



## MONTEREY BAY AIR RESOURCES DISTRICT

24580 Silver Cloud Court, Monterey, CA 93940

---

# CLARIFICATION OF PERMIT REQUIREMENTS FOR STATIONARY NON-AGRICULTURAL DIESEL ENGINES

Updated January 24, 2023 to clarify emergency engine BACT guidelines.

### **Equipment Applicability**

This advisory contains clarifications of the permit requirements for diesel internal combustion (IC) engines serving generators, compressors, water pumps and other various equipment to be operated within the Monterey, Santa Cruz, and San Benito Counties.

For information on registering diesel engines utilized in agricultural operations, see the following link: <https://www.mbard.org/agricultural-ag-engine-registration>

### **Definition of Emergency Diesel 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. The engines have limits on the number of hours the units are allowed to operate for maintenance & testing purposes. The hour limits are based on the engine's emissions profile and are imposed by the California Code of Regulations Title 17 Section 93115 – Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines, and as outlined in Monterey Bay Air Resources District (MBARD) Rule 1010, *ATCM for Stationary Compression Ignition Engines*.

### **Definition of Emergency Diesel Engines Serving Direct-Drive Fire Pumps**

Direct-drive standby fire pump engines are defined as emergency when exclusively used in water-based fire protection systems. The engines have limits on the number of hours necessary to comply with the testing requirements of National Fire Protection (NFPA) 25, *Standards for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

### **Permit Requirements**

Any diesel engine with a rating of 50 horsepower (Hp) or greater requires a MBARD 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 MBARD permits unless the engine is used with stationary equipment that requires a MBARD permit, remains at one location for more than one year, or does not meet the requirements specified in MBARD's [PERP Eligibility Policy at Stationary Sources](#).

### **Engine Requirements**

Emergency-Standby Engines:

All new emergency-use engines shall be a certified engine that emits diesel PM at a rate less than or equal to 0.15 g/bhp-hr. In addition, engines rated  $50 \leq \text{HP} < 750$  must be certified to meet the CARB or EPA Off-Road Tier 3 standards for NMHC + NO<sub>x</sub>, and CO, and engines rated  $\geq 750$  HP must be certified to meet the

CARB or EPA Tier 2 standards for NMHC + NO<sub>x</sub>, and CO.

**Direct-Drive Emergency-Standby Fire Pump Engines:**

New direct-drive emergency-standby fire pump engines rated  $50 \leq \text{HP} < 100$  shall be a certified engine that emits diesel PM at a rate less than or equal to 0.30 g/bhp-hr. New emergency-use engines rated  $100 \leq \text{HP} < 175$  shall be a certified engine that emits diesel PM at a rate less than or equal to 0.22 g/bhp-hr. New emergency-use engines rated  $\geq 175$  HP shall be a certified engine that emits diesel PM at a rate less than or equal to 0.15 g/bhp-hr. In addition, engines rated  $50 \leq \text{HP} < 750$  must be certified to meet the CARB or EPA Off-Road Tier 3 standards for NMHC + NO<sub>x</sub>, and CO, and engines rated  $\geq 750$  HP must be certified to meet the CARB or EPA Tier 2 standards for NMHC + NO<sub>x</sub>, and CO.

**Prime-Use Engines:**

All new prime-use engines must meet the Tier 4 emission standards by one of the following two options:

Option 1 - Engine must be certified to the CARB or EPA Off-Road Tier 4 standards; or

Option 2 - Engine must be certified to the CARB or EPA Tier 2 or Tier 3 Off-Road standards, meeting 0.15 g PM/bhp-hr equipped with a CARB Level 3 Verified Diesel Emission Control Technology, and meeting Tier 4 emission standards for NO<sub>x</sub>, CO, and VOC with a CARB approved emission control technology. Source testing will be required for engines meeting standards via option 2.

**Best Available Control Technology (BACT)**

MBARD'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 (NO<sub>x</sub>), 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 150 lbs/day or greater of NO<sub>x</sub>, 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 MBARD Rule 207, Review of New or Modified Sources.

<https://ww2.arb.ca.gov/sites/default/files/classic/technology-clearinghouse/rules/RuleID1615.pdf>.

MBARD has set BACT requirements for the following IC engine applications: a) Stationary Emergency Engines at Non-Major Sources, b) Stationary Emergency Direct-Drive Fire Pump Engines at Non-Major Sources, c) Stationary Emergency Engines at Major Sources, and d) Stationary Non-Emergency Engines. The BACT emission standards for each category are provided in the following Tables 1 - 4.

**NOTE: When selecting an engine, applicants for an emergency engine located at Non-Major Sources are advised that the BACT requirements for Stationary Emergency Engines at Major Sources may be required to address risk reduction measures mandated by the California Air Resources Board (CARB) *Air Toxic "Hot Spots" Information and Assessment Act of 1987*. More information on CARB's Air Toxic "Hot Spots" program can be found on the following MBARD's webpage: <https://www.mbard.org/air-toxics>.**

**Table 1. BACT GUIDELINES FOR STATIONARY EMERGENCY ENGINES AT NON-MAJOR SOURCES**

Engine Rating/Size	PM	NO <sub>x</sub> + NMHC	CO
50 ≤ HP < 100	0.15 g/bhp-hr, or 0.20 g/kW-hr	3.5 g/bhp-hr, or 4.7 g/kW-hr	3.7 g/bhp-hr, or 5.0 g/kW-hr
100 ≤ HP < 175	0.15 g/bhp-hr, or 0.20 g/kW-hr	3.0 g/bhp-hr, or 4.0 g/kW-hr	3.7 g/bhp-hr, or 5.0 g/kW-hr
175 ≤ HP < 750	0.15 g/bhp-hr, or 0.20 g/kW-hr	3.0 g/bhp-hr, or 4.0 g/kW-hr	2.6 g/bhp-hr, or 3.5 g/kW-hr
≥750	0.15 g/bhp-hr, or 0.20 g/kW-hr	4.8 g/bhp-hr, or 6.4 g/kW-hr	2.6 g/bhp-hr, or 3.5 g/kW-hr

**Table 2. BACT GUIDELINES FOR STATIONARY EMERGENCY DIRECT-DRIVE FIRE PUMP ENGINES AT NON-MAJOR SOURCES**

Engine Rating/Size	PM	NO <sub>x</sub> + NMHC	CO
50 ≤ HP < 100	0.30 g/bhp-hr, or 0.40 g/kW-hr	3.5 g/bhp-hr, or 4.7 g/kW-hr	3.7 g/bhp-hr, or 5.0 g/kW-hr
100 ≤ HP < 175	0.22 g/bhp-hr, or 0.30 g/kW-hr	3.0 g/bhp-hr, or 4.0 g/kW-hr	3.7 g/bhp-hr, or 5.0 g/kW-hr
175 ≤ HP < 750	0.15 g/bhp-hr, or 0.20 g/kW-hr	3.0 g/bhp-hr, or 4.0 g/kW-hr	2.6 g/bhp-hr, or 3.5 g/kW-hr
≥750	0.15 g/bhp-hr, or 0.20 g/kW-hr	4.8 g/bhp-hr, or 6.4 g/kW-hr	2.6 g/bhp-hr, or 3.5 g/kW-hr

**Table 3. BACT GUIDELINES FOR STATIONARY EMERGENCY ENGINES AT MAJOR SOURCES<sup>a</sup>**

Engine Rating/Size	PM	NO <sub>x</sub>	NO <sub>x</sub> + NMHC	NMHC	CO
50 ≤ HP < 1000 Engines Other Than Direct Drive Fire Pump Engines	Emergency Engines other than Direct-Drive Fire Pump Engines – See Table 1				
50 ≤ HP < 1000 Direct Drive Fire Pump Engines	Emergency Engines Serving Direct-Drive Fire Pumps – See Table 2				
HP ≥ 1000 Non-Generators	0.03 g/bhp-hr 0.04 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr
HP ≥ 1,000 Generators	0.02 g/bhp-hr, 0.03 g/kW-hr	0.50 g/bhp-hr, 0.67 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr

<sup>a</sup> A facility classifies as a Major Source if 1) it emits equal or greater than 100 tons per year of any air pollutant except greenhouse gases, 10 tons per year of any hazardous air pollutant (HAP), or 25 tons per year of any combination of HAPs, or 2) any acid rain source, as defined by Title IV of the Federal Clean Air Act, or 3) any solid waste incinerator that must comply with Section 129(e), or 4) any other stationary source or category of sources deemed to require a Federal Operating Permit (FOP) by US EPA.

**Table 4. BACT GUIDELINES FOR STATIONARY NON-EMERGENCY ENGINES**

Engine Rating/Size	PM	NO <sub>x</sub>	NO <sub>x</sub> + NMHC	NMHC	CO
50 ≤ HP < 75	0.02 g/bhp-hr, 0.03 g/kW-hr		3.5 g/bhp-hr, 4.7 g/kW-hr		3.7 g/bhp-hr, 5.0 g/kW-hr
75 ≤ HP < 100	0.01 g/bhp-hr, 0.02 g/kW-hr	0.30 g/bhp-hr, 0.40 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	3.7 g/bhp-hr, 5.0 g/kW-hr
100 ≤ HP < 175	0.01 g/bhp-hr, 0.02 g/kW-hr	0.30 g/bhp-hr, 0.40 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	3.7 g/bhp-hr, 5.0 g/kW-hr
175 ≤ HP < 750	0.01 g/bhp-hr, 0.02 g/kW-hr	0.30 g/bhp-hr, 0.40 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr
HP ≥ 750 Non-Generators	0.03 g/bhp-hr 0.04 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr
750 < HP ≤ 1,207 Generators	0.02 g/bhp-hr, 0.03 g/kW-hr	0.50 g/bhp-hr, 0.67 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr
HP > 1,207 Generators	0.02 g/bhp-hr, 0.03 g/kW-hr	0.50 g/bhp-hr, 0.67 g/kW-hr		0.14 g/bhp-hr, 0.19 g/kW-hr	2.6 g/bhp-hr, 3.5 g/kW-hr

BACT for SO<sub>x</sub> for all categories is the exclusive use of CARB diesel fuel.

**Offsets**

Stationary sources may also be subject to MBARD 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 than 10 tons/year. Emergency engines are exempt from the offsetting requirements.

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

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

- New Source Performance Standards (NSPS). Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion (IC) Engines, NSPS - Subpart IIII.

**CARB Emission Inventory Reporting Requirements:**

Facilities will be required to submit annual criteria and toxics emissions data to support the State mandates of AB 617 and AB 2588 for the following two regulations, *Regulation for the Reporting of Criteria Air Pollutants and Toxic Air Contaminants (CTR)* and the *Air Toxic “Hot Spots” Information and Assessment Act of 1987*, respectively. The purpose of the "Hot Spots" program is to not only collect emissions data, but to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to an acceptable level. The following links to the CARB website

are provided if you would like further information on each of these programs: [AB 617 Criteria and Toxics Reporting](#), & [AB 2588 Air Toxic "Hot Spots"](#)

**Additional Information**

Should you have any questions regarding the permit applicability for your engine-driven generators, compressors and water pumps, please contact MBARD'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.

O:\ENG\Web Pages\Engines\Clarification of Permit Requirements for CI Engines\_01.24.2023.docx