Regulatory Update and Proposed Amendments to the Regulation for In-Use Off-Road Diesel Fueled Fleets

January 22, 2009
Sacramento, CA

California Environmental Protection Agency

Air Resources Board

Overview

- Regulation Background
- Implementation Update
- Technology Update
- Emissions
- Proposed Changes

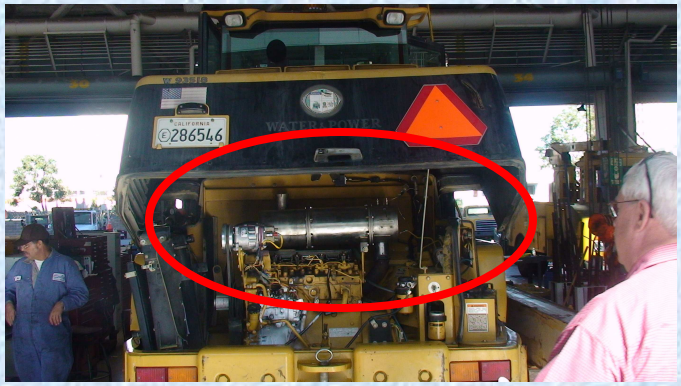
Regulation Background

Regulatory Status

- Approved by Board July 26, 2007
  - Directed staff to report back by January 2009
  - Future updates in 2010, 2013 and 2017
- U.S. EPA approval needed to fully enforce regulation
  - Request submitted on August 12, 2008
  - Awaiting decision

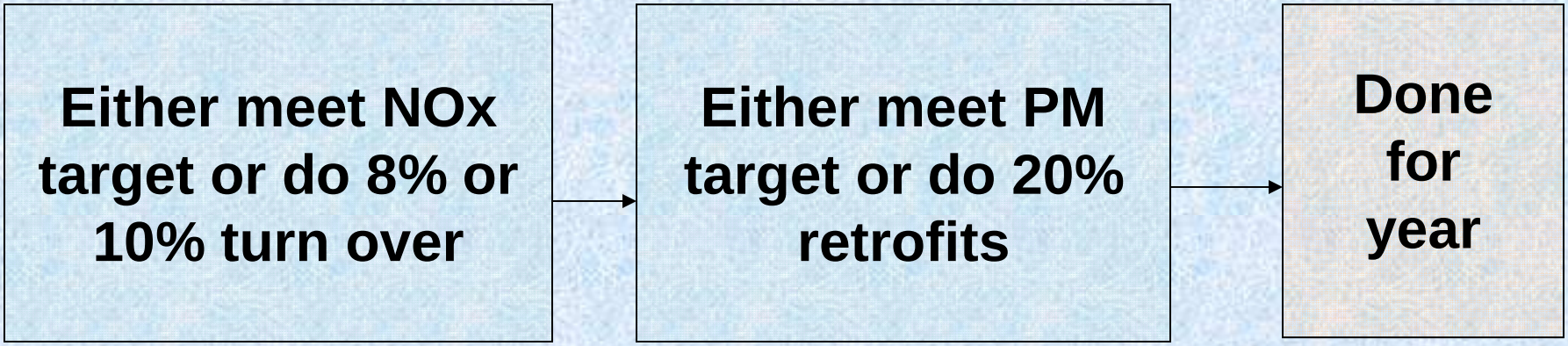
Key Dates

- June 15, 2008
  - Idling
  - Sales disclosure to buyers
  - Enforcement has begun
- March 1, 2009
  - Cannot add Tier 0s
  - Deadline for early double retrofit credit
- April 1 – August 1, 2009
  - Initial reporting required
  - Labeling 30 days after receive identification numbers
- March 1, 2010
  - 1st fleet average compliance date for large fleets
- 2013 and 2015
  - 1st fleet average compliance date for medium and small fleets

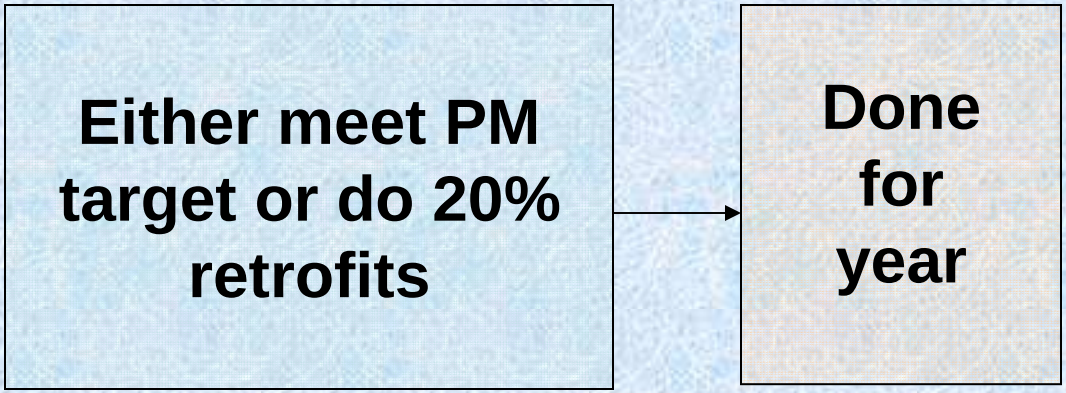


Annual Compliance Process

Large and Medium Fleets: NOx and PM Requirements
Begins 2010 for Large, 2013 for Medium fleets



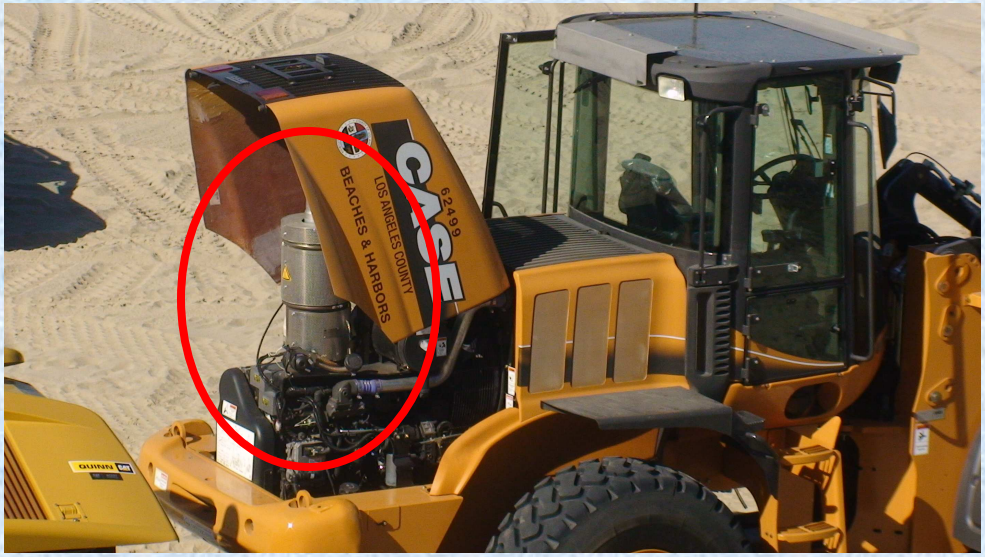
Small Fleets: PM Requirements ONLY
Begins 2015

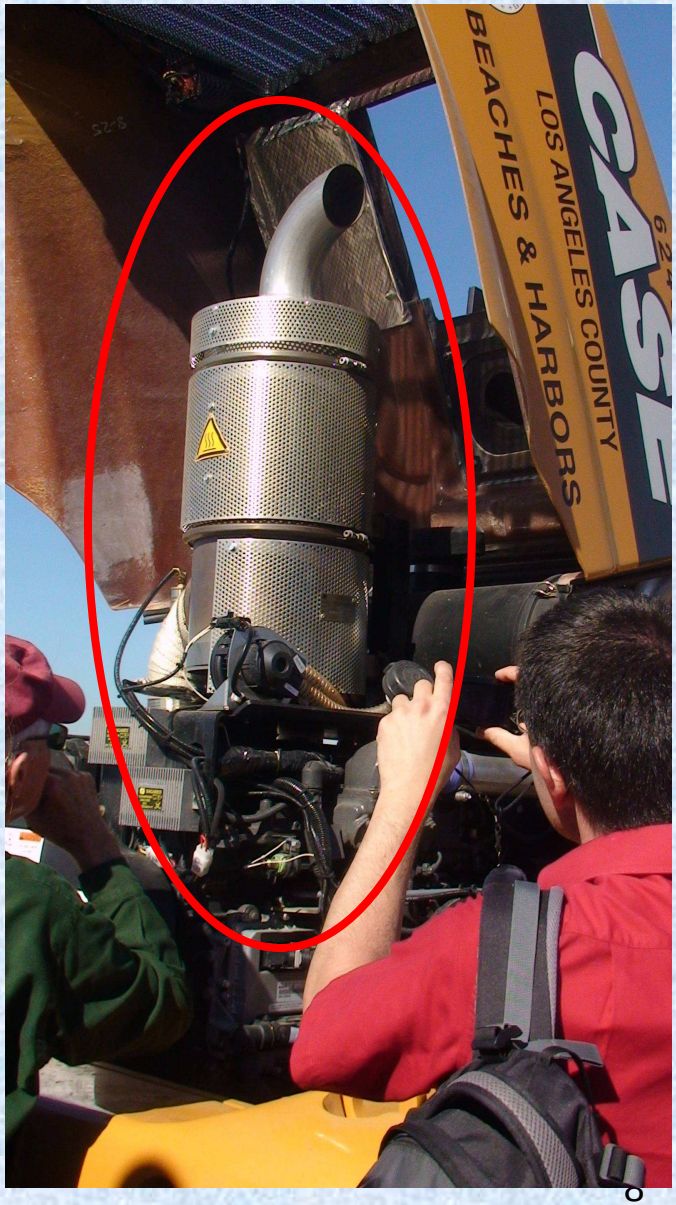


SIP Requirements

- SIP driven by air quality in South Coast and San Joaquin Valley
- Regulation is an integral part of SIP
- PM reductions needed
  - PM2.5 attainment target date
  - 2014 for both SC and SJV
- NOx reductions needed
  - 8-hr ozone attainment target date
  - 2017 – SJV emission reduction commitment
  - 2023 for both SC and SJV

Implementation Update





Statewide Training Seminars

- 16 free half-day training seminars in 15 cities
- Sent over 12,000 flyers
- Advertised in local newspapers
- Over 1,500 attendees
- 6 more seminars being scheduled

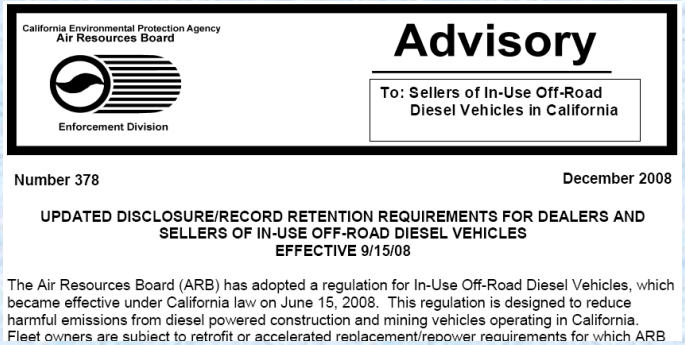
Other Public Outreach

- Over 50 meetings, conferences, and events
- Multiple mailings and emails
- Working with CSLB
  - 15,000 flyers/month in renewal notices
- Training videos
- Radio station public service announcements

Guidance Documents

Currently Available:

- Implementation advisories
- Enforcement advisories
- Frequently Asked Questions (FAQs)
- Fact Sheets



California Environmental Protection Agency
Air Resources Board

Enforcement Division

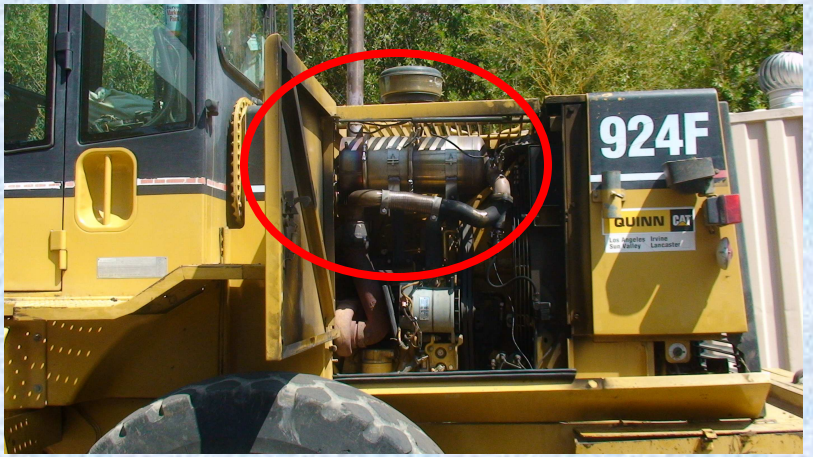
Advisory

To: Sellers of In-Use Off-Road Diesel Vehicles in California

Number 378 December 2008

UPDATED DISCLOSURE/RECORD RETENTION REQUIREMENTS FOR DEALERS AND SELLERS OF IN-USE OFF-ROAD DIESEL VEHICLES EFFECTIVE 9/15/08

The Air Resources Board (ARB) has adopted a regulation for In-Use Off-Road Diesel Vehicles, which became effective under California law on June 15, 2008. This regulation is designed to reduce harmful emissions from diesel powered construction and mining vehicles operating in California. Fleet owners are subject to retrofit or accelerated replacement/repower requirements for which ARB



Under Development:

- Retrofit feasibility
- Regulation applicability to unique vehicles

Off-Road Implementation Advisory Group

- Created March 2008
- 50 members representing range of stakeholders
- Three general meetings and numerous subcommittee meetings
  - All were webcast
- Subcommittees:
  - Safety, Fleets, Diesel Emission Control Systems, Reporting
- Input on all guidance documents and training presentations

ORIAG meeting

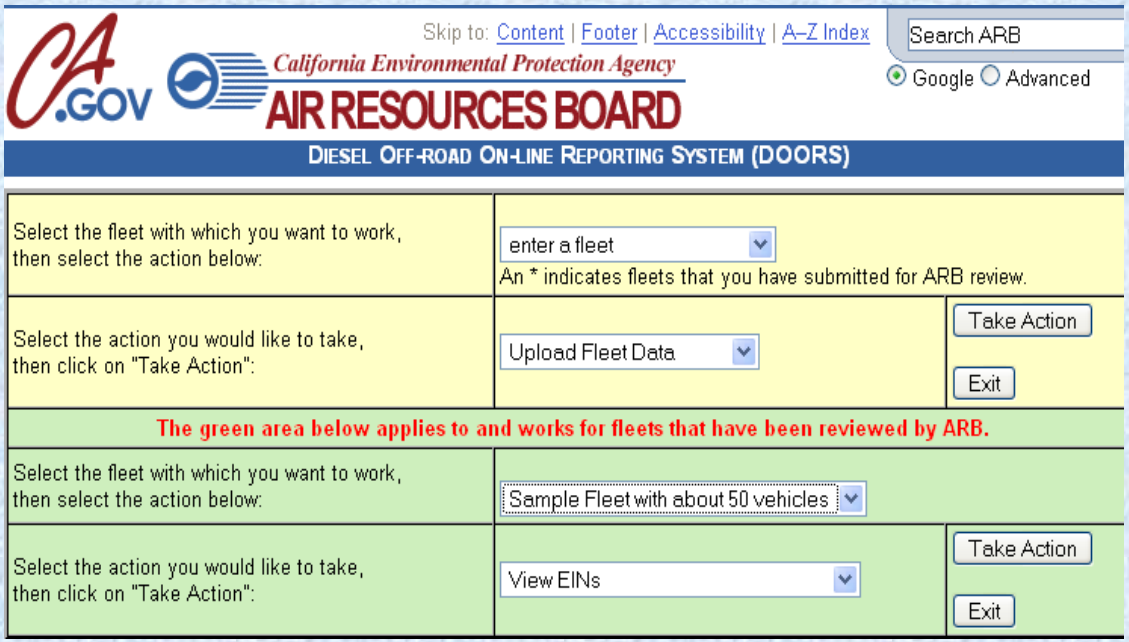
DOORS Reporting System

- An on-line tool which allows fleets to report electronically
- Retains fleet data for future reporting
- Includes additional features such as automated compliance planning
- User guides available online
- Toll-free hotline
- **Currently 143 fleets with 10,500 vehicles already reported**

DOORS and Labeling

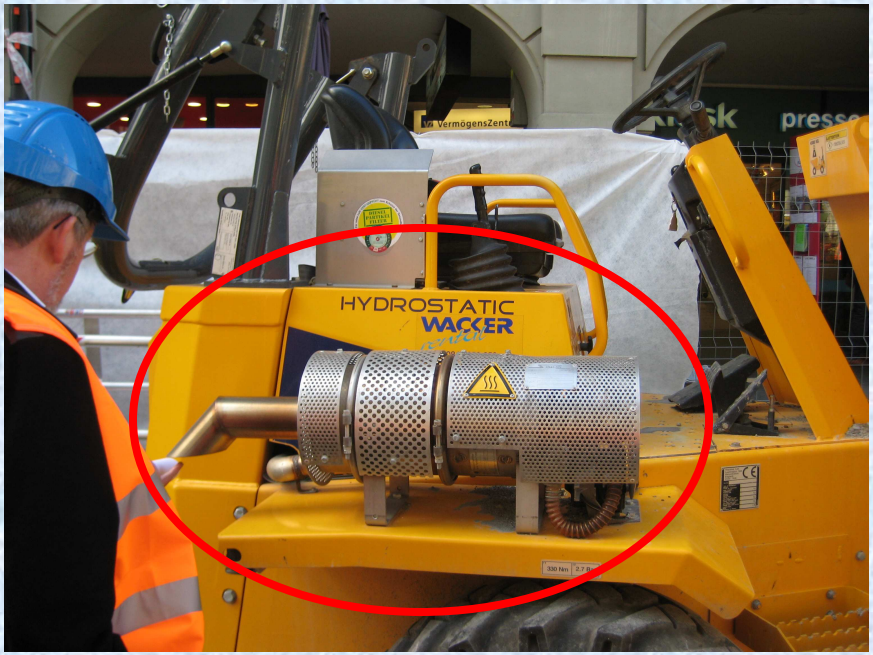
Vehicle labeled with EIN

DB8B97



DOORS on-line screen

Technology Update



Retrofit Verification

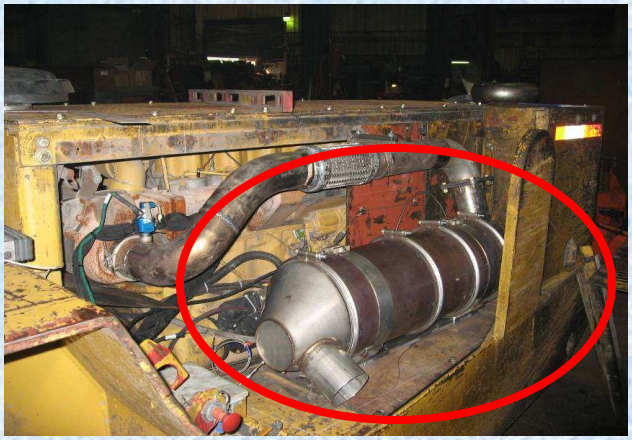
- Ensures emission reductions and durability
- Provides end user warranty
  - 4-5 years and 2,600-4,200 operating hours
  - A current list of verified devices is located at: www.arb.ca.gov/diesel/verdev/verdev.htm

Level	PM Reduction	Typical Device
2	≥ 50%	Flow-thru filter
3	≥ 85%	Particulate filter

DPF durability demonstration on concrete

Active/Passive DPFs

- PM collected in DPF over time
- Trapped PM must be burned off or "regenerated“ periodically
  - Active regeneration: Needs heat to regenerate – electricity or burning additional fuel
  - Passive regeneration: No outside energy required
  - Some fleets have a strong preference or need for passive filters



Verified Devices Before July 2007

- Only three systems, all active DPFs

Product	Applicability
Cleaire Horizon	Conditionally verified, active plug-in
Engine Control System Combifilter	2007 or older, active plug-in
HUSS Umwelttechnik FS_MK	Most engines through 2008 model year, active fuel-burner

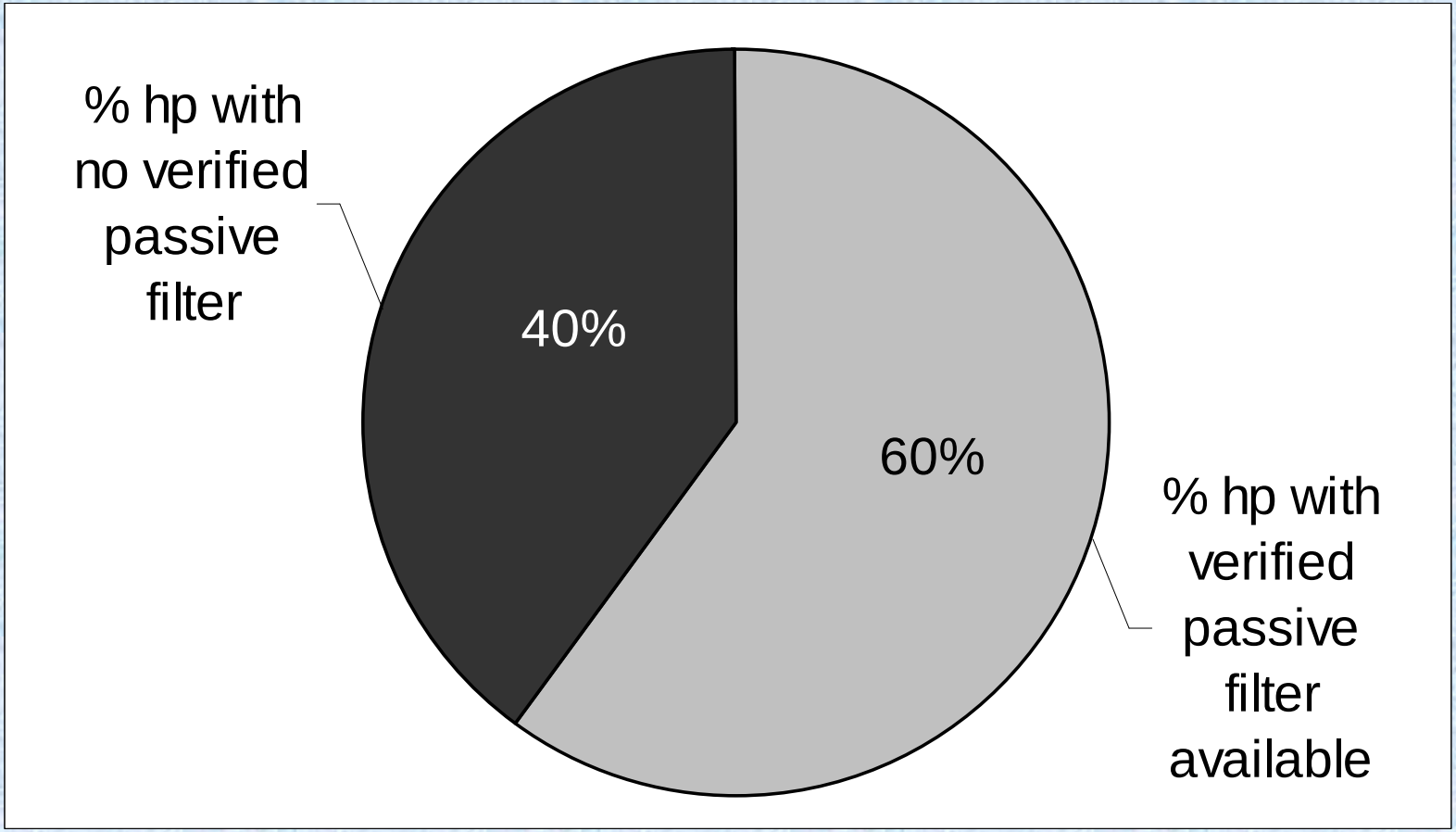
Verified Devices Since July 2007

- All passive

Product	**Applicability**	Date Verified
Caterpillar DPF	Many 1996-2008 model year engines; 175-600 hp, passive	January 22, 2008, expanded October 24, 2008
Cleaire Lonestar	Conditionally verified for many 1996 – 2009, passive + 40% NOx reduction	December 23, 2008
DCL MINE-X Sootfilter	Conditionally verified for 1996-2008 model year, rubber tired	January 24, 2008
Engine Control Systems' Purifilter	Conditionally verified for many 1996-2008 model years, passive	October 20, 2008

Verified Devices - www.arb.ca.gov/diesel/verdev/verdev.htm

Passive Retrofit Availability*



* Dependent on operating temperatures.

Off-Road Retrofit Demonstration Projects

Showcase and U.S. EPA SEP

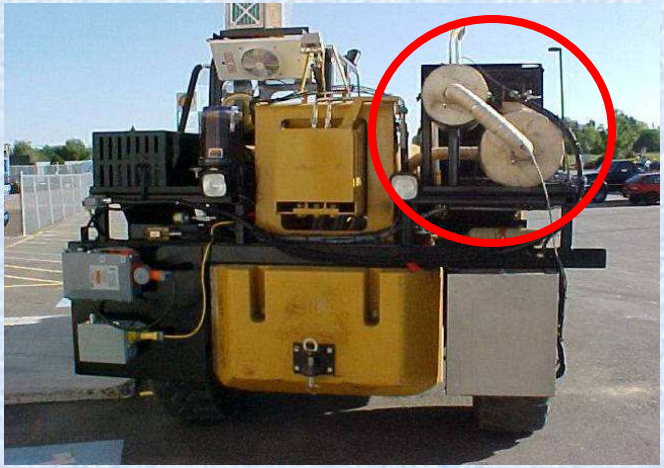
- Funded for approximately $6.0 million
- Engines: Tier 0 to Tier 3
- 35 retrofits completed

With retrofit

Without retrofit

Overall Findings

- More vehicles than expected can be retrofit with lower cost passive DPFs
- Off-road retrofits are durable and function well
- Proper installation critical
- Positive reaction from participating fleets
- Slower start to demonstrations than expected



Retrofit Costs

- Passive retrofits available for more vehicles than originally estimated
  - Too few installations to evaluate overall cost
  - Caterpillar system costs in line with staff's estimates
    - $15,000- $22,000
  - Passive retrofits cost less than active systems
- Active systems still more expensive
  - Costs based on a limited number of installations
  - ~ 30% higher costs than original staff estimate
- Overall retrofit costs expected to decrease over time

Retrofit Safety

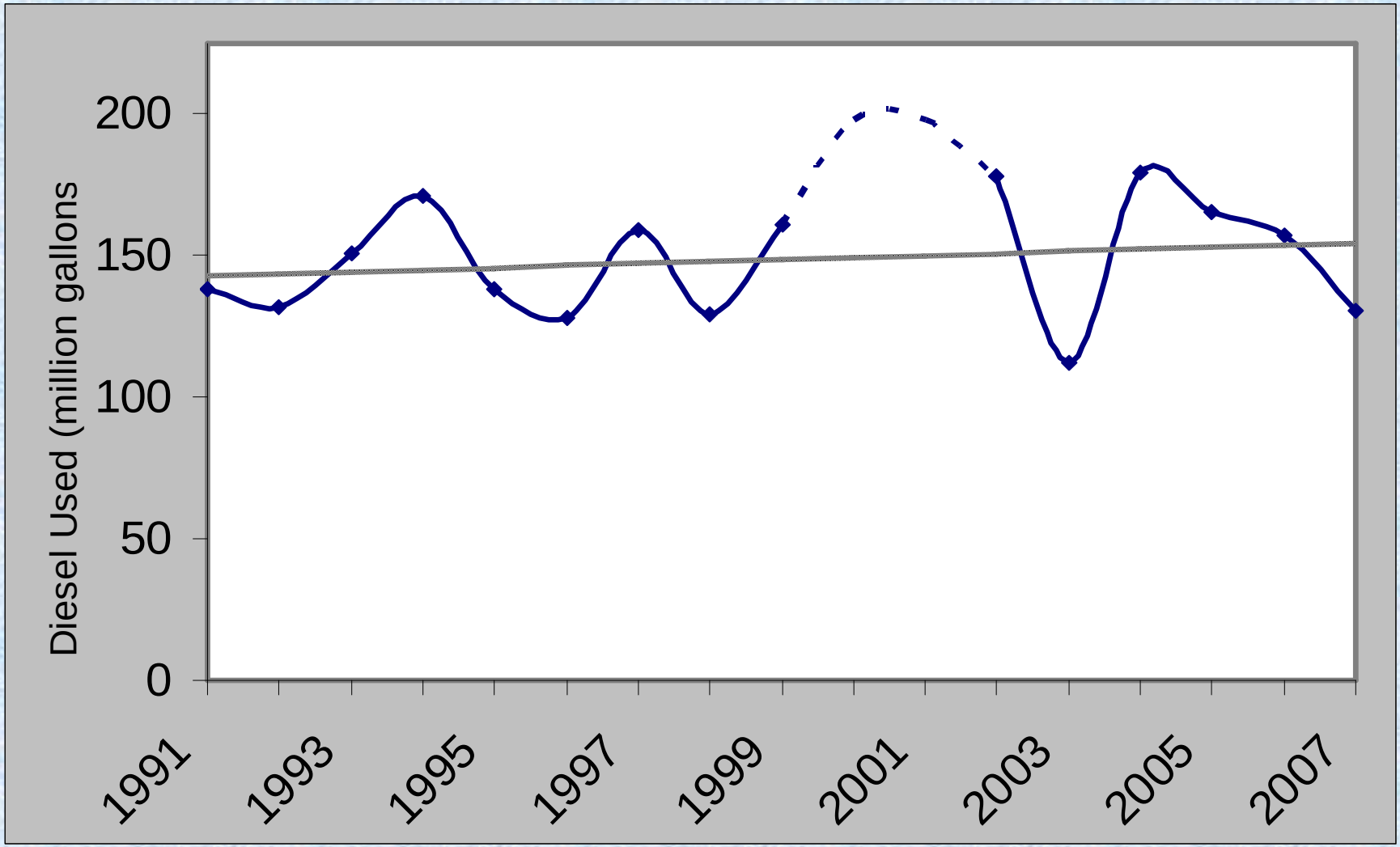
- Regulation already exempts any vehicle that cannot be retrofit safely
  - Includes appeal procedure
  - Staff working with CalOSHA and industry work group to develop protocol for evaluation of safety claims
- AGC and Operating Engineers petition CalOSHA to change safety standards
  - CalOSHA Board directed staff to work with the Petitioners and ARB

Current Emissions Estimates

Factors Affecting Emissions

- Decrease in activity could reduce emissions
- Changes in vehicle turnover could change emissions
  - Emissions up if slower new vehicle purchases
  - Emissions down if faster retirement of older vehicles
- Staff investigated current economic indicators

Diesel Fuel Used in Construction: California



Current Relief Provisions

- Early credit (before March 1, 2009)
  - Credit for over 24% turnover
  - Credit for repowers
  - Double credit for retrofits
- Downsize after March 1, 2009
  - Turnover and retrofit credit
- Designate low use
  - Turnover credit

Proposed Modifications

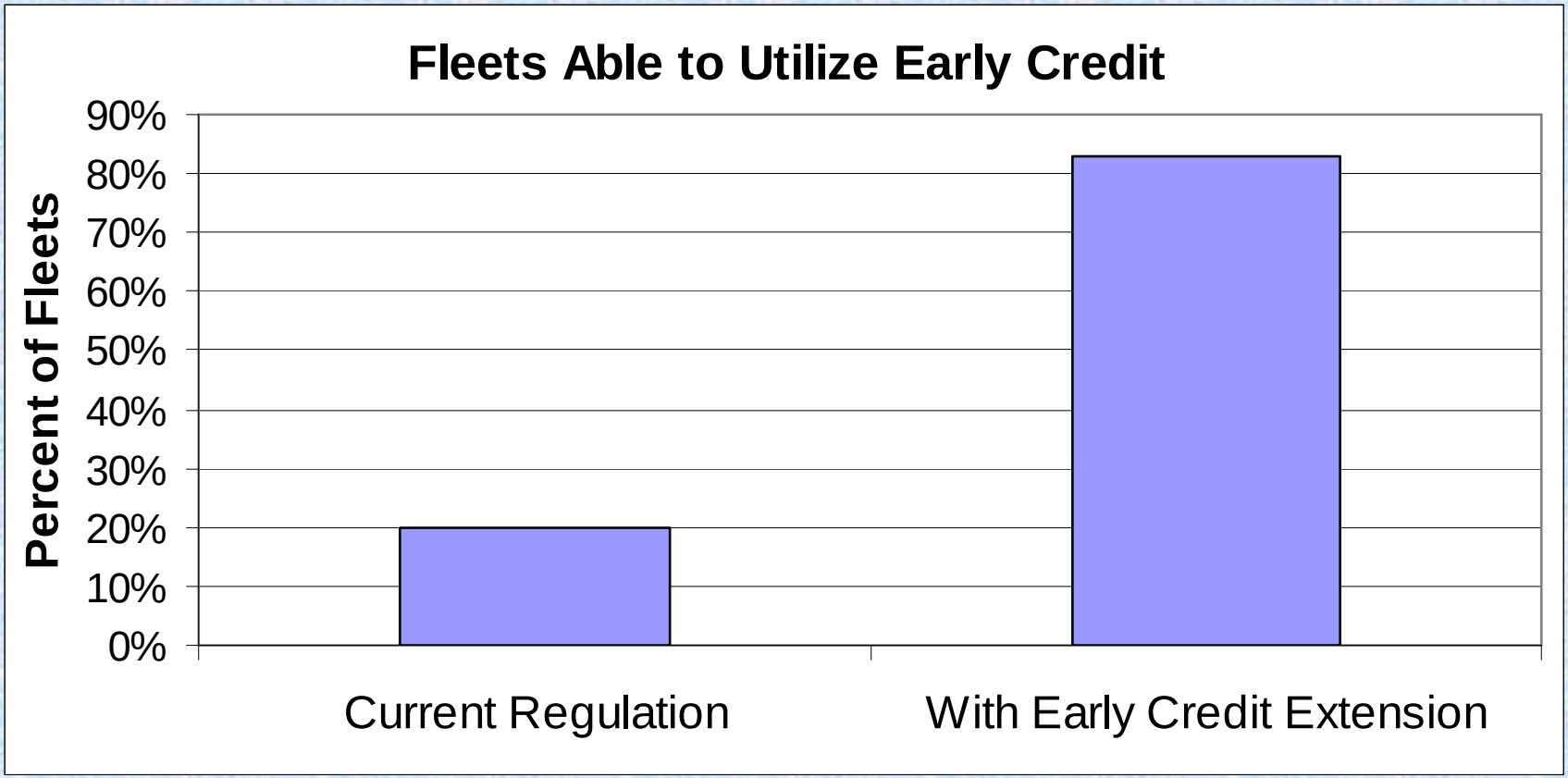
Installation under hood

Extend Early PM Double Credit

- Extend the double credit for early PM retrofits deadline by 10 months from March 1, 2009 to January 1, 2010
- Will allow more fleets to take advantage of this early credit provision
- Limited emissions impact

Early Credit Availability

Fleets can utilize early credit and cut their PM requirements for 2010 in half



Other Minor Clarifications

- Clarify provisions for Tier 1 vehicles
- Clarify that all sellers must meet the disclosure requirements
- Retrofit reporting
- Clarify provisions for changing fleet size

Staff Recommendation

Approve the proposed amendments