

# **RULE WORKSHOP:**

## ***Registration Requirements for Compression Ignition Engines used in Agricultural Operations***

Proposed Amendments to Rule 4.16

Proposed Date of Adoption: October 3, 2011

Feather River Air Quality Management District

August 18, 2011

# Workshop Overview

- Background
  - Diesel PM info
  - State ATCM
- The Need for Change
- Low-use & Intermittent-use Exemptions
- Examples
- Questions & Comments

# Who We Are

FRAQMD is the local air pollution control agency that is responsible for implementing and enforcing Federal, State, and Local air pollution control laws and programs in Yuba and Sutter Counties.

## Mission

- Promote and Improve Air Quality in Yuba and Sutter Counties

# Diesel PM

- In 1998, the California Air Resources Board (CARB) identified the particulate fraction in diesel exhaust as a Toxic Air Contaminant
  - Potential to cause or contribute to cancer, heart and lung disease, poor pregnancy outcomes, premature death, and other health problems.
- In 2000, CARB adopted its Diesel Risk Reduction Plan
  - The Plan sets out the basis for regulating diesel particulate exhaust from internal combustion engines in all sectors of the economy in California.

# State Air Toxic Control Measure

- In 2004, CARB adopted the ATCM for Stationary CI Engines which has emission standards for diesel engines used in the commercial/industrial/institutional sector.
  - The initial regulation exempted engines in agricultural use.
- In 2007, CARB amended the ATCM to include requirements for engines in agricultural service.
  - Portable and Stationary Ag engines are regulated under this ATCM.
    - Water Pumps, such as sprinkler pumps, deep well pumps, or transfer pumps
    - Compressor engines, either tow-behind or mounted to a truck
    - Generator Sets
  - Vehicles, such as tractors, are not regulated under this ATCM.

# Current ATCM Timeline

Tier	Application	Horsepower	Compliance Date	Alternative Compliance Date
0	Other than Genset	100-174	December 31, 2010	
0	All	175-750	December 31, 2010	
0	Other than Genset	50-99	December 31, 2011	
0	All	751+	December 31, 2014	
1 or 2	All	175-751+	December 31, 2014	12 years after installation/mfg.
0	GenSet	50-174	December 31, 2015	
1 or 2	All	50-174	December 31, 2015	12 years after installation/mfg.
All	Emergency Use	All	Good Forever	
3 or 4	All	All	Good Forever	

# Tier Status Example

- **Tier 0 engines:** (manufactured prior to 1996)
  - NOx: 12 g/bhp-hr; PM: 1 g/bhp-hr;
- **Tier 1 engines:** (1996 – 2002)
  - NOx: 6.9 g/bhp-hr; PM: 1 g/bhp-hr;
- **Tier 2 engines:** (2003 – 2006)
  - NOx: 4.9 g/bhp-hr; PM: 0.22 g/bhp-hr;
- **Tier 3 engines:** (2007 – 2010)
  - NOx: 3.0 g/bhp-hr; PM: 0.22 g/bhp-hr;
- **Interim Tier 4 engines:** (2011-2013)
  - NOx: 3.0 g/bhp-hr; PM: 0.015 g/bhp-hr;
- **Tier 4 Final engines:** (2014+)
  - NOx: 0.3 g/bhp-hr; PM: 0.015 g/bhp-hr;

# CARB justification

- CARB assumed that most engines are operated for 1,000+ hours per year (which is normal for irrigation pumps).
- Engines that operate 1,000 hours per year and are 15-20+ years old are near the end of their useful life, so they would need to be replaced.



# The Need for Change

- The regulation did not include any provisions for low-use or intermittent-use engines.
- Low-use engines:
  - Example: Frost Protection or Minor irrigation
- Intermittent-use engines:
  - Used on an infrequent basis. May be in storage for 4-5 years, then brought out for 1,000 hours to pump during a drought year.
- These engines can have significant remaining life, which was not included in CARB's economic evaluation.

# Why now?

- Over the past 4 years since CARB's ATCM became effective for agricultural engines, many Districts negotiated with CARB staff to adopt more exemptions.
- Finally, in April 2011, CARB provided general guidance to all Air Districts that wished to provide such exemptions in a local rule.

# Intermittent-use Engines

- The engine is a remote engine
  - >0.5 miles from a residential area (3+ houses), school, or hospital
- The engine operates less than a cumulative total of 2,000 hours beginning on:
  - For Tier 1 & 2 engines, the date of the engine's compliance timeline as stated in the ATCM. [January 1, 2015-2019]
  - For Tier 0 engines, January 1, 2012.
- The owner has modified their District registration to claim the intermittent-use status prior to:
  - For Tier 1 & 2 engines, the date of the engine's compliance timeline as stated in the ATCM. [December 31, 2014-2018]
  - For Tier 0 engines, December 31, 2011;

# Low-use Engines

- The engine operates less than 200 hours per year after receiving a District registration with a low-use status.
- The engine has a potential cancer risk at any residential area, school, or hospital of less than 10 chances per million.
  - Determined by the District's Health Risk Assessment.
  - Depending on the location of engine operation, the engine may be limited to less than 200 hours/year.
- The owner has modified their District registration to claim the low-use status.
- The owner has not previously claimed the intermittent-use status for the engine.

# Other Provisions

- Mandatory phase out:
  - 2020 for Tier 0 engines
  - 2025 for Tier 1 and Tier 2 engines
- Hour meter installation
  - If the engine isn't already equipped with one
- Recordkeeping
  - The District will send out surveys along with the registration renewal packet [early March, every year].
  - Annual hours of operation needs to be submitted to the District on these surveys.

# Remote Location vs. Intermittent-use

- Current ATCM remote location provisions
  - Allows for an 18 month extension of the basic compliance date.
- Some Tier 0 engine registrations have already claimed this extension, pushing their compliance date to June 30, 2012/2013.
- **Tier 0 engines must claim intermittent usage prior to December 31, 2011**
  - This will effectively cancel out the June 30, 2012/2013 timeline and put the engine on the 2,000 hour limit.

# Previously Cancelled Registrations

- If your Tier 0 registration has been cancelled and you wish to reactivate your application/registration:
  - Please write a letter to the District (before December 31, 2011) informing us of the specific engine and whether you are requesting the low-use or intermittent-use provisions.

# District Determinations

- If the engine is in storage and you have no intent to operate it, FRAQMD does not require the engine to be registered.
- If you miss the timeline to claim intermittent use for any reason, there is no going back.
- The District will still accept any application for registration with no penalty as long as it is self-reported.



# Example 1)

- Tier 1 Case IH engine, rated at 110 horsepower
  - verified by the District to be a remote engine
  - Normal ATCM compliance date: 12/31/2015
- What you do:
  - In 2015, write a letter to the District requesting intermittent-use status, providing the registration # and exact location of engine operation
  - The engine will be allowed 2,000 hours of operation between 1/1/2016 and 12/31/2025
  - Make sure you remove/replace the engine before it reaches 2,000 hours of operation
  - Submit the annual reports showing how many hours the engine has operated in the past year
    - Ex) 1/1/2016-12/31/2016; 1/1/2017-12/31/2017;

# Example 2)

- Tier 0 Deutz engine, rated at 80 horsepower
  - verified by the District to be a remote engine
  - Normal ATCM compliance date: 12/31/2011
- What you do:
  - By 12/31/2011, write a letter to the District requesting intermittent-use status, providing the registration # and exact location of engine operation
  - The engine will be allowed 2,000 hours of operation between 1/1/2012 and 12/31/2020
  - Make sure you remove/replace the engine before it reaches 2,000 hours of operation
  - Submit the annual reports showing how many hours the engine has operated in the past year
    - Ex) 1/1/2012-12/31/2012; 1/1/2013-12/31/2013;

# Example 3)

- Tier 0 John Deere engine, rated at 165 horsepower
  - within a ½ mile of East Nicolaus High School
  - Normal ATCM compliance date: 12/31/2010
- What you do:
  - By 12/31/2011, write a letter to the District requesting low-use status, providing the registration # and exact location of engine operation
  - The engine will be allowed 200 hours of operation per year [pending Air Toxics review]
  - Make sure you removed the engine by December 31, 2020.
  - Submit the annual reports showing how many hours the engine has operated in the past year
    - Ex) 1/1/2012-12/31/2012; 1/1/2013-12/31/2013;

# Example 4)

- You purchase a new Tier 3 or Tier 4 engine
- What you do:
  - Submit an application to register the engine within 90 days.
  - Keep the engine registered.

# Amendments + Moyer Program

- Since the amendments will extend the compliance dates for these engines, they may be eligible for the Moyer Program
- Please note that currently the Moyer Program funds are awarded based on the cost-effectiveness of the project (\$/ton emissions reduced), and engines that are low or intermittent-use generally don't rank high enough to receive funding.
- For further questions about the Moyer Program, please contact Sondra Spaethe @ 530-634-7659, ext 210

# Questions & Comments

Please submit formal comments in writing to:

Feather River Air Quality Management District

David Valler, APCO

1007 Live Oak Blvd, Suite B-3

Yuba City, CA 95991

Written Comments are due by: **September 19, 2011**

Proposed Date of Adoption: **October 3, 2011**

Yuba County Government Center

located at 915 8th Street in Marysville, CA.