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COMPLIANCE ASSISTANT FACT SHEET FOR AIRBORNE TOXIC CONTROL MEASURE (ATCM) FOR STATIONARY COMPRESSION IGNITION ENGINES

The California Air Resources Board (ARB) adopts airborne toxic control measures (ATCM) to reduce emissions of toxic air contaminants (TAC). ARB adopted an ATCM for Stationary Compression-Ignition (CI) Engines (17 CCR §93115) on February 26, 2004 to control diesel particulate matter (PM), which was declared a TAC in 1998. The ATCM became effective on December 8, 2004. This ATCM applies to all existing stationary diesel-fueled engines greater than 50 bhp installed before January 1, 2005 and all new stationary diesel engines installed on or after January 1, 2005.

What is the purpose of this ATCM?

The purpose of this ATCM is to protect public health by reducing emissions of diesel particulate matter (PM). The goal is to reduce overall diesel PM in 2020 from this source category by 80% from 2002 baseline emissions. Diesel PM poses a high risk for cancer and other adverse health effects.

Am I subject to this ATCM?

- 1) You are subject to this ATCM if you own or operate a stationary compression ignition (diesel-fueled) engine greater than 50 brake horsepower that is either:
 - a) an emergency engine,
 - b) a non-emergency (prime) engine, or
 - c) a new agriculture engine.
- 2) You are also subject to this ATCM if you sell, lease, or purchase or offer for sale or lease a diesel-fueled engine for use in California after January 1, 2005.

What is a stationary engine?

A stationary engine is an engine that is attached to a foundation or remains at any single site at a facility for more than 12 consecutive months. An engine located at a seasonal source that operates for the entire season at least two years in a row is considered a stationary engine. An engine that is moved from one location to another in an attempt to circumvent the 12-month time requirement is considered a stationary engine.

The District defines stationary slightly different than it is defined in this ATCM. An engine may have a stationary engine permit, but not be subject to the stationary diesel engine ATCM. An engine that moves around a facility, but that does not leave that facility will have a stationary permit from the District but is considered portable for the purposes of the ATCM.

What is a prime engine?

A prime engine is any engine that is not an emergency engine or an engine used in agricultural operations.

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What is a new engine?

A new engine, for the purposes of this ATCM, is an engine installed at a facility after January 1, 2005. The exceptions to this include:

- 1) An engine approved by the District for installation prior to December 8, 2004,
- 2) A replacement engine, for an engine undergoing maintenance, installed temporarily,
- 3) An engine relocated prior to January 1, 2008, to an offsite location owned by the same owner, if the owner owns at least four engines,
- 4) An engine relocated within the same facility, or
- 5) An agricultural engine relocated to an offsite location owned by the same owner.

What is an in-use engine?

An in-use engine is any engine that is not new.

When must I comply with the emission standards in the ATCM?

- 1) All new engines must comply at the time of installation.
- 2) For in-use engines complying solely by limiting the number of hours of operation for nonemergency purposes, compliance is required by January 1, 2006. Otherwise, for other in-use engines, compliance occurs between January 1, 2006 and January 1, 2009 depending on the model year of the engine and how many engines subject to the regulation are owned or operated by a single entity in San Diego County. Owners or operators of 3 or less engines in San Diego County must comply by:
 - a) January 1, 2006 for model year engines 1989 or earlier,
 - b) January 1, 2007 for model year engines 1990-1995, and
 - c) January 1, 2008 for model year engines 1996 and later.

Owners or operators of 4 or more engines must follow the compliance schedule in the following table.

Compliance Dates for Owners or Operators with 4 or More Engines Using and Emission Control Strategy			
Compliance Date	Model year 1989 & before	Model year 1990-1995	Model year 1996 & later
	(percent in compliance)		
January 1, 2007	50%	30%	0%
January 1, 2008	75%	60%	50%
January 1, 2009	100%	100%	100%

Are there any exemptions to the standards?

There are several types of engines exempt from the diesel particulate matter standards of the rule. In some cases, the exemption requires District approval. The following are some important exemptions:

- 1) New engines exempt from all emission standards includes:
 - a) dual-fueled engines using < 5% diesel fuel in combination with digester or landfill gas and
 - b) engines used for training DOD personnel.
- 2) In-use engines exempt from all emission standards includes:
 - a) dual-fueled engines using < 5% diesel fuel in combination with an alternative fuel; digester or landfill gas, or an alternative diesel fuel,
 - b) engines equipped with a selective catalytic reduction systems (SCR),

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- c) emergency engines located at a nuclear facility, and
 - d) prime engines operating < 20 hrs/year.
 - e) engines used for training DOD personnel.
 - f) direct-drive fire pump engines.
- 3) An owner/operator may also request a delay in implementation for remotely located prime engines.

With what diesel particulate matter (PM) standard must I comply?

- Emergency engines must meet diesel PM standards depending on how many hours per year an engine needs to operate for maintenance and testing (M&T) or other non-emergency purposes. Use the following tables to determine diesel PM standards for emergency engines.

Diesel PM Standards for Emergency Engine (g/bhp-hr)				
Engine Classification	Allowed Maintenance & Testing Hours per Year			
	0-20	21-30	31-50*	51-100*
In-Use Engines – General	No Limit	0.4	0.15	0.01
New Engines – General	0.15 [‡]	0.15 [‡]	0.15 [‡]	0.01
Enrolled in the RBRP [†] :				
Prior to 1/1/2005	No Limit	0.4	0.15	0.01
1/1/2005 to 12/31/2007	0.15	0.15	0.15	0.01
On or After 1/1/2008	0.01	0.01	0.01	0.01
* Required District approval for more than 30 hours for in-use engine or for more than 50 hours for new engines. [†] Rolling Blackout Reduction Program. [‡] Or the ARB Off-Road CI Engine Certification Standard (Title 13, CCC Section 2423), whichever is more stringent.				

- In-use prime engines must either reduce their diesel PM emissions by 85% or meet an emissions level of 0.01 g/bhp-hr. Alternatively, for in-use prime engines that are not certified in accordance with an Off-Road Compression Ignition Engine Standard, the engine may choose to reduce diesel PM by 30% to comply with the ATCM now and then meet 0.01 g/bhp-hr diesel PM emissions by July 1, 2011.
- New prime engines must have diesel PM emissions of no more than 0.01 g/bhp-hr.
- New Agricultural engines must meet diesel PM standards of 0.15 g/bhp-hr or the current Off-Road Compression Ignition Engine Standard, whichever is more stringent.
- New engines ≤ 50 bhp must meet current Off-Road Compression Ignition Engine Standard for the same maximum rated power.

What are Off-Road Compression Ignition Engine Standards?

The Off-Road Compression Ignition Engine Standards are emission standards for diesel PM, hydrocarbons, nitrogen oxides, and carbon monoxide from compression ignition engines. These emission standards are found in Title 13, California Code of Regulations (CCR), Section 2423. Different standards apply depending on an engine's model year and rated power. For older engines, there are no standards. See the table below for the standards.

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California Air Resources Board (ARB)							
Off-Road Compression Ignition Engine Standards – g/bhp-hr (g/kwh)							
Engine Power	Tier	Year	CO	HC	NMHC + NOx	NOx	PM
hp < 11 (kW < 8)	Tier 1	2000	6.0 (8.0)	-	7.8 (10.5)	-	0.75 (1.0)
	Tier 2	2005	6.0 (8.0)	-	5.6 (7.5)	-	0.6 (0.8)
	Tier 4	2008	6.0 (8.0)	-	5.6 (7.5)	-	0.3 (0.4)
11 ≤ hp < 25 (8 ≤ kW < 19)	Tier 1	2000	4.9 (6.6)	-	7.1 (9.5)	-	0.6 (0.8)
	Tier 2	2005	4.9 (6.6)	-	5.6 (7.5)	-	0.6 (0.8)
	Tier 4	2008	4.9 (6.6)	-	5.6 (7.5)	-	0.3 (0.4)
25 ≤ hp < 50 (19 ≤ kW < 37)	Tier 1	2000	4.1 (5.5)	-	7.1 (9.5)	-	0.6 (0.8)
	Tier 2	2004	4.1 (5.5)	-	5.6 (7.5)	-	0.45 (0.6)
	Tier 4	2008	4.1 (5.5)	-	5.6 (7.5)	-	0.22 (0.3)
		2013	4.1 (5.5)	-	3.5 (4.7)	-	0.022 (0.03)
50 ≤ hp < 100 (37 ≤ kW < 75)	Tier 1	2000	-	-	-	6.9 (9.2)	-
	Tier 2	2004	3.7 (5.0)	-	5.6 (7.5)	-	0.3 (0.4)
	Tier 3	2008	3.7 (5.0)	-	3.5 (4.7)	-	0.3 (0.4)
50 ≤ hp < 75 (37 ≤ kW < 56)	Tier 4	2008	3.7 (5.0)	-	3.5 (4.7)	-	0.22 (0.3)
		2013	3.7 (5.0)	-	3.5 (4.7)	-	0.022 (0.03)
100 ≤ hp < 175 (75 ≤ kW < 130)	Tier 1	2000	-	-	-	6.9 (9.2)	-
	Tier 2	2003	3.7 (5.0)	-	4.9 (6.6)	-	0.22 (0.3)
	Tier 3	2007	3.7 (5.0)	-	3.0 (4.0)	-	0.22 (0.3)
75 ≤ hp < 175 (56 ≤ kW < 130)	Tier 4	2012	3.7 (5.0)	0.14 (0.19)	-	0.3 (0.4)	0.015 (0.02)
175 ≤ hp < 300 (130 ≤ kW < 225)	Tier 1	1996	8.5 (11.4)	1.0 (1.3)	-	6.9 (9.2)	0.4 (0.54)
	Tier 2	2003	2.6 (3.5)	-	4.9 (6.6)	-	0.15 (0.2)
	Tier 3	2006	2.6 (3.5)	-	3.0 (4.0)	-	0.15 (0.2)
300 ≤ hp < 600 (225 ≤ kW < 450)	Tier 1	1996	8.5 (11.4)	1.0 (1.3)	-	6.9 (9.2)	0.4 (0.54)
	Tier 2	2001	2.6 (3.5)	-	4.8 (6.4)	-	0.15 (0.2)
	Tier 3	2006	2.6 (3.5)	-	3.0 (4.0)	-	0.15 (0.2)
600 ≤ hp < 750 (450 ≤ kW < 560)	Tier 1	1996	8.5 (11.4)	1.0 (1.3)	-	6.9 (9.2)	0.4 (0.54)
	Tier 2	2002	2.6 (3.5)	-	4.8 (6.4)	-	0.15 (0.2)
	Tier 3	2006	2.6 (3.5)	-	3.0 (4.0)	-	0.15 (0.2)
175 ≤ hp < 750 (130 ≤ kW < 560)	Tier 4	2011- 2014	2.6 (3.5)	0.14 (0.19)	-	0.3 (0.4)	0.015 (0.02)
hp ≥ 750 (kW ≥ 560)	Tier 1	2000	8.5 (11.4)	1.0 (1.3)	-	6.9 (9.2)	0.4 (0.54)
	Tier 2	2006	2.6 (3.5)	-	4.8 (6.4)	-	0.15 (0.2)
hp ≥ 750 (kW ≥ 560) generator sets	Tier 4	2011- 2014	2.6 (3.5)	-	0.3 (0.4)	0.5 (0.67)	0.07 (0.1)
		2015	2.6 (3.5)	-	0.14(0.19)	0.5 (0.67)	0.022 (0.03)
hp ≥ 750 (kW ≥ 560) all other engines	Tier 4	2011- 2014	2.6 (3.5)	-	0.3 (0.4)	2.6 (3.5)	0.07 (0.1)
		2015	2.6 (3.5)	-	0.14(0.19)	2.6 (3.5)	0.03 (0.04)

1 – The standards are for carbon monoxide (CO), hydrocarbons (HC), non-methane hydrocarbons, (NMHC), nitrogen oxides (NOx), and particulate matter (PM) expressed in units of grams per brake horsepower per hour (g/bhp-hr) and grams per kilowatt per hour (g/kw-hr).

2 – Power is maximum rated power expressed in horsepower (hp) or kilowatts (kw).

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How do I determine my engine's diesel PM emissions?

To determine an engine's diesel PM emissions, an owner/operator may use:

- 1) Manufacturer data and specifications to verify their guaranteed level,
 - 2) USEPA or ARB certification level,
 - 3) Source test results, or
 - 4) EPA AP-42 default emission values.
- EPA AP-42 default emissions are 1.0 g/bhp-hr

What are some emission control strategies?

The following is a list of some potential emission control strategies:

- 1) Install ARB verified add-on pollution control technology,
- 2) Install unverified add-on control equipment,
- 3) Use an alternative fuel,
- 4) Use ARB verified alternative diesel fuel,
- 5) Use unverified alternative diesel fuel,
- 6) Purchase a new engine, or
- 7) Use a combination of the above.

What is a verified emission control strategy?

A diesel emission control strategy is considered verified if it has been verified pursuant to the ARB Verification Procedure. The ARB Verification Procedure is a process that verifies the reductions of diesel PM and/or nitrogen oxides from specific diesel engines using a particular emission control strategy. ARB maintains a website that lists all currently verified control strategies <http://www.arb.ca.gov/diesel/verdev/verdev.htm>.

What are the School Requirements in the ATCM?

An engine may not operate for maintenance and testing during the hours of 7:30-3:30 on days when school is in session if it is within 500 feet of a school. Engines on school grounds may not operate for maintenance and testing purposes during any school-sponsored event.

What are the Fuel Requirements in the ATCM?

An engine > 50 bhp must use CARB diesel fuel, an alternative diesel fuel, CARB with fuel with additives or an alternative fuel beginning January 1, 2006.

Are there requirements for when an engine can operate pending Rolling Blackouts?

An engine may only operate for 30 minutes prior to the time when a utility forecasts a rotating outage in the area the engine is located and engine operation is terminated immediately after the rotating outage is no longer imminent. This does not apply to engines that are operating in accordance with San Diego Gas and Electric's program the Rolling Blackout Reduction Program (RBRP).

What is the Rolling Blackout Reduction Program (RBRP)?

The RBRP is a contractual arrangement implemented by San Diego Gas and Electric Company (SDGE) in San Diego County. In this program SDGE pays an emergency engine owner a fixed price for using their emergency engine to reduce electrical demand and potential blackouts during a Stage 3 alert or a transmission emergency.

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What reports am I required to submit?

The following table lists all the reports required by the ATCM. Refer to Subsection (e)(4) of the ATCM for more details on what specific information is required in each report.

Reports Required by the ATCM

Report Description	New CI Engines	In-Use CI Engines	Submit Report to:
Engine Data Report Form	Prior to Installation	July 1, 2005	District
Compliance Strategy Reporting Form	n/a	180 days prior to compliance date	District
Sellers of Agricultural Engines	January 31, 2006 & each year thereafter	n/a	ARB
Sellers of Engines < 50 bhp	January 31, 2006 & each year thereafter	n/a	ARB
Notification of Non-Compliance w/Emission Standards	Immediately upon detection of violation	Immediately upon detection of violation	District
Loss of Exemption	Immediately upon detection	Immediately upon detection	District

The District has developed the *Engine Data Report Form* and the *Compliance Strategy Reporting Form* to assist facilities in meeting these two reporting requirements. To view forms go to <http://www.sdapcd.org/comply/DieselATCM/ATCMrequire.html>.

What are the Recordkeeping Requirements?

Emergency engines are required to keep monthly logs beginning January 1, 2005. The monthly logs must contain information regarding how many hours the engine operated each month and what was the purpose of operation. For example: maintenance and testing, source testing, initial start-up, or emergency usage. In-use emergency engines must also keep track of the amount and type of fuel added to each diesel tank. If applicable, a diesel particulate filter must be equipped with a backpressure monitor.

Who needs to submit an application for compliance with the ATCM?

The District will require some in-use engine owners or operators to submit a general application (APP116) and supplemental application (Form 34A-J) to modify their existing permit to verify compliance with the ATCM. Such engines would include all prime engines and any emergency engine, which will need more than 30 hours per year for maintenance and testing. These engines must submit an application to the District no later than 180-days prior to the engine's compliance date in the ATCM. This may be as soon as July 1, 2005 for some engines.