Public Workshop to Discuss Reducing Emissions from Offroad Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards

Proposed Regulatory Concepts

May 18, 2005
Sacramento, California

California Environmental Protection Agency
Air Resources Board

Overview

♦ Background
♦ Applicability
♦ Updated Regulatory Concepts
♦ Next Steps
Background

Goals

♦ Develop statewide control measure to address emissions from mobile diesel-fueled cargo handling equipment
  – Achieve maximum emission reductions (both near term and long term) for PM and NOx
♦ Consideration by the Board in fourth quarter 2005
Applicability

Ports

- San Diego
- Los Angeles
- Long Beach
- Port Hueneme
- Richmond
- San Francisco
- Oakland
- Stockton
- Sacramento
- Pittsburg
- Crockett
- Redwood City
- Antioch, Alameda, Benicia, Port Chicago
- Port of Humboldt Bay
- Los Angeles
- Long Beach
- San Diego
**Intermodal Rail Yards**

- Richmond (2)
- Oakland (2)
- Stockton
- Lathrop
- Fresno
- Barstow
- San Bernardino
- City of Industry
- Los Angeles (2)
- Commerce
- Long Beach
- Stockton
- Lathrop
- Fresno
- Barstow
- San Bernardino
- City of Industry
- Los Angeles (2)
- Commerce
- Long Beach

**Examples of Cargo Handling Equipment Types**

- yard trucks
- top handlers
- side handlers
- reach stackers
- rubber-tired gantry cranes
- forklifts
- euclids
- skid steer loaders
- rubber-tired loaders
- sweepers
- dozers
- excavators
- mobile cranes
- railcar movers
Proposed Regulatory Concepts

Overview: Modifications to the Preliminary Concepts

- Added definitions for equipment types
- Removed idling provision
- Defined requirements for newly purchased equipment
- Revised requirements for yard trucks and all other equipment
- Added record keeping and reporting requirements
- Added prohibition clause for selling, renting, and leasing
Proposed Concepts for Newly Purchased or Leased Equipment

- DMV Registered (onroad) equipment
  - meet current year onroad standard
- Non-registered (offroad) equipment
  1. meet current year onroad standard; or
  2. if not feasible, meet Tier 4 offroad standard for model year and rated hp; or
  3. if not feasible, meet Tier 2 or 3 offroad standard for model year and rated hp with highest level available VDECS

Process/criteria for determining feasibility will be developed

In-Use Yard Trucks

Summary of Changes to Proposed Concepts

- Accelerated turnover 2 to 3 years
  - based on 10-year useful life
  - more time for multiple vehicles, installed controls, and onroad engines
- Diesel PM standard
  - 2007 or later onroad, Tier 4 offroad, or 0.01 g/bhp-hr
- Oldest engines (Tiers 0 - 1) replace first
### In-Use Yard Trucks

#### Compliance Table: pre-1996 to 2002 Offroad Engines

<table>
<thead>
<tr>
<th>Yard Truck with Offroad Engine Installed</th>
<th>Diesel PM Standard</th>
<th>Compliance Date*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No VDECS installed by December 31, 2006</strong></td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr</td>
<td>2007 - 2007 - 2008</td>
</tr>
<tr>
<td><strong>Pre-1996 to 2002:</strong> Level VDECS installed by December 31, 2006</td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr</td>
<td>2008 - 2008 - 2009</td>
</tr>
</tbody>
</table>

#### Compliance Table: 2003 to 2006 Offroad Engines

<table>
<thead>
<tr>
<th>Yard Truck with Offroad Engine Installed</th>
<th>Diesel PM Standard</th>
<th>Compliance Date*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2003 to 2006:</strong> No VDECS installed by December 31, 2006</td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr</td>
<td>model year + 7 years - model year + 7 years - model year + 8 years - model year + 9 years</td>
</tr>
<tr>
<td><strong>2004 to 2006:</strong> Level 1 VDECS installed by December 31, 2006</td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr</td>
<td>model year + 8 years - model year + 8 years - model year + 9 years - model year + 10 years</td>
</tr>
<tr>
<td><strong>2005 to 2006:</strong> Level 2 VDECS installed by December 31, 2006</td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr</td>
<td>model year + 9 years - model year + 9 years - model year + 10 years - model year + 11 years</td>
</tr>
<tr>
<td><strong>2006 to 2006:</strong> Level 3 VDECS installed by December 31, 2006</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
**In-Use Yard Trucks**

**Compliance Table:**
2003 to 2006 Onroad Engines

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Diesel PM Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996 to 2006:</td>
<td>Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/HP-hr</td>
</tr>
<tr>
<td>1998 to 2006:</td>
<td>Any Level VDECS installed by December 31, 2006</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compliance Data*</th>
<th>Fleets with 1 to 3 yard trucks</th>
<th>Fleets with 4 or more yard trucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>Model year + 8 years</td>
<td>Model year + 8 years</td>
</tr>
<tr>
<td>50%</td>
<td>Model year + 9 years</td>
<td>Model year + 9 years</td>
</tr>
<tr>
<td>100%</td>
<td>Model year + 10 years</td>
<td>Model year + 11 years</td>
</tr>
</tbody>
</table>

**In-Use Yard Trucks**

**Additional Standards**

- **Offroad engines**
  - meet HC, NOx, NMHC+NOx, and CO certified offroad standards for model year and horsepower

- **Onroad engines**
  - meet HC, NOx, NMHC, NMHC+NOx, and CO certified onroad standards for model year and horsepower
4 BACT options
1. 0.01 g/bhp-hr PM onroad or Tier 4 offroad
2. 0.1 g/bhp-hr PM onroad or Tier 2/3 offroad + highest level VDECS
3. alternative fuel or heavy-duty pilot ignition engine
4. highest level VDECS

If option 2 or 4 is chosen:
– meet Tier 4 offroad by Dec. 31, 2015

Compliance Extensions Added

### In-Use Equipment Excluding Yard Trucks
Summary of Changes to Proposed Concepts

<table>
<thead>
<tr>
<th>Group</th>
<th>Engine Model Years</th>
<th>Fleets with 3 or Fewer 25%</th>
<th>Fleets with 3 or Fewer 50%</th>
<th>Fleets with 3 or Fewer 75%</th>
<th>Fleets with 3 or Fewer 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>pre-1988</td>
<td>2007</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
</tr>
</tbody>
</table>

* Compliance date refers to December 31st of the year indicated.
In-Use Equipment Excluding Yard Trucks

Compliance Extensions

♦ No VDECS available
  – annual extension (limited to two one-year extensions)
♦ Early retirement
  – if retired within one year of compliance date
♦ Use of experimental Diesel PM Controls
  – up to 2 year extension

Record Keeping Requirements

♦ Annual Record Keeping
  – keep on hand (only have to submit with compliance plan and demonstration of compliance below)
    • owner/operator information
    • equipment/engine information
    • demonstration of compliance
Reporting Requirements

♦ Compliance Plan
  – submit by January 31, 2007
  – not binding; want to ensure owner/operator is aware of compliance requirements and has developed plan

♦ Demonstration of Compliance
  – submit by earliest applicable compliance date
  – identify control strategy implemented

♦ Annual Reporting
  – submit annually by January 31st beginning in 2007
  – include company and contact information and location of equipment

Prohibitions

♦ Can’t knowingly sell, rent, or lease new or used cargo handling equipment that does not meet the performance requirements
Next Steps

♦ Yard truck testing  
♦ Emissions inventory  
♦ Impact Analysis  
♦ Stakeholder meetings  
♦ Workgroup meetings  
♦ Next public workshop late summer 2005

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