

# Policy: When to Require Initial/Startup Source Testing for Stationary Diesel Engines

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**Policy** An initial/startup source test is required for a stationary diesel engine that has not demonstrated compliance with applicable Airborne Toxic Control Measure (ATCM) emission standards or abatement percentage requirements by at least one of the following:

- CARB Certification
  - EPA Certified Tier Engine
  - CARB Verified Level 1, 2, or 3 Abatement Device
  - ISO 8178 D2 Source Test
  - Alternative source test approved by BAAQMD (See Alternative Load Testing)
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**Policy on Source Test Method** When a source test is required, ISO 8178 D2 (5-mode) field test loads shall be required unless both of the following are demonstrated:

- It is not feasible to conduct a multiple load test; and
- An alternate load test is more representative of typical engine operation.

The alternate load test shall be performed at the typical engine loads in triplicate.

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**Effective date** April 18, 2007

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**Background** This policy supersedes the 4/18/07 policy memo (Subject: When to Require Source Testing for Stationary Diesel Engines to Demonstrate Compliance with the Stationary CI Engine ATCM).

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**Definitions** The following is a list of associated definitions.

- **CI Engine** – Compression Ignition Engine is an internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle.
- **PM** – particulate matter consists of particles found in the exhaust of CI engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.

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### Definitions (continued)

- **ATCM** – [Airborne Toxic Control Measure](#).
- **EPA Certified Tier Engine** – A CI engine that is certified to meet the Tier 1, Tier 2, Tier 3, or Tier 4 Off-Road CI Certification Standards as specified in title 13, California Code of Regulations, section 2423. See also "Certified Engine" in [Section 93115.4 ATCM for Stationary CI Engines](#).
- **CARB Certification** – A certification for an engine or engine family in the form of an CARB Executive Order which lists the engine family name, the Executive Order number, the model year of the engine, the make and model, the applicable EPA Tier emissions limitations, the certified emission factors, and the test mode used to develop the certification numbers. CARB Certifications can be found in the [CARB off-road certification database](#).
- **ISO 8178 D2 Field Test** – A test that was conducted in accordance with the ISO 8178 D-2 (5 mode) cycle. To conduct this test, diesel PM samples are taken at the following % torque at constant speed: 10%, 25%, 50%, 75%, 100%. Best results are obtained in a laboratory setting where conditions are more easily controlled and variables kept to a minimum. Field tests are performed at or near the previous torque loads and specific weighting factors applied to determine overall g/bhp-hr.
- **CARB Verified Level 1 Abatement Device** – A control device which has been evaluated and determined to achieve 25% or greater (but less than 50%) of diesel PM emission reductions over uncontrolled levels.
- **CARB Verified Level 2 Abatement Device** – A control device which has been evaluated and determined to achieve 50% or greater (but less than 85%) of diesel PM emission reductions over uncontrolled levels.
- **CARB Verified Level 3 Verified Device** – Mean a control device which has been evaluated and determined to achieve at least 85% of diesel PM emission reductions over uncontrolled levels or less than 0.01 g/bhp-hr diesel PM emission level.
- **HC** – Hydrocarbon is the sum of all hydrocarbon air pollutants.
- **NOx** – Nitrogen Oxides are compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen, which are typically created during combustion processes.
- **CO** – Carbon Monoxide is a colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels.

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**Document Control**

Version	Revised By	Description	Date
1.1	REF	New Policy: When to Require Source Testing for Stationary Diesel Engines to Demonstrate Compliance with the Stationary CI Engine ATCM	4/18/07
1.2	REF	Updating Policy	6/12/207
1.3	MCL	Mapping of Policy	3/13/08

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**Approval**

Name & Title	Signature	Date
Brian Bateman, Director of Engineering	<b>Signed by Brian Bateman</b>	02/28/2008

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