Documentation that the Internal Combustion Engine has a Statewide Portable Equipment Registration (PERP), as follows:
  - (i) A copy of the valid PERP registration; and,
  - (ii) A valid PERP registration sticker affixed to the Internal Combustion Engine.

## (E) Monitoring and Recordkeeping Requirements

### (1) Monitoring

- (a) The owner or operator of any Internal Combustion Engine subject to this rule must:
  - (i) Conduct inspections, whichever is the more frequent of, at least once every calendar quarter; or, after every 2,000 hours of engine operation.
    - a. An inspection includes any testing, maintenance, and/or other procedures that ensure the Internal Combustion Engine is operated in strict accordance with the manufacturer's specifications and in continual compliance with the provisions of this rule. Each inspection must include the following:
      1. Date.
      2. Records of testing, as applicable.
      3. Records of maintenance.
  - (ii) Install and maintain a non-resettable, four-digit (9,999), hour timer to indicate elapsed engine operating timer.
- (b) The owner or operator of any Internal Combustion Engine equipped with existing Emission Control Equipment or required to install Emissions Control Equipment to achieve compliance with this rule shall:
  - (i) Install, operate, and maintain in calibration, the following monitoring equipment, as approved by the APCO:
    - a. Continuous measurement and recording of Emissions Control System Operating Parameters;
    - b. Continuous measurement and recording of elapsed time of operation; and,
    - c. An Enhanced Emissions Monitoring Device.
  - (ii) Compliance shall be verified at least once in every twelve (12) month period by an emissions compliance test.

- a. Testing frequency may be reduced per the following provisions:
    - 1. If a compliance test demonstrates compliance with the provisions of this rule, the frequency of the compliance test may be extended to once every twenty-four (24) months.
    - 2. Failure of a compliance test or failure to complete the compliance test within the required frequency resets the compliance test frequency to at least once in every twelve (12) month period.
  - b. At a minimum, emissions compliance testing shall be conducted for NO<sub>x</sub>, VOC, CO and oxygen (O<sub>2</sub>) levels in compliance with the provisions of the MDAQMD Compliance Test Procedural Manual.
- (c) The owner or operator of any Internal Combustion Engine, without Emission Control Equipment, that complies with this rule shall demonstrate compliance with either section (E)(1)(c)(i), or (c)(ii) and (iii):
- (i) Demonstrate compliance, as verified via USEPA Certification, CARB Executive Order, and/or District-approved test results, certifying the engine was tested in accordance with 40 CFR Part 1065 and that the engine:
    - a. Conforms to CARB and/or USEPA emission requirements; and,
    - b. The engine emission rates meet the applicable requirements in Section (C)(1)(a), (C)(1)(b), and (C)(1)(c) above; and,
    - c. Is verified by the operation of an Enhanced Emissions Monitoring Device.
  - (ii) Demonstrate initial compliance; by completing a compliance test for NO<sub>x</sub>, VOC, CO and oxygen (O<sub>2</sub>) levels within 180 days of permit issuance in accordance with the MDAQMD Compliance Test Procedural Manual; and
  - (iii) Demonstrate continued compliance by conducting a compliance test for NO<sub>x</sub>, VOC, CO and oxygen (O<sub>2</sub>) levels every 60 months, or 8760 hours of operation, whichever comes first, in accordance with the MDAQMD Compliance Test Procedural Manual.
- (d) Compliance verification, as specified in subsections (E)(1)(b) and/or (E)(1)(c) shall be satisfied:
- (i) Within 180 days of the date of rule adoption; or
  - (ii) Within 180 days of the installation of an Emission Control Equipment; or
  - (iii) Within 180 days of an Internal Combustion Engine becoming subject to this rule, whichever is later.

(2) Recordkeeping Requirements

- (a) The owner/operator of any engine subject to the provisions of Section (C) of this rule shall maintain a log for each Internal Combustion Engine containing, at a minimum, the following data:
- (i) District Permit number, unit identification number, and Emissions Control Equipment identification number, when applicable.
  - (ii) Quarterly fuel use and quarterly hours of operation, on a calendar quarter basis.
  - (iii) The date and a summary of any emissions corrective maintenance taken.
- (b) The owner/operator shall maintain the records, on site, for a period of five (5) years, and shall be readily available, to the District upon request.

(F) Test Methods

Compliance with the requirements of section (C) shall be determined, as required, in accordance with the following test procedures or any other method approved by USEPA and the APCO:

- (1) Oxides of nitrogen - USEPA Method 7E, or ARB Method 100.
- (2) Carbon monoxide - USEPA Method 10, or ARB Method 100.
- (3) Stack gas oxygen - USEPA Method 3 or 3A, or ARB Method 100.
- (4) Volatile organic compounds - USEPA Method 18, 25A or 25B, or ARB Method 100.
- (5) Determination of the exempt compounds, shall be performed in accordance with ASTM Test Method D 4457-85 (Solvents and Coatings) and be consistent with the provisions set forth in the Federal Register (FR, Vol. 56, No. 52, March 18, 1991). Perfluorocarbon compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies a specific compound or compounds from the broad classes of perfluorocarbons listed in 40 CFR 51.100(s)(1) as being present in the product or process. When such compounds are identified, the facility shall provide the test method to determine the amount(s) of the specific compound(s).

(G) Compliance Schedule

- (1) Any Facility and/or owner/operator with Internal Combustion Engines subject to this rule must comply with this rule as of the date of the latest amendment.

See SIP Table at <http://www.mdaqmd.ca.gov>