



Off-Road Implementation Advisory Group

May 12, 2008

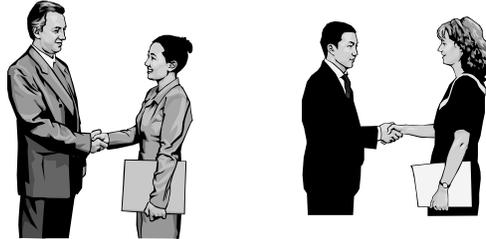
California Environmental Protection Agency
Air Resources Board



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

Fleet Size Category	Description
Small	Fleet \leq 2,500 hp, or Municipality fleet in low population county
Medium	Fleet with 2,501 to 5,000 hp
Large	Fleet with more than 5,000 hp

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

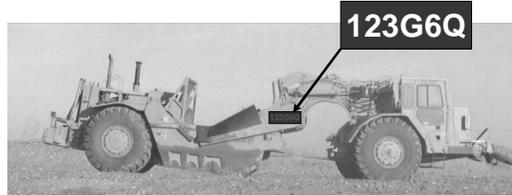
Initial Reporting Requirements

- 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:

Fleet Size Category	Initial Reporting Date
Large	April 1, 2009
Medium	June 1, 2009
Small	August 1, 2009

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



Includes:

Annual reporting requirements

Annual record keeping requirements



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 are 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

NO_x Requirements

Two ways to meet the NO_x requirements:

- NO_x fleet average targets approach
 - Meet NO_x 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%)

NO_x 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

Product Name	P L U S	Technology Type	NOx Reduction	Applicability
Engine Control System AZ Purimuffler/Purifier	+	DOC + Alt Fuel	20%	1996-2002 off-road; PuriNOx

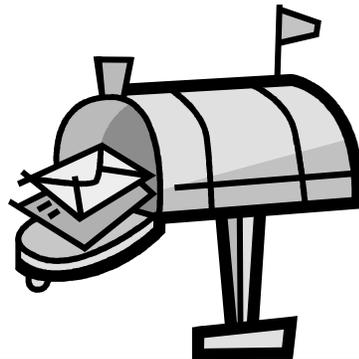
Level 3 – 85 % PM Reduction

Product Name	PLUS	Technology Type	NOx Reduction	Applicability
Caterpillar		DPF	N/A	Conditionally verified for 1996-2008 model years; off-road, rubber tired; CARB diesel.
Cleaire Horizon	+	DPF	N/A	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.
DCL International Inc.		DPF	N/A	Conditionally verified for 1996-2008 model year, rubber tired off-road ; CARB diesel.
Engine Control System Combifilter	+	DPF	N/A	2007 or older off-road; CARB diesel; biodiesel.*
HUSS Umwelttechnik FS-MK	+	DPF	N/A	Most on-road and off-road diesel engines through 2006 model year. CARB diesel; biodiesel.*

PLUS Systems (+) indicate 2009 N02 compliance.

* These systems have been verified for use with biodiesel blends subject to certain requirements.

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

Participating Manufacturers	
Aaqius	Huss
Caterpillar	Johnson Matthey
CDT	Mann-Hummel
DCL	Nett Tech
Dinex	Purem
Donaldson	Recat-ESW/ETI
ECS	Rypos
Extengine	Sud Chemie

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

Erik White, Chief
Heavy-Duty Diesel In-Use Strategies Branch
ewhite@arb.ca.gov
(916) 322-1017

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

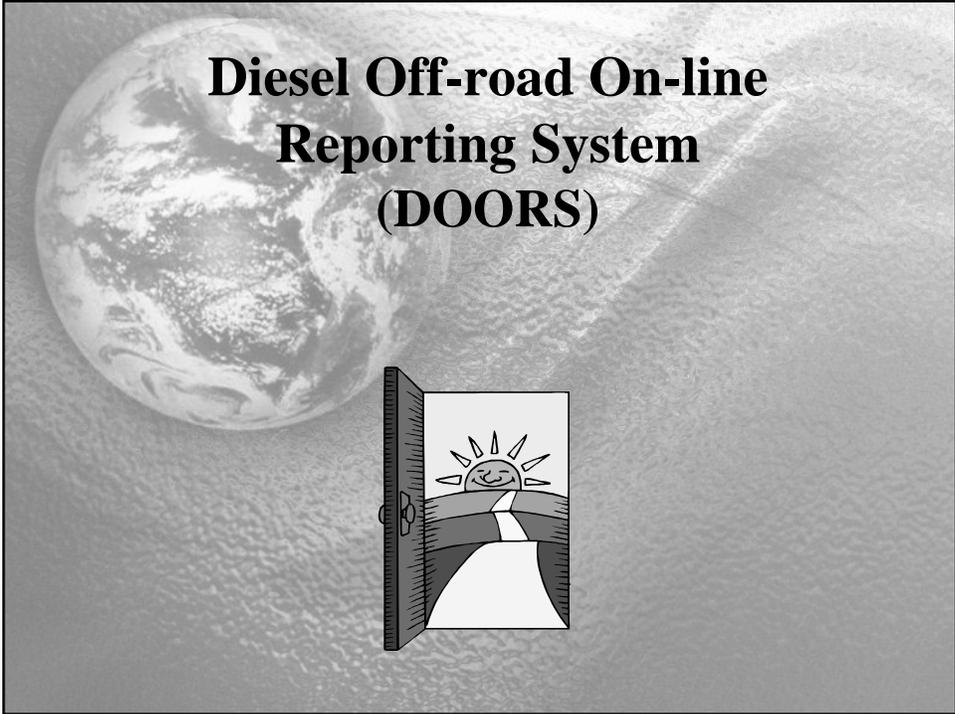
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Carl Moyer Program:
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(916) 324-6971

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:

Fleet Size Category	Initial Reporting Date
Large	April 1, 2009
Medium	June 1, 2009
Small	August 1, 2009

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:

Fleet Size Category	Reporting Date
Small	August 1 st : 2014-2026
Medium	June 1 st : 2012-2021
Large	April 1 st : 2010-2021

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

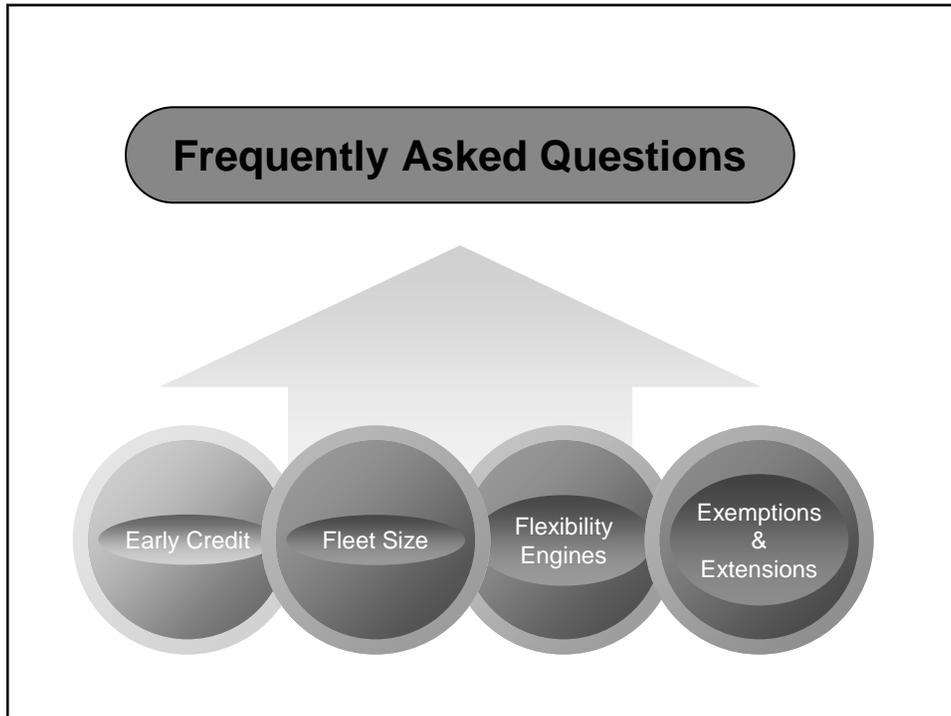
- In-depth discussion of the regulation
 - What do I need to do to comply?
- Diesel Off-road On-line Reporting System (DOORS)
 - How do I report my fleet information to ARB?
- Fleet Average Calculator
 - How do I use the calculator to evaluate potential compliance paths?

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

