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

November 10, 2004

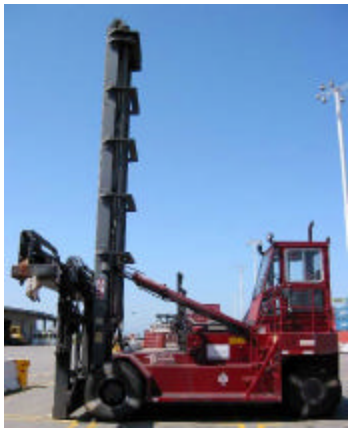
Sacramento, California

California Environmental Protection Agency

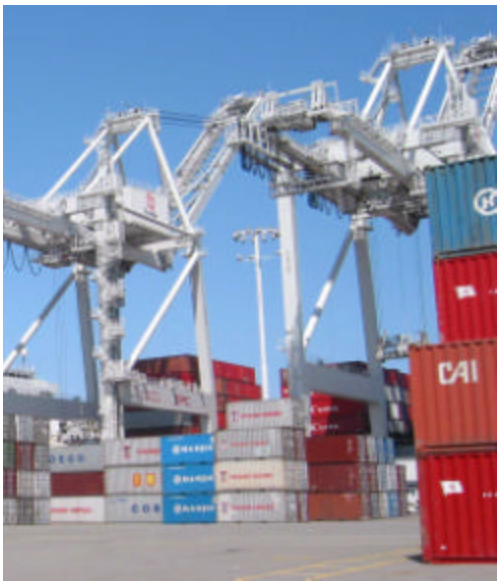
Air Resources Board

Overview

- Background
- Applicability
- Survey and Inventory
- 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

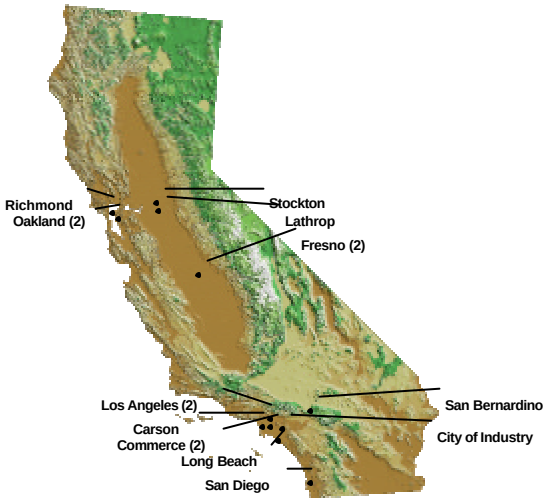
Applicability

Why Only Ports and Intermodal Rail Yards?

- Proposed off-road in-use diesel engine regulation will address all other cargo handling equipment
- Need to address environmental justice concerns
- Majority of emissions from cargo handling equipment occurs at ports and intermodal rail facilities

Ports

Intermodal Rail Yards



Equipment Types

- yard trucks
- top handlers
- side handlers
- reach stackers
- rubber-tired gantry cranes
- forklifts
- skid steer loaders
- rubber-tired loaders
- sweepers
- dozers
- excavators
- cranes

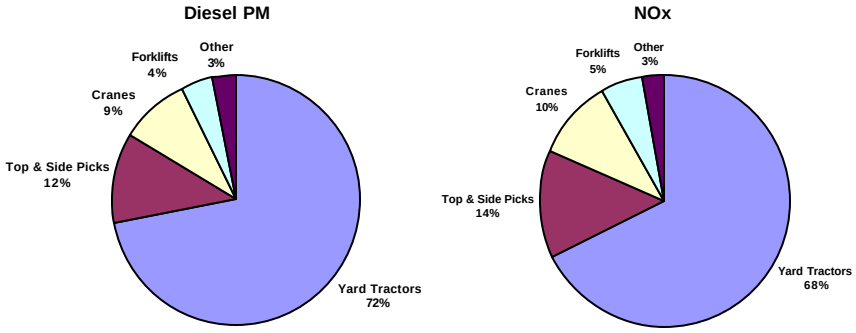
Survey & Inventory

Emissions Inventory

- Off-road inventory updates that will include cargo handling equipment are in progress
- Surveying port and intermodal rail yard terminals will provide valuable information to enhance inventory

Distribution of Emissions for Cargo Handling Equipment Categories

Ports of Los Angeles & Long Beach



Notes:

- "Cranes" includes mobile cranes, RTG cranes, and reach stackers.
- "Other" includes rubber tired loaders, sweepers, skid steer loaders, dozers and excavators.

Cargo Handling Equipment Survey

- Purpose
  - obtain representative sampling
  - enhance off-road emissions inventory
  - aid in estimating emission reductions and cost of proposed regulatory strategies
- Participants
  - ports and intermodal rail yards
  - Ports of Los Angeles and Long Beach to provide only the information not already covered in their previous surveys
- Expected distribution in November 2004

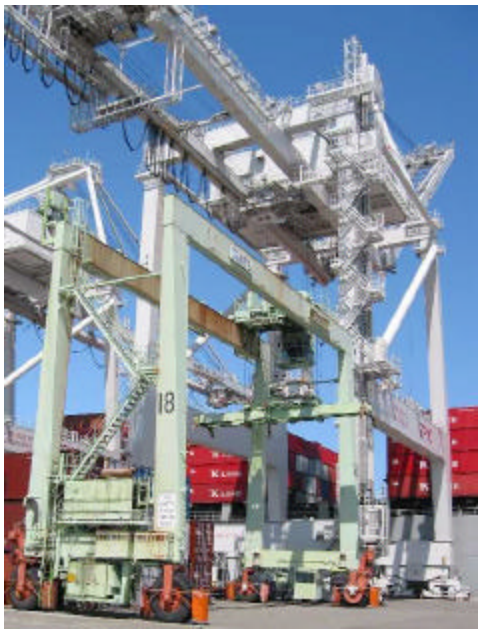
What Does the Survey Ask?

- Equipment and engine data
  - make, model, year, fuel type, horsepower, average annual hours, repower and rebuild data
- Emission Control Equipment
  - type, year installed, cost of equipment and maintenance, grants applied
- Forecasted Growth
  - expected increases in equipment and hours for 2010 and 2020

When Will Survey Results Be Available?

- Return date of January 15, 2005
- Preliminary summaries will be presented at the next public workshop (first quarter 2005)
- Data summaries will be included in staff report

Proposed Regulatory Concepts



Purpose and Applicability

- Purpose: reduce diesel PM and criteria pollutant emissions
- Applicability: any person who sells, offers for sale, leases, purchases, owns, or operates any diesel-fueled mobile cargo handling equipment at a port or intermodal rail yard in California

Exemptions

- Cargo handling equipment not located at ports or intermodal rail yards
- Cargo handling equipment that operates using alternative fuels or spark-ignited engines
- Other exemptions may be added through the regulatory process

Performance Standard Goals

- Take into account that yard trucks have the biggest contribution of emissions
- Apply appropriate BACT for equipment categories
- Achieve both near term and long term reductions
- Accelerate turnover to Tier 4 off-road standards or 2007 on-road engines, if feasible, for entire fleet

Performance Requirements - All Equipment

- Reduce unnecessary idling
- When adding equipment to the fleet after January 1, 2006, buy the cleanest available (i.e., 2004 or newer certified on-road engine, alternative fueled engine, new certified off-road engine with verified control device, etc.)

Performance Requirements -
Yard Trucks (In-Use)

Model Year or Effective* Model Year	Standard	Compliance Date
Pre-1996	Install 2004 or later certified on-road engine or equivalent**	July 2007
1996-2002 With verified ECS installed by adoption date	Install 2004 or later certified on-road engine or equivalent**	July 2008
1996-2002 Without verified ECS installed	Install 2004 or later certified on-road engine or equivalent**	July 2007
2003-2005 (verified ECS is available)	Install highest level verified ECS	July 2007
2003-2005 (verified ECS is NOT available)	Install Tier 4 certified off-road engine	July 2011***
2006-2007	Install Tier 4 certified off-road engine	July 2013
2008-2010	Install Tier 4 certified off-road engine	July 2016

* "Effective Model Year" refers to the year the new engine was installed regardless of the model year of the equipment (i.e., a new 2004 on-road engine installed in 2006 into a 1997 model year vehicle would then have an effective model year of 2006 and would be required to meet the standards for that effective model year).

** We are currently evaluating the applicability of 2007 on-road engines and may revise the requirements based on the feasibility of those engines.

*** For engines under 175 horsepower, the compliance date for this group would be 2012 (to align with the effective date of Tier 4 standards for 100 to 175 horsepower engines).

Performance Requirements -
All Other In-Use Equipment (Excluding Yard Trucks)

- Install best available control technology (BACT)
  - new certified on-road diesel engine if available;
  - verified Level 3 ECS
  - engine that meets certified Tier 4 off-road diesel engine standards
  - alternative fuels
  - highest level ECS verified for that equipment
  - engine that meets certified Tier 3 off-road diesel engine standards and install verified ECS if available

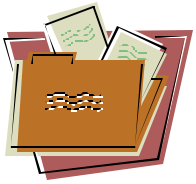
Performance Requirements - All Other In-Use Equipment (Excluding Yard Trucks)

- All equipment meet Tier 4 certified off-road diesel engine standards by specified date (to be determined)
  - currently evaluating cost and average useful life and may consider equipment-specific timelines to meet this requirement
- Example BACT compliance schedule

Group	Engine Model Years	Compliance Deadline
1	pre-1987	January 1, 2007
2	1988-1995	January 1, 2008
3	1996-2005	January 1, 2010

Reporting Requirements

- Submit initial compliance plan describing how regulation compliance will be achieved and submit yearly updates thereafter



Next Steps

- Survey distribution November 2004 and return January 2005
- Stakeholder meetings
- Workgroup meetings
- Next public workshop first quarter 2005

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