An Overview of California’s Proposed Requirements

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Background

- 7 large manufacturers of heavy-duty diesel engines used “defeat devices”.
  - 3x emission standard
  - 2.5 g/bhp-hr NMHC + NOx 15 mos. earlier
  - Meet standards under majority of operating conditions
  - Partially offset excess emissions
Excess NOx Emissions During Cruise*

* For Heavy Heavy Duty Vehicles (33,000K GVWR and over)

Eliminated with proposal
What is ARB Proposing?

• Additional compliance procedures to prevent excess NOx emissions.
  – 2005-2006
  – Consistent with the consent decrees.

• Enable in-use enforcement.
Additional Test Procedures

• Steady-state cruise emissions no more than transient emissions.

• Limits emission increase to 25%.
  – At high temperature and altitude.
  – During most other operating conditions.

• Deficiency provision in 2005-2007 MYs.
Several In-Use Enforcement Options

- Allows chassis testing
- On-board measurement device
Identical Provisions to Consent Decrees

- Assure lower emission engines continue to be produced in 2005 and 2006
  - NTE test
  - Euro III ESC test
  - Maximum Allowable Emission Level (MAEL) test procedure
  - In-use compliance
  - Definition of “defeat device”
Provisions Different than Consent Decrees

- Implementation date of NTE/Euro III ESC requirements
- Additional flexibility provided to NTE and MAEL tests.
2003 Technology Review

- Settling manufacturers required to comply with identical requirements by October 2002.
- Any compliance difficulties will be revealed before 2002.
Summary

• Support from multiple states is strongly needed
• Will result in one national production line of clean trucks.
Developing an Air Quality Justification for Adopting the California Requirements in Your State
California Mobile Source Emissions -- 2010

Vehicle and Equipment Population

- Heavy-Duty Diesel: 1%
- Off-Road Diesel: 2%
- Other On-and Off-Road: 97%

NOx Emissions

- Heavy-Duty Diesel: 23%
- Off-Road Diesel: 34%
- Other On-and Off-Road: 43%

Source: EMFAC2000 baseline inventory
What Does the Emission Inventory Assume?

- Emissions based on compliance test (FTP)
- No greater emissions under operating conditions not represented by FTP
  - Steady state cruise
  - High ambient temperature
  - High altitude
Excess NOx Emissions During Cruise*

* For Heavy Heavy Duty Vehicles (33,000K GVWR and over)
Cruise Occurs Frequently

Line Haul Trucks
- Cruising Conditions: 72%
- Non-Cruising Conditions: 28%

Delivery Trucks
- Cruising Conditions: 25%
- Non-Cruising Conditions: 75%
What are the Impacts?

- Higher emissions during cruise give excess lifetime NOx emissions of:
  - 5.1 tons per heavy heavy-duty vehicle
  - 0.6 tons per medium heavy-duty vehicle
  - For California, 22 tons per day of projected excess NOx emissions in 2006

- Heath effects of NOx:
  - Can aggravate common respiratory illnesses.
  - Is a precursor to ozone.
Potential Excess NOx Emissions in California

Source: EMFAC2000 and incremental emission factor
What Needs to Be Done?

- CA regulation to prevent excess NOx in 2005/06
  - December 7 adoption
- YOUR “OPT-IN” IS NEEDED.
  - States adopt CA regulation using section 177 of CAA (during 2001)
Benefits for States

- Continues 2002-04 requirements until EPA rules begin in 2007
- Only clean trucks produced in 2005/06
- Increased ability on testing in-use compliance
- Consistent with current SIP inventories