

2.3.2 STATIONARY NATURAL GAS ENGINES

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Process Description

Stationary natural gas engines are generally reciprocating engines used in the natural gas industry at pipeline compressor and storage stations and at gas processing plants. However, recently, they have also been used as prime or emergency standby sources of power. Additional background information is available from Chapters [3.2 Natural Gas-fired Reciprocating Engines](#) of [AP-42 \(Fifth Edition, Volume I\)](#).

Exempt Engines – The following engines are exempt from District permitting requirements (Regulation 2-1-301 and 2-1-302):

1. IC engines which are less than or equal to 50 HP (exempt per [Regulation 2-1-114.2.1](#));
2. IC engines used for instructional purposes at research, teaching, or educational facilities (exempt per [Regulation 2-1-114.2.2](#));
3. portable IC engines which are at a location for less than 72 consecutive hours (exempt per [Regulation 2-1-114.2.3](#));
4. any engine mounted on, within, or incorporated into any vehicle, train, ship, boat, or barge used to provide propulsion for the vehicle, train, ship or barge (exempt per [Regulation 2-1-114.2.4](#)); and
5. any engine mounted on, within, or incorporated into any vehicle, train, ship, boat, or barge, used to provide propulsion for any vehicle, train, ship or barge, and which is also used to supply mechanical or electrical power to ancillary equipment, which is affixed to or is a part of the vehicle, train, ship, boat, or barge (exempt per [Regulation 2-1-114.2.5](#))

Completeness Determination

The following District forms should be completed and fees provided for stationary natural gas engines. Use the [Completeness Determination Checklist](#) to verify completeness. Use the [Data Form Guidance](#) to ensure that the forms are completed correctly. Use the [Fee Calculation Guidance](#) to ensure that the fees are calculated accurately.

1. [Form 101-B](#) (one for facility). CARB-certified data, then [EPA-certified emission data](#).
2. [Form ICE](#) (1 per engine).
3. Manufacturer specification data including: fuel consumption, rated horsepower output, emission rates for NO_x, CO, hydrocarbons (VOC) and particulate.
5. If Health Risk Screening is triggered, [Form HRSA](#) (one per source).
6. Fees, calculated per [Regulation 3 \(Schedule B\)](#)
4. [CARB-certified emission data](#) or if no

Emission Calculations

The primary pollutants from natural gas engines are the products of combustion, including oxides of nitrogen (NO_x), hydrocarbon and other organic compounds (POC), carbon monoxide (CO), sulfur dioxide (SO₂), and particulate (PM₁₀). In calculating these emissions, emission factor data from the manufacturer may be used to estimate emissions for NO_x, CO, POC, SO₂, and PM₁₀. In addition, manufacturer or actual source test data, if available, may be used to estimate emissions of toxic pollutants.

The permit engineer may choose the most representative emission factors to calculate emissions. For toxic emissions, emissions factors from CATEF are generally preferred over those found in AP-42."

In addition, emission factors for criteria and toxic pollutants can be found in [EPA AP-42, Chapter 3.2 Natural Gas-fired Reciprocating Engines](#) and the [California Air Toxics Emission Factors \(CATEF\) database](#) (Internal Combustion Engines; Natural Gas). The permit engineer may choose the most representative emission factors to calculate emissions. For toxic emissions, emissions factors from CATEF are generally preferred over those found in AP-42. The emission factors should reflect any add-on abatement by reducing the emission factor by the abatement efficiency of the add-on device.

Applicable Requirements

District Rules and Regulations

Stationary natural gas engines are subject to the Ringelmann No. 2 limitations of [Regulation 6-303](#) (emissions opacity limitations). Properly operated and maintained engines are expected to meet this

requirement. In addition, natural gas engines are subject to the emission requirements of [Regulations 9-8-301](#).

BACT

BACT for stationary natural gas engines is specified in the [BACT/TBACT Workbook](#). The following are the applicable BACT requirements for natural gas engines:

- [I. C. Engine - Spark Ignition, Natural Gas Fired Rich Burn Engine](#)
- [I. C. Engine - Spark Ignition, Natural Gas Fired Lean Burn Engine](#)
- [I. C. Engine - Spark Ignition, Natural Gas Fired Emergency Engine](#)

Inform the [BACT Coordinator](#) of updates to the BACT/TBACT Workbook.

CEQA

Permit applications which are reviewed following the specific procedures, fixed standards and objective measurements set forth in this chapter (2.3.2) are classified as ministerial and will accordingly be exempt from CEQA review per [Regulation 2-1-311](#).

In addition to the above-mentioned source-specific applicable requirements, other requirements may also be applicable depending on the facility, its application emissions, and its source location:

- Offsets
- School Notification
- Prevention of Significant Deterioration
- Risk Screening Analysis

Permit Conditions

Standardized conditions for stationary natural gas engines are available from the [Permit Condition Guidance](#). Refer to the [Evaluation Report Template Guidance](#) to obtain the Microsoft Word formatted permit conditions for this source category.