FREQUENTLY ASKED QUESTIONS

AIRBORNE TOXIC CONTROL MEASURE FOR STATIONARY COMPRESSION IGNITION ENGINES (ATCM)

PORTABLE AND STATIONARY AGRICULTURAL ENGINE REQUIREMENTS



Stationary Source Division Emissions Assessment Branch

February 7, 2008

Please check http://www.ca.gov/diesel/ag/inuseag.htm for the latest update to Frequently Asked Questions - Airborne Toxic Control Measure for Stationary Compression Ignition Engines (ATCM) - Portable and Stationary Agricultural Engine Requirements. Guidance about the measure's nonagricultural engine requirements (i.e., Frequently Asked Questions Regarding the Stationary Diesel Engine ATCM) is available at http://www.arb.ca.gov/diesel/statport.htm.

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A. Regulation Administration

1. **Question:** Who is responsible for issuing and enforcing air quality requirements for agricultural engines in California?

Answer:

<u>California Air Resources Board's (ARB or Board) Role</u> - As authorized by State law, the Board has approved requirements to reduce diesel particulate matter (diesel PM) and other emissions from agricultural engines as part of the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (ATCM or Stationary Diesel Engine ATCM).

<u>Local Air Districts' Role</u> - Local air quality management and pollution control districts are the primary agencies responsible for implementing and enforcing the ATCM. Local air districts may also issue, implement, and enforce equivalent, more stringent, or additional air quality requirements for agricultural engines. For information about individual district rules, please see Section G of the FAQ for a list of local air district contacts.

2. **Question:** If a local air district rule differs from the Stationary Diesel Engine ATCM, which requirements should be complied with?

Answer:

The owner/operator must comply with the more stringent agricultural engine emission limit or emission limit compliance deadline if the ATCM and local district rule differ in these requirements. However, local air districts may require alternative registration program requirements, provided ARB's Executive Officer finds such alternatives to be equivalent to those of the ATCM.

3. **Question:** What is the status of the Stationary Diesel Engine ATCM's agricultural engine requirements?

Answer:

State emission limits for newly-purchased or installed stationary diesel agricultural engines have been in effect since January 1, 2005. At a public hearing on November 16, 2006, the Board approved additional emission limits for existing or "in-use" greater than 50 horsepower agricultural engines. New and in-use agricultural engine emission limits and exceptions to the limits are summarized in the answer to Question D-1 and registration requirements for both new and in-use agricultural engines are summarized in the answer to Question E-1. On October 18, 2007, these requirements became effective as amendments to the

Stationary Diesel Engine ATCM (title 17, California Code of Regulations, sections 93115.1 through 93115.15). The Final Regulation Order and other documents regarding this rulemaking are available at http://www.arb.ca.gov/diesel/ag/inuseag.htm and at http://www.arb.ca.gov/regact/agen06/agen06.htm.

On January 25, 2008, ARB advised the districts of a memorandum presenting the ARB legal staff's interpretation that, consistent with State law, portable agricultural engines owned or operated by the agricultural source owner/operator are subject to the Stationary Diesel Engine ATCM, unless the engine is owned by a rental/leasing company. Portable engines owned by rental/leasing companies are subject to the Airborne Toxic Control Measure For Diesel Particulate Matter From Portable Engines (Portable Diesel Engine ATCM).

B. Applicability

1. **Question:** Who is affected by the Stationary Diesel Engine ATCM's agricultural engine requirements?

Answer:

Any person, business, public institution, or agency that sells, rents, purchases, installs, owns, or operates one or more stationary compression-ignited diesel agricultural engines in California is affected by the agricultural engine requirements of the ATCM. In addition, any person or entity that sells, installs, owns, or operates one or more portable compression-ignited diesel engines used exclusively in agriculture is affected by the ATCM, unless the engine is owned by a rental/leasing company. Portable engines owned by rental/leasing companies are subject to the Portable Diesel Engine ATCM.

2. **Question:** What is an agricultural engine according to the Stationary Diesel Engine ATCM?

Answer:

An agricultural engine is an engine used in growing crops, raising animals for profit, or in agricultural research or education. Engines used for post-harvest or post-slaughter crop or animal processing are not considered agricultural engines. Such engines are subject to nonagricultural engine air quality emission limits in sections 93115.6, 93115.7, or 93115.9 of the ATCM.

3. **Question:** What types of agricultural engines does the Stationary Diesel Engine ATCM regulate?

Answer:

The ATCM regulates stationary and portable compression-ignited diesel-fueled agricultural engines (see the answers to Questions B-4 and C-1 for exceptions). Within the context of the ATCM, the terms "stationary," "portable," "compression-ignited," and "diesel-fueled" are explained below.

<u>Stationary</u> - A permanently-mounted engine is stationary. In addition, a nonpermanently-mounted engine (or series of engines performing the same function) is considered stationary if located at a particular site:

- 1) For more than 12 consecutive months at a year-round operation; or
- 2) For three or more consecutive months during each of two or more consecutive years at a seasonal operation.

For example, a trailer-mounted engine is considered stationary if it is located at a site where it, or another engine, powers an agricultural irrigation pump for a three-month or more growing season year after year.

<u>Portable</u> - A nonpermanently-mounted engine is portable if it is designed and capable of being moved from one location to another and does not meet "stationary" criteria (see above) for time spent at any single location or particular site. Consistent with State law, portable agricultural engines owned or operated by the agricultural source owner/operator are subject to the Stationary Diesel Engine ATCM, unless the engine is owned by a rental/leasing company. Portable engines owned by rental/leasing companies are subject to the Portable Diesel Engine ATCM.

<u>Compression-Ignited (CI)</u> - A CI internal combustion engine uses the heat generated by compression, rather than spark plugs, to achieve fuel ignition.

<u>Diesel-Fueled</u> - A diesel-fueled engine is fueled, in whole or part, by diesel fuel. Under this regulation, diesel fuel includes: CARB diesel fuel, biodiesel fuel, biodiesel fuel blends that meet the definition of CARB diesel fuel, Fischer-Tropsch fuel, an emulsion of water in diesel fuel, or an alternative diesel fuel (not already identified) that meets the requirements of ARB's Verification Procedure. Please also see the answer to Question B-5.

Examples of commonly-used diesel-fueled agricultural engines regulated by the ATCM are:

- Well and booster pump engines used to water crops; and
- Generator sets that provide power for greenhouses or animal housing (e.g., light, heating, air conditioning) or for equipment used in agriculture.
- 4. **Question:** What types of agricultural engines are not regulated by the Stationary Diesel Engine ATCM?

Answer:

Agricultural engines that are not regulated by the ATCM are: agricultural wind machines; self-propelled equipment (e.g., tractors, harvesters, etc.); spark-ignited engines; and portable engines owned by a rental/leasing company. These engines may be subject to other federal, State, or local air district regulations. Please note that agricultural electric motors are not regulated for the purposes of air quality.

5. **Question:** Do the Stationary Diesel Engine ATCM's agricultural engine requirements apply to engines powered solely by biodiesel fuel?

Answer: Yes, the ATCM applies to compression-ignited engines using 100 percent biodiesel or any blend of biodiesel fuel. ARB is currently investigating potential biodiesel exhaust toxic or other adverse health impacts. Due to the uncertainty surrounding biodiesel and its health impacts, ARB believes that compression-ignited engines using biodiesel (including 100 percent biodiesel) should be subject to the same emission limits and other requirements as compression-ignited engines using traditional diesel fuel. ARB will continue to evaluate this issue as data becomes available. (See also answer to Question F-4.)

C. General Requirements and Exceptions

1. **Question:** What are the Stationary Diesel Engine ATCM's requirements for new and in-use agricultural engines?

Answer:

<u>Requirements</u> - The ATCM contains emission limits (see answer to Question D-1) and registration-reporting requirements (see answer to Question E-1) for agricultural engines.

General Exceptions

- ATCM requirements do not apply to agricultural wind machines;
- Remotely-located agricultural engines and agricultural emergency standby generator set engines are exempt from in-use engine emission limits, but are subject to new engine emission limits and to registration requirements;
 - A remotely-located agricultural engine is one that is located in a federal unclassified/attainment area for PM and ozone (a PM area map is available at http://www.arb.ca.gov/desig/adm/2006/fed06_pm10.pdf and an ozone area map is available at http://www.arb.ca.gov/desig/adm/2006/fed06_8-hr_ozone.pdf) and more than one-half mile from any offsite residential area (i.e., three or more residences), a school, or a hospital;
 - An agricultural emergency standby generator set engine must be equipped with a nonresettable hour meter and used solely to provide electrical power or mechanical work during electrical power service failures, fires, or floods beyond the control of the owner/operator (the owner/operator is required to keep a record of annual hours of operation); and
- Less than or equal to 50 horsepower agricultural engines are subject to new engine emission limits but are not subject to in-use engine emission limits or registration requirements.

Also, in contrast to stationary agricultural engines, the ARB considers portable agricultural engines installed from January 1, 2005, through March 1, 2008, subject to in-use, rather than new, engine emission limits. Portable agricultural engines installed after March 1, 2008, are subject to the ATCM's new engine emission limits. Portable engines that are owned by rental/leasing companies and are used at agricultural operations are subject to Portable Diesel Engine ATCM rather than Stationary Diesel Engine ATCM emission limits and other requirements.

2. **Question:** Why is the remotely-located agricultural engine exemption based on a distance of one-half mile from a residential area while registration requires the reporting of any engine within one-quarter mile of a residential area?

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Answer:

The ATCM's agricultural engine remotely-located and registration distance criteria are both based on the estimated potential cancer risk at near-by locations where people reside or assemble. The engine distances differ because the two provisions address agricultural engines with different emission rates as described below. Generally, a potential cancer risk of less than 10 in a million is considered to be acceptable by local air districts and others who are responsible for managing health risk.

Remotely-Located Agricultural Engines Distance Criteria Since exempted engines are not subject to ATCM emission limits, the measure's remotely-located agricultural engine criteria must address the cancer risk associated with the oldest and dirtiest engines in the State, i.e., uncontrolled pre-1996 (or Tier 0) engines. At one-half mile or more from nearby offsite locations, the potential cancer risk is estimated not to exceed 10 in a million for a large, remotely-located Tier 0 agricultural engine operating up to 2,000 hours per year. Owner/operators are required to apply for the remotely-located agricultural engine exemption at registration to allow local air districts to determine if other factors (e.g., co-location with other engines or unusually high horsepower rating or operating hours) may result in unacceptable cancer risk. In such cases, the local air district can then require emission reductions consistent with the district's AB 2588 Hot Spot Program requirements. Please see the answer to Question D-2 for more information about AB 2588 programs.

Registration Distance Reporting Requirement The ATCM's requirement to report engines within one-quarter mile of offsite locations such as residential areas, schools, or hospitals, addresses the cancer risk associated with engines meeting Tier 3 Off-Road CI Engine Certification Standards. Currently-available Tier 3 engines are much cleaner than Tier 0 engines and, as a result of the ATCM, ARB staff expects that most Tier 0 agricultural engines will be replaced with new Tier 3 engines ATCM. At one-quarter mile or more from an off-site location, the potential cancer risk is estimated not to exceed 10 in a million for a large Tier 3 engine operating up to 3,000 hours per year. However, if registration information indicates that a Tier 3 engine will be located within a quarter mile and that its operation could result in unacceptable cancer risk, the local air district may allow the owner/operator to delay ATCM compliance until Tier 4 engines are available or may otherwise require emission reductions consistent with the district's AB 2588 Hot Spot Program requirements.

D. Emission Limits and Compliance Dates

1. **Question:** What are the Stationary Diesel Engine ATCM's emission limits for new and in-use agricultural engines?

Answer:

<u>Basis for Emission Limits</u> - The ATCM's emission limits for agricultural engines are primarily based on California and federal Off-Road CI Engine Certification Standards for new engines.

Certification Standards (also known as Tier 1-4 Standards):

- Are established for the following CI engine exhaust pollutants: particulate matter (PM), hydrocarbons (HC), oxides of nitrogen (NOx), nonmethane HC+NOx (NMHC+NOx), and carbon monoxide (CO); and
- Are phased in as Tiers 1 through 4 based on engine model year and horsepower rating (as shown below). The standards become more stringent as each tier takes effect in four to five year increments.

Off-Road CI Engine Certification Standard Phase In By Tier¹

Engine Horsepower	Tier 1 Model Years	Tier 2 Model Years	Tier 3 Model Years	Tier 4 Model Years
50-99	1998-2003	2004-2007	2008-2011	2012 and after
100-174	1997-2002	2003-2006	2007-2011	2012 and after
175-299	1996-2002	2003-2005	2006-2010	2011 and after
300-599	1996-2000	2001-2005	2006-2010	2011 and after
600-750	1996-2001	2002-2005	2006-2010	2011 and after
Greater Than 750	2000-2005	2006-2010	(see Tier 2)	2011 and after

Noncertified engines manufactured prior to Tier 1 standard phase-in are often referred to as "Tier 0," e.g., pre-1996 175-750 horsepower engines are Tier 0.

A variety of compliance options (see answer to Question F-1) may be used in order to meet the ATCM's emission limits provided the applicable Certification Standard is not exceeded at installation (for new engines) or by the specified compliance date (for in-use engines). The goal of the emission limits is that all Tier 0 agricultural engines not exceed Tier 3 standards by 2010-11 and all Tier 1 or Tier 2 agricultural engines not exceed Tier 4 standards by 2014-15, or 12 years after the date of initial installation, whichever is later. For the purposes of the Tier 1/Tier 2 engine 12-year operating allowance, the "date of installation," can not be calculated to exceed more than one year from January 1 of the model year of the engine.

<u>Summary of Emission Limits</u> - A summary of new and in-use agricultural engine emission limits in grams per brake horsepower-hour (g/bhp-hr) is provided below. (See also answer to Question D-2.)

Summary of New Diesel Agricultural Engine Emission Limits

A stationary engine installed after January 1, 2005, or a portable engine installed after March 1, 2008, must meet the following emission limits: 1,2,008, must meet the following emission limits:

Horsepower Range (hp)	Diesel PM Not to Exceed (g/bhp-hr)	HC, NOx, NMHC+NOx, AND CO Not to Exceed (g/bhp-hr)
Less Than or Equal to 50 All Applications	engine of the same maximum rated	The current Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power.
Greater Than 50 But Less Than 100 All Applications Other Than Generator Sets	Less Than or Equal to 0.30 OR The current Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power, whichever is more stringent.	
Greater Than or Equal to 100 But Less Than 175 All Applications Other Than Generator Sets	Less Than or Equal to 0.22 OR The current Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power, whichever is more stringent. Less than or Equal to 0.15	The Off-Road CI Engine Certification Standard for an off-road engine of the model year and maximum rated power of the engine installed to meet the applicable PM standard, or Tier 1 standards.
Greater Than or Equal to 175 All Applications Other Than Generator Sets	OR The current Off-Road Engine Certification Standard for an off-road engine of the same maximum rated power, whichever is more stringent.	
Generator Set Engines	Less Than or Equal to 0.15 OR The current Off-Road CI Engine Certification Standard for an off-road engine of the same maximum rated power, whichever is more stringent.	

1. Exceptions:

- An agricultural wind machine;
- A greater than 50 horsepower agricultural engine, or replacement agricultural engine, that is relocated to property under the same owner/operator, provided it is relocated to a site currently or previously occupied by an agricultural engine;
- Prior to January 1, 2008, these limits do not apply to a greater than 50 horsepower engine sold from one agricultural operation to another and funded under a State or federal incentive funding program, e.g., the Carl Moyer Program; and
- Emission limits for a less than 50 horsepower agricultural engine apply only to those selling such an engine or offering it for sale or lease after January 1, 2005 (if stationary), or March 1, 2008 (if portable).
 (Please Note: Except for agricultural wind machines, the engines listed above as "exceptions" are subject to in-use emission limits.)
- 2. Greater than 50 horsepower Tier 1- and Tier 2-certified agricultural engines installed after January 1, 2005 (if stationary), or March 1, 2008 (if portable), are subject to new agricultural engine emission limits upon installation and then to in-use agricultural engine emission limits 12 years later (not to exceed 12 years from January 1 of the model year of the engine).

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Summary of Emission Limits For In-Use Tier 0 (Noncertified) Greater Than 50 Horsepower Diesel Agricultural Engines¹

Horsepower Range	Application	Compliance On or After December 31	Diesel PM Not to Exceed (g/bhp-hr)	HC, NOx, NMHC+NOx, and CO Not to Exceed (g/bhp-hr)
Greater Than 50 But	Generator Sets	2015	0.02	Off-Road CI
Less Than 75	All Other	2011	0.30	Engine
	Applications			Certification
Greater Than or	Generator Sets	2015	0.01	Standards for an
Equal to 75 But Less	All Other	2011	0.30	off-road engine of
Than 100	Applications			the model year and
Greater Than or	Generator Sets	2015	0.01	maximum rated
Equal to 100 But	All Other	2010	0.22	power of the
Less Than 175	Applications			engine installed to
Greater Than or	All Applications	2010	0.15	meet the
Equal to 175 But				applicable PM
Less Than or Equal				standard.2
to 750				
Greater Than 750	All Applications	2014	0.075	

Agricultural wind machines are not subject to ATCM requirements, including emission limits. Registered in-use
emergency standby gen sets and remotely-located agricultural engines are exempt from in-use emission limits, but are
subject to new engine emission limits.

For non-diesel PM air pollutants, if no limits have been established for an off-road engine of the same model year and
maximum rated power, then the in-use diesel-fueled engine used in an agricultural operation shall not exceed Tier 1
standards in title 13, CCR, section 2423 for an off-road engine of the same maximum rated power irrespective of model
year.

Summary of Emission Limits For In-Use Tier 1- Or Tier 2-Certified Greater Than 50 Horsepower Diesel Agricultural Engines¹

Horsepower Range	Compliance	Diesel PM	HC, NOx, NMHC+NOx, and CO
	On or After December 31	Not to Exceed (g/bhp-hr)	Not to Exceed (g/bhp-hr)
Greater Than 50 But Less Than 75	2015 or 12 years after the date of initial installation, whichever is later ²	0.02	
Greater Than or Equal to 75 But Less Than 175	2015 or 12 years after the date of initial installation, whichever is later ²	0.01	Off-Road CI Engine Certification Standards for an off-road engine of the model year and
Greater Than or Equal to 175 But Less Than or Equal to 750	2014 or 12 years after the date of initial installation, whichever is later ²	0.01	maximum rated power of the engine installed to meet the applicable PM standard. ³
Greater Than 750	2014 or 12 years after the date of initial installation, whichever is later ²	0.075	

Agricultural wind machines are not subject to ATCM requirements, including emission limits. Registered in-use
emergency standby gen sets and remotely-located agricultural engines are exempt from in-use emission limits, but are
subject to new engine emission limits.

2. Twelve years can not exceed 12 years from January 1 of the model year of the engine.

2. **Question:** Are there additional emission requirements?

Answer:

Yes, federal emission standards and alternative/additional local air district requirements may affect agricultural engines. Generally, an owner/operator that complies with the ATCM will comply with these other standards and requirements except as mentioned below.

Federal Requirements - Federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) affect internal combustion engines for all industry sectors, including agriculture. The NSPS apply to the sale and installation of new (i.e., never-been-used) engines and to engine rebuilds where the owner/operator invests more than 50 percent of the cost of a new engine in the rebuild. The primary difference between the State ATCM and the federal NSPS is that the ATCM exempts agricultural wind machine engines while the NSPS does not (also see the answer to Question D-4). The NESHAP apply to greater than 500 horsepower engines associated with major sources of hazardous

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^{3.} For non-diesel PM air pollutants, if no limits have been established for an off-road engine of the same model year and maximum rated power, then the in-use diesel-fueled engine used in an agricultural operation shall not exceed Tier 1 standards in title 13, CCR, section 2423 for an off-road engine of the same maximum rated power irrespective of model year.

air pollutants and specifically address carbon dioxide and formaldehyde in engine exhaust. ARB expects that few (if any) California agricultural operations are subject to the NESHAP. Also, it is likely that local air districts have already identified affected agricultural operations because major sources of hazardous air pollutants are required to obtain Title V Operating Permits. In contrast to the NESHAP, the ATCM does not specify emission requirements for carbon dioxide or formaldehyde. Please note that the U.S. Environmental Protection Agency has proposed to revise the NESHAP (June 2007).

Local Air District Registration and Emission Limit Alternatives to the ATCM - Local air districts may issue, implement, and enforce equivalent, more stringent, or additional air quality requirements affecting agricultural engines. For example, San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rule 4702 and Rule 2250 and South Coast Air Quality Management District (SCAQMD) Rule 1110.2 and Rule 219 have precedence over ATCM NOx emission limits for diesel agricultural engines in those respective districts because they are equivalent to or more stringent than the ATCM.

Local Air District AB 2588 Hot Spots Program Requirements - ARB expects the ATCM to reduce diesel PM emissions to acceptable risk levels for all Tier 4- and most Tier 3-compliant engines used in agriculture. However, a relatively small number of agricultural operations with Tier 3-compliant engines located very close to a property boundary may pose an unacceptable adverse health risk offsite even though the engines comply with ATCM emission limits. Thus, in conjunction with engine registration, local air districts may conduct health risk screens that consider the potential risk posed by all diesel engines at an agricultural operation consistent with AB 2588 Hot Spots Program Guidelines. An AB 2588 risk screen enables the local air district to advise an engine owner/operator to select a compliance strategy that avoids having to replace and/or retrofit an agricultural engine twice - once to comply with the ATCM and again to address subsequent local air district AB 2588 risk reduction requirements.

3. Question: Will risk assessments need to be completed on all agricultural engines?

Answer:

No, risk assessments will not be necessary for engines at most agricultural operations. Engine owner/operators should not contract with consultants for risk assessments of any sort without first consulting their local air districts. Please see Section G of the FAQ for a list of local air district contacts.

Local air districts are likely to conduct risk screens for diesel agricultural operations based on registration information submitted by owner/operators. For the majority of agricultural operations, engines are not expected to pose a significant

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adverse health risk outside the property boundary. If an agricultural operation's engines are located close enough to pose an unacceptable risk offsite, the local air district will advise the owner/operator about control options for reducing risk. At that time, an owner/operator may want to consider a complete risk assessment in order to verify the local air district's risk screen conclusions.

4. **Question:** Does the Stationary Diesel Engine ATCM contain operating hour limits for agricultural engines?

Answer:

No, the ATCM does not contain operating hour limits for agricultural engines. However, federal New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines contains an emergency standby engine operating hour limit for the purposes of maintenance checks or readiness testing which would apply to any emergency standby engine used in agriculture (see answers to Question C-1 and Question D-2). Also, San Joaquin Valley Unified Air Pollution Control District Rule 4702 exempts agricultural (and other) engines from certain requirements based on operating hours. This means that an engine must voluntarily be operated below a specified number of hours per year in order to be eligible for exemption from rule requirements.

E. Registration/Fee/Reporting Requirements

1. Question: What are the registration requirements for agricultural engines?

Answer:

General Registration Requirements - The ATCM requires local air districts to establish registration programs, or equivalent alternative programs, for greater than 50 horsepower new and in-use diesel agricultural engines. Owner/operators must submit contact, engine (e.g., make, model, age, horsepower, etc.), and location information for each engine. In addition, owner/operators must report changes (e.g., engine replacement, modification, or location changes) to their local air districts.

<u>Registration Submittal</u> - The local air districts will provide owner/operators with agricultural engine registration forms and instructions. Most local air districts are expected to adopt rules that require owner/operators to submit registrations forms according to a schedule similar to that in the ATCM:

Engine Type	Installed:	Submit Registration By:
Stationary	Prior to January 1, 2005	March 1, 2008
ı	On or after January 1, 2005	January 16, 2008, ¹ or within 90 days of installation, whichever is later
Portable	Any date	March 1, 2008, or within 90 days of installation, whichever is later

^{1.} Ninety calendar days after the effective date of the Stationary Diesel Engine ATCM amendments (October 18, 2007).

<u>Fees</u> - The purpose of an agricultural engine registration program is to provide a means for local air districts to identify affected engines and track their compliance with ATCM emission limits. Implementation and enforcement of ATCM emission limits and registration will require significant local air district time and resources. ARB expects that local air districts will charge owner/operator fees to recover implementation and enforcement costs. The ATCM requires owner/operators to pay these fees. Additionally, fees will be required from agricultural emission sources that must comply with and participate in local air district AB 2588 Hot Spots Programs.

2. **Question:** Are all agricultural engines required to be permitted?

Answer:

No, most local air districts plan to require agricultural engine owner/operators to register their engines. In contrast to permitting, registration does not require an owner/operator to obtain a permit from the local air district before installing, operating, or modifying an engine. To date, the South Coast Air Quality Management District is the only district planning to permit all greater than 50 horsepower agricultural engines.

3. **Question:** Does a not-in-use diesel engine stored at an agricultural operation have to be registered?

Local air districts may choose whether or not to require the registration of engines stored at agricultural operations. However, if registration is not required and the grower subsequently needs to use the engine, it must be registered with the local air district and meet applicable emission limits consistent with ATCM requirements.

4. **Question:** Aside from submitting initial registration information, what ATCM recordkeeping or reporting requirements apply to agricultural engines?

The minimum agricultural engine recordkeeping and reporting requirements set forth in the ATCM are summarized in the table below. Local air districts may require additional recordkeeping and/or reporting.

Agricultural Engine	Summary of Recordkeeping or Reporting Requirement	ATCM Reference
Engine Sales	A seller must report the previous year's sales information on less than or equal to 50 horsepower engines to ARB by January 31 of	93115.10(b)
	each year.	
Registered Engine	The owner/operator must notify the local air district in writing no later	93115.8(c)(3)
	than 14 days after a change in engine status.	
Emergency Standby	The owner/operator must maintain a monthly record of engine	93115.10(f)
Engine	operating hours for at least 36 months.	
Exempted Engine	The owner/operator must notify the local air district within five days of	93115.10(d)
	an engine no longer meeting exemption criteria.	

(Note: Even if not specifically required, it is advisable for owner/operators to keep receipts/records of engine purchase orders, installations, modifications, emission tests, and warranties.)

F. Compliance Guidance

1. **Question:** What are the potential Stationary Diesel Engine ATCM compliance options?

Answer:

The table below lists potential means of complying with the ATCM's diesel agricultural engine emission limits (see answer to Question D-1). To the extent ARB staff is aware, the table also identifies special benefits or considerations regarding these compliance options. Staff did not list common considerations applicable to all compliance options that should be discussed with agricultural advisors, engine distributor/dealers, and local air districts (e.g., availability and cost of equipment and fuel or power). Staff plans to revise the table as new information becomes available.

Summary of Compliance Options for Diesel Agricultural Engines

Compliance Option	Benefits	Considerations
Replacement with Electric Motor	 Maximum multi-pollutant emission reductions (an incentive program funding priority or may provide an opportunity to create marketable emission reduction credits)¹ Eliminates nearby receptor risk concern An electric motor is not subject to ATCM emission limits or registration/reporting requirements 	Requires electrical line connection and hook-up
Replacement with Tier 3, Tier 4, or Compliant Certified Diesel Engine	 Tier 3 and Tier 4 engines may provide multi-pollutant emission reductions (an incentive funding program priority) Nearby receptor risk acceptable for Tier 4 engines and for most, but not all, Tier 3 engines Engines may not require source testing since certification test results are available 	 Tier 3 engines located within one-quarter mile of a property boundary could pose an unacceptable risk and require additional emission reduction measures If a Tier 0 engine is replaced with a compliant Tier 2 engine in 2010-11, additional emission reduction will be necessary in 2014-15 or 12 years after installation (i.e., engine model year)
Replacement with Spark-Ignited Engine (use of natural gas, propane, gasoline, or other diesel fuel alternative)	Once replacement is reported, a spark-ignited engine is not subject to ATCM emission limits or registration/reporting requirements	May be subject to local air district spark-ignited engine emission requirements
Retrofit Certified Engine with Add-On PM Control Device	An add-on PM control device that has been verified by the State for use with certified ag. pump or genset engines may not require source testing	 Source testing may be required for devices that have not been verified by the State NOx emission limits may require a second add-on control device Maintenance and engine warranty concerns have been experienced with some add-on control devices in the past
Biodiesel Use	No outlay for new equipment; however, fuel line replacement may be necessary	Source testing may be required to demonstrate compliance with emission limits (see answers to Questions B-5, F-4, and F-5 of the FAQ) Less than or equal to 49 percent biodiesel must meet current federal and California fuel specifications Possible engine performance and/or warranty issues

^{1.} To create credits, emission reductions must be real, surplus, enforceable, quantifiable, and permanent. Generally, emission reductions are ineligible for creating credits if they occur as a result of Carl Moyer Program incentive funding.

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2. **Question:** Can a grower purchase a noncertified agricultural engine (i.e., Tier 0 -- typically pre-1996 model year) that meets the emission limits? What if the engine is rebuilt or retrofitted with a control device?

Answer: No. In California, it is not legal for any person to purchase, rent/lease, or install a Tier 0 ag. engine. Any engine installed after January 1, 2005, is considered new and must meet new engine emission limits (see the table entitled "Summary of New Diesel Agricultural Engine Emission Limits" in the answer to Question D-1).

A rebuilt Tier 0 engine could not meet the Stationary Diesel Engine ATCM's new engine emission limits, unless a manufacturer rebuilt, tested, and certified the engine to current Off-Road CI Engine Certification Standards. This is not feasible due to the changes in diesel engine technology over the past several years. Also, currently and for the foreseeable future, there is no Tier 0 engine retrofit control technology verified to meet new agricultural engine emission limits for diesel PM and other air pollutants.

In addition, please note that by 2011 or 2012 (depending on engine size), in-use Tier 0 engines installed prior to January 1, 2005, can no longer be operated in California (see the table entitled "Summary of Emission Limits For In-Use Tier 0 (Noncertified) Greater than 50 Horsepower Diesel Agricultural Engines" in the answer to Question D-1).

3. **Question:** If a grower purchases and installs an agricultural engine certified to the current tiered Off-Road CI Engine Certification Standards, can he/she assume that the engine will comply with new engine emission limitations?

Answer: Typically, an engine certified to the current Off-Road CI Engine Certification Standards will comply with Stationary Diesel Engine ATCM new agricultural engine emission limits; however, there are notable exceptions as explained below:

Exceptions:

- New "Flexibility Engines" State and federal regulations establishing Off-Road CI Engine Certification Standards contain flexibility provisions that allow manufacturers to certify engines to current tiered standards if some models slightly exceed the standards so long as other models emit below the standards. Though compliant for the purposes of the certification standards, new "flexibility engines" would only be allowed if they meet the emission limits for the model year engine specified in the Stationary Engine ATCM (see the emission limitations in the answer to Question D-1). California requires "flexibility engines" to be labeled.
- New Ag. Gen Set Engines Currently, new 50 through 174 horsepower agricultural generator set engines are required to meet 0.15 grams/bhp-hr PM --

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a lower emission rate than Tier 3 Off-Road CI Certification Standards now in effect for these engine sizes. Information about generator set engines that meet 0.15 g/bhp-hr PM is available on the ARB webpage at http://www.arb.ca.gov/diesel/ag/inuseag.htm.

New Engines Near Residential Areas, Schools, Hospitals - A new Tier 3
agricultural engine that will be located within one-quarter mile of a residential
area, school, or hospital may require additional risk analysis consistent with local
air district AB 2588 Hot Spots Programs.

Because of the exceptions listed above and the possibility of additional local requirements, it is always a good idea to consult the local air district before purchasing/installing an engine for agricultural or nonagricultural applications.

4. **Question:** Can biodiesel be used to comply with agricultural engine exhaust emission limits in the Stationary Diesel Engine ATCM?

Answer: Yes, however, before biodiesel use is approved as an acceptable compliance method by a local air district, the district is likely to require the measurement of engine exhaust pollutants (commonly referred to as an "emissions source test" or "source test") to show that ATCM emission limits are not exceeded. For example, while the use of 100 percent biodiesel and some biodiesel blends is known to reduce diesel PM emissions, it is also known to increase the emissions of NOx. The increase in NOx emissions can vary significantly depending upon the quality and percent of biodiesel used as well as engine design and mode of operation. Due to insufficient data, no one can predict NOx emissions for each engine make, model, and horsepower rating across the range of available biodiesel fuels. In addition, the effectiveness of biodiesel fuel additives intended to reduce NOx emissions needs to be investigated. For these reasons, a source test may be required for each biodiesel-fueled agricultural engine (at least until sufficient data can be gathered and analyzed). For information about what source testing entails, please see the answer to Question F-5.

5. **Question:** What is source testing and how does it relate to ATCM emission limit compliance?

Answer:

What is a Source Test? A source test measures the concentration and/or quantities of pollutants emitted from an emission source, such as an engine. Each pollutant is measured using a specific test method. A test method is a standardized way of conducting a test to ensure that results may be compared against others in a scientifically defensible manner. For a given diesel agricultural engine, the local air district will determine which pollutant(s) need to be tested and the appropriate test method(s) (as set forth in section 93115.14 of the ATCM).

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<u>Is a Source Test Required for Compliance?</u> The local air district should always be consulted before any source testing is conducted because the need for testing is determined by the local air district and may not be required for certain compliance options. If there is a need for source testing, the local air district is likely to alert agricultural engine owner/operators at the time compliance options are discussed following registration information submittal and review.

How Much Does a Source Test Cost? Most source tests are actually performed by independent companies and the presence of local air district personnel is often required at the time of testing. The engine owner/operator is responsible for the cost of the test, which may range from \$3,000 to \$10,000 for a testing contractor. Local air districts also generally charge fees to cover the costs of reviewing source test plans, witnessing the testing, and reviewing and approving the source test results. If a source test shows that an engine is not in compliance, the test cost must still be paid as well as the cost to come into compliance and the cost of any retests.

6. **Question:** Are there financial incentives/assistance programs available to growers with agricultural engines affected by the ATCM?

Answer:

Yes, financial incentives and assistance programs for engine replacements and retrofits are available to encourage early emission reductions and help growers. Growers should apply for these programs as soon as possible because funds are limited.

A local air district may administer a Carl Moyer Program, Agricultural Assistance Program, or both. A few local air districts do not administer either program. To be eligible for the Carl Moyer Program, agricultural engine projects must be completed at least one year prior to applicable ATCM compliance dates (see answer to Question D-1 for engine compliance dates). Additional time is necessary for application processing, prioritization, ordering, shipment, and installation. Priority is generally given to projects addressing the dirtiest, most frequently used engines. To be eligible for the Agricultural Assistance Program, projects must be completed by the applicable ATCM compliance dates. Again, priority is generally given to engine projects that generate the most emission reductions and time should be allowed for application processing, etc. To determine the local air district in which you are located by zip code and/or to contact your local air district regarding available programs, please see Section G of the FAQ.

Another potential funding source is the U.S. Department of Agriculture Environmental Quality Incentives Program (EQIP). A grower must be located in a federal nonattainment area for ozone and apply to the local office of the Natural Resources Conservation Service (NRCS) in order to participate in this program. To

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determine your local air district's status regarding attainment with the national ambient air quality standard for ozone, please see <u>General Exceptions</u> in the answer to Question C-1. More information about EQIP is available at http://www.ca.nrcs.usda.gov/programs/eqip or (530) 792-5653.

7. **Question:** What steps should an agricultural engine owner/operator take to comply with the Stationary Diesel Engine ATCM?

Answer:

- As soon as possible, contact your local air district (see Section G of the FAQ):
 - Request to be on a mailing list for all outreach events and materials involving diesel agricultural engine requirements;
 - Request information and advice about your eligibility for agricultural emergency standby generator set or remotely-located engine exemptions (see <u>General Exceptions</u> in the answer to Question C-1);
 - Discuss potential funding incentives or compliance assistance that may be available to you; and
 - Indicate if you anticipate purchasing and/or installing a diesel agricultural engine in the very near future.
- Identify your affected agricultural engines, their Tier or model year, horsepower, and location. Request agricultural engine registration forms from your local air district.
- Submit a completed registration form for each engine to your local air district by the appropriate compliance date (see answer to Question E-1).
- If you have not already done so, at or near the time you register, contact your local air district to discuss your strategy for complying with emission limits (see answers to Question D-1 and Question F-1).
- Ascertain the time frames and instructions for submitting applications for financial incentives and assistance. Financial incentives and assistance are limited and the likelihood of funding is enhanced by submitting applications early.
- Your emission limit compliance strategy should be implemented no later than the applicable compliance dates (see answer to Question D-1).
- 8. **Question:** What happens if an agricultural engine owner/operator fails to comply with the Stationary Diesel Engine ATCM?

Answer:

Noncompliance with the ATCM's agricultural engine emission limits and registration submittal requirements by ATCM- or local air district-mandated dates (see answers to Question D-1 and Question E-1) could result in a local air district or ARB inspector issuing a field citation or notice of violation. An owner/operator who is issued a notice of violation is subject to maximum penalties ranging from up to

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G. Local Air District and Air Resources Board Contacts

Question: Who should be contacted for further information about agricultural engine requirements and financial incentives/assistance?

Answer:

Local Air District Contacts

(Identify the local air district where the agricultural engine is located by entering a zip code, city, or county at http://arb.ca.gov/app/dislookup/dislookup.php. In addition, a California Air Districts and Counties Map is available at http://www.arb.ca.gov/maps/adistbw.pdf.)

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