



# CLARIFICATION OF PERMIT REQUIREMENTS FOR NATURAL GAS/PROPANE (LPG) INTERNAL COMBUSTION ENGINES SERVING ELECTRICAL GENERATORS & WATER PUMPS

## Equipment Applicability

This advisory contains clarifications of the permit requirements for natural gas/propane internal combustion (IC) engines serving generators and water pumps to be operated within the Monterey, Santa Cruz and San Benito Counties.

## Definition of Emergency Natural Gas/Propane Engines Serving Generators & Water Pumps

Standby engines are defined as emergency when serving electrical generators and water pumps only when used in the event that normal utility powerline service fails or in the event of an involuntary power interruption or unforeseen disruption in utility service planned by the local utility. These units are limited to 60 hours per year of operation for test/exercise purposes, and may be stationary or portable.

## Permit Requirements

Any natural gas/propane engine with a rating of 50 horsepower (Hp) or greater requires a District Permit (emergency and non-emergency). Portable engines that are registered under California Code of Regulations Title 13, Article 5, Sections 2450 through 2465 (Portable Equipment Registration Program - PERP) may be exempt from District permits unless the engine is used with stationary equipment that requires a District permit, remains at one location for more than one year, or does not meet the requirements specified in the District *PERP Eligibility Policy at Stationary Sources*.

## Best Available Control Technology (BACT)

The District’s rules require that we calculate emissions in two ways: (1) each piece of equipment subject to permitting and (2) the entire facility, to determine whether Best Available Control Technology (BACT) is required. For example, each engine with a potential to emit of 25 lbs/day or greater of oxides of nitrogen (NOx), or Volatile Organic Compounds (VOC) is subject to BACT. Also, if the total emissions from all permit units at a stationary source has a potential to emit of 150 lbs/day or greater of NOx, then the source is subject to the BACT requirements. A complete list of stationary source BACT thresholds can be found in Table 4.1.1 of District Rule 207, Review of New or Modified Sources, <https://www.arb.ca.gov/drdb/mbu/curhtml/R207.PDF>.

The District has set BACT requirements for the following IC engine applications: a) Stationary, Emergency, b) Stationary, Non-Emergency, Non-Electrical Generators, and c) Stationary Non-Emergency, Electrical Generators. The BACT emission standards for each category are provided in the following Tables 1-3:

<b>Table 1: BACT GUIDELINES FOR STATIONARY, EMERGENCY IC ENGINES</b>			
Engine Rating/Size	NO <sub>x</sub>	VOC	CO
< 130 HP	1.5 g/bhp-hr, or 86 ppmvd @ 15% O <sub>2</sub>	1.5 g/bhp-hr, or 244 ppmvd @ 15@ O <sub>2</sub>	2.0 g/bhp-hr, or 186 ppmvd @15% O <sub>2</sub>
≥ 130 HP	1.5 g/bhp-hr, or 86 ppmvd @ 15% O <sub>2</sub>	1.0 g/bhp-hr, or 163 ppmvd @ 15@ O <sub>2</sub>	2.0 g/bhp-hr, or 186 ppmvd @15% O <sub>2</sub>

<b>Table 2: BACT GUIDELINES FOR STATIONARY, NON-EMERGENCY, NON-ELECTRICAL GENERATOR IC ENGINES</b>			
Engine Rating/Size	NO <sub>x</sub>	VOC	CO
≥ 50 HP	0.15 g/bhp-hr, or 9 ppmvd @ 15% O <sub>2</sub>	0.15 g/bhp-hr, or 25 ppmvd @ 15@ O <sub>2</sub>	0.60 g/bhp-hr, or 56 ppmvd @15% O <sub>2</sub>

<b>Table 3: BACT GUIDELINES FOR STATIONARY, NON-EMERGENCY, ELECTRICAL GENERATOR IC ENGINES</b>			
Engine Rating/Size	NO <sub>x</sub>	VOC	CO
≥ 50 HP and <2,064 HP (for all engines not included in any categories described below)	0.07 g/bhp-hr, or 5 ppmvd @ 15% O <sub>2</sub>	0.15 g/bhp-hr, or 25 ppmvd @ 15@ O <sub>2</sub>	0.60 g/bhp-hr, or 56 ppmvd @15% O <sub>2</sub>
Four Stroke Lean Burn > 500 HP and < 2064 HP			0.51 g/bhp-hr, or 47 ppmvd @15% O <sub>2</sub>
≥ 2,064 HP			0.35 g/bhp-hr, or 33 ppmvd @ 15% O <sub>2</sub>

BACT for SO<sub>x</sub> and PM for all categories is the exclusive use of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases.

**Offsets**

Stationary sources may also be subject to District offset requirements. Offsets are an emissions reduction necessary to mitigate an emissions increase of an affected pollutant and are required from a new or modified stationary source that has the potential to emit greater than or equal to the 137 lbs/day of NO<sub>x</sub> or VOCs. A stationary source may be exempt from offsets if the facility’s actual emissions are less 10 tons/year.

**Federal Standards for Stationary Reciprocating Internal Combustion Engines**

In addition to the above requirements, facilities must also comply with the USEPA’s requirements for reciprocating internal combustion engines (RICE). The District implements and enforces these Federal rules in conjunction with other State and local regulations. The Federal rules that apply to natural gas/LPG engines include:

- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines, NESHAP - Subpart ZZZZ. Subpart ZZZZ applies to all existing engines. Engines greater than 500 Hp at major sources are defined as existing if construction or reconstruction commenced before December 19, 2002. Engines less than or equal to 500 Hp at a major source of Hazardous Air Pollutants (HAP), and engines of all Hp located at an area source of HAPs are defined as existing if construction or reconstruction commenced before June 12, 2006.

Existing emergency engines located at residential, institutional, or commercial area sources are exempt from the provisions of the stationary reciprocating internal combustion engine NESHAP.

- New Source Performance Standards (NSPS). Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion (IC) Engines (IC), NSPS - Subpart JJJJ. Subpart JJJJ applies to new SI IC engines, and potentially SI IC engines constructed, modified or reconstructed after June 12, 2006. Engines determined

to be subject to Subpart JJJJ must be certified to the appropriate emission standards as defined by the rule. Determination of emissions standards are based upon a variety of parameters, i.e. fuel type, rich burn vs. lean burn, horsepower of engine, and date of manufacture.

**Additional Information**

Should you have any questions regarding the permit applicability for your engine-driven generators and water pumps, please contact the District's Engineering Division at (831) 647-9411. The Engineering Division can also provide you with permit application forms and permit application fee sheets to commence the permitting process for your proposed facility.

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