Agenda

1. Introductions and Agenda Ideas
2. Regulation Summary and Current Implementation Status
3. Diesel Off-road On-line Reporting System (DOORS) Demo
4. Statewide Training/Outreach Discussion
5. Frequently Asked Questions (FAQs) Discussion
6. ORIAG Organization and Planning
7. Public Comment Period
Introductions

Regulation Summary and Current Implementation Status
Off-Road Implementation Advisory Group

May 12, 2008
Beth White
California Environmental Protection Agency
Air Resources Board

Outline

• Regulation Summary
• Regulation Modifications and Status
• VDECS Availability
• Statewide Outreach Efforts
• Demonstration Projects
• Funding Pilot
• ARB Contacts
Regulation Summary

Applicability

- Regulation applies to any person, business, or government agency who owns or operates any diesel-fueled or alternative diesel fueled off-road vehicle horsepower within California
- What is considered an off-road vehicle?
  - Vehicles that were intended to be used off-road
  - Cannot be registered to drive safely on-road
  - A work-over rig
- Excludes vehicles designed to operate on-road regardless of use

Fleet Size Definitions

<table>
<thead>
<tr>
<th>Fleet Size Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Fleet &lt;= 2,500 hp, or Municipality fleet in low population county</td>
</tr>
<tr>
<td>Medium</td>
<td>Fleet with 2,501 to 5,000 hp</td>
</tr>
<tr>
<td>Large</td>
<td>Fleet with more than 5,000 hp</td>
</tr>
</tbody>
</table>
What Does the Regulation Require?

- By 2008:
  - Limits on idling
- By 2009:
  - Written idling policy
  - Initial reporting
  - Only cleaner vehicles may be added to fleets
- By 2010:
  - For many fleets, must have begun retrofitting and turning over vehicles

Idling Limitations

In 2008:
- 5 minute idling limit on off-road vehicles

By March 1, 2009:
- Written 5 minute idling policy
  - Requirement is for medium and large fleets
  - Must make idling policy available to all vehicle operators in fleet

Adding new vehicles

Beginning March 1, 2009:
- No fleet may add a vehicle with a Tier 0 engine to its fleet
Initial Reporting Requirements

• A fleet owner must report what the fleet looked like as of March 1, 2009
• Required information:
  – The fleet owner information
  – Vehicle List
  – Engine information
  – Early actions taken
• Initial reporting date depends on fleet size:

<table>
<thead>
<tr>
<th>Fleet Size Category</th>
<th>Initial Reporting Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>April 1, 2009</td>
</tr>
<tr>
<td>Medium</td>
<td>June 1, 2009</td>
</tr>
<tr>
<td>Small</td>
<td>August 1, 2009</td>
</tr>
</tbody>
</table>

Vehicle Labeling

• All vehicles must be labeled
  – ARB assigns ID number after initial reporting
  – Fleets must label vehicles within 30 days
• Number stays with vehicle over its lifetime
• Permanently affix or paint on right side of vehicle ~5 feet above ground
**Annual Compliance Process**
Large and Medium Fleets

Either meet NOx target or do 8% or 10% turn over
Either meet PM target or do 20% retrofits
Done For the year

Includes:
Annual reporting requirements
Annual record keeping requirements

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**Adding Vehicles**

- After the first compliance date for a fleet:
  - If the fleet is meeting the fleet averages: A fleet must show that the fleet average target of that year is met within 3 months of adding the vehicle
  - If the fleet is meeting BACT requirements: The vehicle must be Tier 2 or higher and have a NOx emission factor less than or equal to the current year NOx fleet average target
How will the Regulation be Enforced?

- Annual fleet reporting
- Vehicle labeling
  - Unique vehicle identification number
- Inspection
  - Fleet audits
  - Facility and construction project inspections
  - Roadside inspections
- Additional enforcement staff

Exemptions from Engine Turnover Requirements

- Small fleets
- Vehicles less than 10 years old
- Specialty vehicles if certain criteria are met
- Vehicles retrofit in past 6 years
- Vehicles meeting the cleanest new engine standards
  - Available 2008 to 2014
## Exemptions from Retrofit Requirements

- Engines in vehicles less than 5 years old
- Engines for which there is no retrofit available or for which one cannot be safely installed
- New engines that come with a diesel particulate filter
- Engines already retrofit with the best available control

## Other Exemptions and Compliance Extensions

- Exempt from all but recordkeeping/reporting
  - Low-use vehicles
    - Operated less than 100 hours/year
  - Emergency vehicles
  - Dedicated snow removal vehicles
- Compliance extensions
  - Manufacturer delays for retrofits or new engines
  - Delay of Tier 4 interim or final vehicles
NOx Requirements

Two ways to meet the NOx requirements:

• NOx fleet average targets approach
  – Meet NOx emissions targets set by ARB by any means

or

• Best Available Control Technology (BACT) approach:
  – Turn over engines at a rate of 8% of total fleet horsepower per year (after 2015, the 8% turnover rate increases to 10%)

NOx BACT Turnover Compliance Options

• Replace older vehicles with new or used vehicles
• Replace diesel vehicles with electric or alternative fuel vehicles
• Repower older engines with a Tier 2 or higher engines
• Retire vehicles from fleet
• Designate vehicles as low use (vehicles used < 100 hours per year)
PM Requirements

Two ways to meet the PM requirements (the lesser of the requirements can be done):

- PM fleet average targets approach
  - Meet PM emissions targets set by ARB by any means

or

- Best Available Control Technology (BACT) approach:
  - Install VDECS (also referred to as PM retrofits) on 20% of total fleet horsepower per year

PM BACT Compliance Options

- Install PM VDECS
- Retirement of Tier 0s for a fleet decreasing in horsepower
  - If a fleet is “shrinking” from the previous year, the Tier 0 horsepower retired (and not replaced) from the fleet can count towards PM BACT compliance
  - Example: If a fleet retires 20% Tier 0 vehicles, both the PM and NOx BACT requirements are fulfilled
SOON Program

What is the SOON Program?

- The Surplus Off-road Opt-in for NOx (SOON) program is designed to achieve additional NOx reductions
- Local air districts may opt into this program to reduce NOx emissions beyond what is required by the off-road regulation
- Carl Moyer incentive money is used to fund these additional NOx reductions
- After 2009, districts may make SOON mandatory
SOON Update

- AQMD Governing Board opted-in to the SOON provision on May 2nd.
- The Governing Board also decided to make the program mandatory.
- The original SOON program announcement (closed May 2nd at 1 p.m. – approximately 11 fleets requesting 13.9 million for approximately 139 vehicle repowers.
- The Board released second Program Announcement (PA#2008-09) seeking additional proposals for the SOON program - closes November 7th at 1p.m.
- AQMD staff will forward the Governing Board approved SOON guidelines to ARB for approval early next week.

Regulation Modifications
First Notice - Modified Text

• Modified small fleet definition
  – Small fleets need not be small businesses
• Bifurcated PM and NOx Requirements
• Credit for engine rebuilt to higher tier level

Second Notice - Modified Text

• Removed the requirement for small fleets to also be a small business
• Surplus Off-Road Opt-In for NOx (SOON) added
• Special Provisions/Compliance Extensions
  – Manufacturer delay extension if order 4 months prior to compliance date
  – Safety Determination factor added: if installation of VDECS conflicts with state/fed. MSHA req.
  – Compliance stay allowed while appeal decision is made
  – Increased time for fleets to prepare their appeal
Third Notice - Modified Text

• Updated definition to allow a portion of a fleet to be considered a Captive Attainment Area Fleet
• Extension granted to address unavailability of vehicles with Tier 3 engines

Status of Regulation

• Final Statement of Reasons to Office of Administrative Law (OAL) on April 4, 2008
• OAL has until May 16, 2008 to make a determination
• Once OAL acts, ARB will apply for EPA waiver
• Will give update to Board in December
VDECS Availability

Level 2- 50% PM Reduction

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Technology Type</th>
<th>NOx Reduction</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Control System AZ Purimuffler/Purifier</td>
<td>+ DOC + Alt Fuel</td>
<td>20%</td>
<td>1996-2002 off-road; PuriNOx</td>
</tr>
</tbody>
</table>
## Level 3 – 85 % PM Reduction

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PLUS System</th>
<th>Technology Type</th>
<th>NOx Reduction</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caterpillar</td>
<td>PLUS</td>
<td>DPF</td>
<td>N/A</td>
<td>Conditionally verified for 1996-2008 model years; off-road, rubber tired; CARB diesel</td>
</tr>
<tr>
<td>Cleaire Horizon</td>
<td>PLUS</td>
<td>DPF</td>
<td>N/A</td>
<td>Most on-road diesel engines through 2006 model year; Certain MY 2006 and 1993 or older engines with OEM diesel oxidation catalysts; CARB diesel; biodiesel. Conditionally verified for off-road engines.</td>
</tr>
<tr>
<td>DCL International Inc.</td>
<td>PLUS</td>
<td>DPF</td>
<td>N/A</td>
<td>Conditionally verified for 1996-2008 model year, rubber tired off-road; CARB diesel.</td>
</tr>
<tr>
<td>Engine Control System Combifilter</td>
<td>PLUS</td>
<td>DPF</td>
<td>N/A</td>
<td>2007 or older off-road; CARB diesel; biodiesel.</td>
</tr>
<tr>
<td>HUSS Umwelttechnik FS-MK</td>
<td>PLUS</td>
<td>DPF</td>
<td>N/A</td>
<td>Most on-road and off-road diesel engines through 2006 model year. CARB diesel; biodiesel.</td>
</tr>
</tbody>
</table>

PLUS Systems (+) indicate 2009 NOx compliance.
* These systems have been verified for use with biodiesel blends subject to certain requirements.

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## Outreach Efforts

[Image of outreach efforts]
Statewide Outreach Efforts

• 33 letters mailed out to commenters who misunderstood the regulation
• About 600 letters mailed out to dealers and manufacturers
• Locations for statewide training are currently being selected
  – Summer training to be discussed by Eric Brown

SHOWCASE

Loader with Passive DPF

Scraper with Passive DPF
Off-Road Showcase Demonstration

- $4.9 million allocated through SCAQMD (South Coast Air Quality Management District) & MSRC (Mobile Source Air Pollution Reduction Review Committee)
  - Close coordination with ARB
- Achieve early emission reductions
- Prove effectiveness of technologies on wide range of off-road engines
  - Interested fleets may view retrofits in action
- Will spur verification of many new retrofits
  - Applicants required to pursue verification concurrently with Showcase demonstration

Showcase Participants - Manufacturers

- Sixteen emission control manufacturers
- 30 systems:
  - 11 active diesel particulate filters
  - 19 passive diesel particulate filters
- 8 PM + NOx devices
- 7 fuel borne catalyst systems

<table>
<thead>
<tr>
<th>Participating Manufacturers</th>
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</thead>
<tbody>
<tr>
<td>Aaqius</td>
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<tr>
<td>Caterpillar</td>
</tr>
<tr>
<td>CDT</td>
</tr>
<tr>
<td>DCL</td>
</tr>
<tr>
<td>Dinex</td>
</tr>
<tr>
<td>Donaldson</td>
</tr>
<tr>
<td>ECS</td>
</tr>
<tr>
<td>Extengine</td>
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</table>
Showcase Update

• 18 fleets with 230 vehicles selected
• Contracts have been drafted, approved, and most of them have been signed by the fleet owners
• Six vehicles are retrofitted - rest of the retrofitting expected to start mid-May
• Temperature profile data received for most
• Devices are currently in the installation design phase while manufacturers work with fleet owners to determine the optimum location of the designed device

Snowcat Demonstration

• ARB data-logged 12 vehicles at 3 ski resorts:
  – Mammoth
  – Northstar
  – Sugarbowl
• Preliminary results of the temperature profile are relatively high (over 400° C, 40% of the time – regardless of the vehicle type)
• PistenBully will begin retrofitting Northstar vehicles with passive DPFs approximately June, 2008
U.S. EPA Supplemental Environmental Project (SEP)

- U.S. EPA settlement against 2 refiners
  - $750,000 in fines
- 13 vehicles retrofitted by the end of May
  - 9 active devices
  - 5 passive devices
  - 3 NOx control devices
- Fleet owners are satisfied and no issues or complaints have been encountered

Funding Pilot

- Need for a State program to help fleets borrow money to purchase retrofits
- Lending institutions unwilling to lend money for retrofits of vehicles on which loans are still outstanding
- Pilot would also help familiarize lending institutions with lending for retrofits
Funding Pilot (continued)

• ARB will partner with the California Pollution Control Financing Authority (CPCFA), under the California State Treasurer, to work through an existing CPCFA program called the California Capital Access Program (CalCAP)
• Loan guarantee program funded with ARB settlement funds: up to $500,000
• Project estimated to begin by September, 2008
  – Plan to have contracts in place in the next 4-8 weeks
  – Outreach to stakeholders will follow

Pilot Program Requirements

• Participants must be a small business (CalCAP)
  – 100 employees or less
  – Less than 10 million (averaged over 3 years) gross annual receipts
• Must apply through participating CalCAP lenders
• Funds to be used to install exhaust retrofits on in-use off-road diesel vehicles
Funding Available after Pilot Program

• Goals after completion of funding pilot
  – Understand the financial aspects of the loan process and loan types
  – Establish ground work for a larger comprehensive loan program for the State
    • Fleets to have the opportunity to secure affordable funding through a loan guaranteed by ARB
    • Guaranteed loan opportunity available by 2010

Off-Road Contacts

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Johnny Karim:
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Kim Heroy-Rogalski, Manager
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Erik White, Chief
Heavy-Duty Diesel In-Use Strategies Branch
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(916) 322-1017

Diesel vehicle information hot line:
(866) 6-DIESEL

Off-Road Regulation - www.arb.ca.gov/msprog/ordiesel/ordiesel.htm
Verified Devices - www.arb.ca.gov/diesel/verdev/verdev.htm
Carl Moyer Program - www.arb.ca.gov/msprog/moyer/moyer.htm
Diesel Off-road On-line Reporting System (DOORS)

What is DOORS?

• Diesel Off-road On-line Reporting System
  • Gives fleets a tool to compile fleet information
  • Standardizes the way fleet information is submitted to ARB for review
  • Meets the reporting requirements stated in the regulation
Initial Reporting Requirements

- A fleet owner must report what the fleet looked like as of March 1, 2009
- Required information:
  - The fleet owner information
  - Vehicle information
  - Engine information
  - VDEC’s information
- Initial reporting date depends on fleet size:

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<td>Small</td>
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Annual Reporting

- Report what the fleet looked like on March 1st of the reporting year
- Report any changes to the fleet from the previous year
  - Includes VDECS installed, vehicles replaced, etc.
- If final compliance target is not met, reporting must continue beyond last designated reporting date
- Reporting dates vary by fleet size:

<table>
<thead>
<tr>
<th>Fleet Size Category</th>
<th>Reporting Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>August 1\textsuperscript{st}: 2014-2026</td>
</tr>
<tr>
<td>Medium</td>
<td>June 1\textsuperscript{st}: 2012-2021</td>
</tr>
<tr>
<td>Large</td>
<td>April 1\textsuperscript{st}: 2010-2021</td>
</tr>
</tbody>
</table>
(DOORS) Contacts

Eric Brown, Staff
ebrown@arb.ca.gov
(916) 322-8939

Elizabeth Yura, Staff
eyura@arb.ca.gov
(916) 323-2397

Statewide Training/Outreach Discussion
Statewide Outreach Efforts

- Half-day trainings will be held from mid-July through August
- Proposed training locations:
  - Bakersfield
  - El Monte
  - Fresno
  - Oakland
  - Redding
  - Riverside
  - Sacramento
  - San Diego
  - San Jose
  - San Luis Obispo
  - Truckee

Proposed Training Topics

- In-depth discussion of the regulation
  - What do I need to do to comply?
- Diesel Off-road On-line Reporting System (DOORS)
  - How do I report my fleet information to ARB?
- Fleet Average Calculator
  - How do I use the calculator to evaluate potential compliance paths?
Proposed Training Topics (continued)

- Summary of available VDECS
- VDECS manufactures on site to answer specific installation questions
- Local Moyer district contacts made available to answer questions
- Offer to meet later with individual fleets

Contact

Eric Brown, Staff
ebrown@arb.ca.gov
(916) 322-8939
Off-road Frequently Asked Questions (FAQs)

- Staff is creating a list of FAQs for off-road website
- Will discuss and provide guidance on a variety of topics:
  - Exemptions/extensions
  - Definitions
  - Applicability
  - Other regulatory provisions
- Sample list of FAQ topics
- Additional suggestions should be emailed to Elizabeth Yura (eyura@arb.ca.gov)
OriAG Organization and Planning

Ideas / Subcommittees

- Safety
- Outreach
- DOORS
- Additional?
Public Comment Period