Transit Bus Fleet Rule Implementation Update

November 2004
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Kathleen Mead

Today’s Presentation

- June 2004 Changes to the Regulation
- Non-compliance
- Reports Required January 31, 2005
- Actions Required in 2005
- Future Updates to the Regulation
June 2004 Regulation Changes

- Diesel Hybrid Electric Bus (HEB)
- Amendments to ZEB Requirements

HEB Regulation Changes

- Hybrid Electric Bus Definition
  - 2 Energy Sources on Board
  - Auxiliary Power Unit to Convert Fuel Energy
  - Electric Motor Must Drive Wheels
- Diesel HEB Interim Standard
  - 1.8 g/bhp-hr NOx
  - 0.01 g/bhp-hr PM
HEB Regulation Changes (continued)

- Only Diesel Path Transit Agencies May Purchase Diesel HEBs
- Must Offset NOx Emissions
  - 1.8 g/bph-hr NOx vs. 0.5 g/bph-hr NOx
    - NOx Aftertreatment for Other UB in Fleet
    - Repower Other UB w/ Lower NOx
  - Offsets Must Be Surplus

ZEB Regulation Changes

- Zero Emission Buses (ZEB)
  - 3 ZEB per Demonstration Project
  - Interim Project Status Report 7/31/05
  - Project Start Deadline 2/28/06
  - Final Project Report 7/31/07
Compliance

ARB Actions

- NOx Fleet Average Violations Settled
  - All Transit Agencies are in Compliance
- PM Compliance Violations (2004) Being Investigated
- Late Reports and PM Non-Compliance Will Result in Notices of Violation in 2005
Reports Due in 2005

For 2004

Diesel HEB Purchase Application

- Application for Approval Due 1/1/05
  - Must Demonstrate Surplus Emission Reductions to Offset Excess NOx
  - No., Manufacturer, Make, MY
  - Specific Identification of Buses and Measures to Offset
  - Schedule for Implementation of Measures
Annual Reporting

- Annual Report Due 1/31/05:
  - Number, Engine Mfr & Make, Engine Model Year For All Engines in Buses, and Fuel Used
  - Alt.-Fuel Path List Bus Purchases & Leases, and Percentage of Alt. Fuel Buses Purchased or Leased

Reporting Requirements (continued)

- Total Diesel PM Emission Reduction
  - Annual Report Due 1/31/2005
  - No., Mft., Make, & MY Diesel UB
  - PM Engine Cert. Values & Total PM
  - Identification for DECS Used
  - Percentage Reduction Achieved by Jan. 1
    - 60 % Diesel Path; 40 % A-F Path
Reporting Requirements (continued)

- Alternative NOx Strategy Exemption
  - Initial Report Due 1/31/2005
  - Shall Demonstrate Achievement of NOx Emission Benefits
  - Provide Update of Compliance Plan
  - Annual Reports Due Through 2016

- Applies to Seven Transit Agencies only

ZEB Report Required

- Preliminary Report Due 7/31/05
  - ZEB Mfr & Technology Used
  - Describe ZEB Specifications
  - Miles/Bus in Non & Revenue Service
  - Safety Incidents & Maintenance
  - Quality of Experience: Riders & TA Staff
  - Capital Costs for Purchase/Lease & Fueling Infrastructure
**Actions Required in 2005**

By Transit Agencies

**Total Diesel PM Reduction**

Relative to the January 1, 2002 Baseline

<table>
<thead>
<tr>
<th>Fuel Path</th>
<th>2004</th>
<th>2005</th>
<th>2007</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel Path</td>
<td>40%</td>
<td>60%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Alt-Fuel Path</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>85%</td>
</tr>
</tbody>
</table>

Percentages of retrofit requirements must be met by January 1 of each year.
**Low-Sulfur Diesel Fuel**

- Continue Using Low Sulfur Diesel Fuel
  - <15 parts per million (ppm) Sulfur
- May Use a Fuel that is Verified as a DECS Instead to Meet PM Reductions
  - PuriNOx now available

**NOx Fleet Average**

- Maintain NOx Fleet Average
  - Applies to all transit agencies
  - 4.8 g/bhp-hr NOx
  - October 1, 2002
Idling Restrictions

- Effective January 1, 2005
- Five Minute Limit for Idling
- Except:
  - Not while operating wheelchair or people lifts
  - Not when passengers are on board
  - May idle for 10 minutes prior to passenger boarding for climate control

Potential Amendments in 2005

Transit Fleet Vehicles
Urban Bus Engine Stds.
**Fleet Rule for Transit Agencies**

- Add Transit Fleet Vehicles to the Scope
  - New NOx and PM Fleet Emission Reductions
- Add New Definition of Commuter Service Bus
  - Categorized as a Transit Fleet Vehicle
- Add Requirements for New Transit Agencies
- Modify Urban Bus PM Fleet Reduction Standard
  - To Allow for Fleet Growth
- Move Rule from §1956.2-1956.4 to §2023

**Public Process**

- 1st Public Workshop
  - 04/03/03 (El Monte)
- 2nd Public Workshops
  - 12/2/03 (El Monte); 12/3/03 (Sacramento)
- 3rd Public Workshops
  - 5/17/04 (Sacramento); 5/18/04 (El Monte)
- 4th Public Workshops
  - 10/7/04 (El Monte); 10/8/04 (Sacramento)
- Board Hearing January 20-21, 2005
Proposal
What Will it Affect?

“Transit Fleet Vehicles”
- Vehicle < 8,500 lb GVWR, not “urban bus” operated with a heavy-duty engine fueled by diesel or alternative fuel operated by a transit agency
- Includes charter, dial-a-ride, paratransit, inter-city, tow trucks, etc.
- Owned or operated by a transit agency. Vehicles owned by private or non-profit that provide transit services for a public transit agency

Truck Engine Certification

Service Class
- Heavy-duty (HD) Engine Is Used in a Heavy-duty Vehicle
  - Light HD <19,500 lbs. GVWR
  - Medium HD 19,500-33,000 lbs. GVWR
  - Heavy HD >33,000 lbs. GVWR

Emission Stds: title 13, CCR, §1956.8
Proposal
Changes Since October

- Modified “Transit Fleet Vehicle” Definition
- Modified Definition of “Commuter Service Bus”
- Added Extension for “Contract Fleet”
- Other changes may be made prior to the public notice set for early December 2004 Based on Comments Being Reviewed.

“Commuter Service Bus”

Defined as Transit Fleet Vehicle if:
- Powered by a heavy HD diesel engine or of a type normally powered by a heavy HD diesel engine
- Operates on a fixed route primarily during peak commute hours
- No passenger-initiated stops
- No more than 10 stops per day, excluding Park-and-Ride lots.
“Transit Fleet Vehicle”

“Transit Fleet Vehicle” means a vehicle greater than 8,500 (lbs) GVWR, powered by heavy-duty engine fueled by diesel or alternative fuel, owned or operated by a transit agency, and which is not an urban bus.

Extensions

- Financial Hardship
  - Section 2023(e)
  - <20 in transit fleet
- Unavailability of Technology for PM
  - Section 2023(f)
- Delay of Implementation for PM
  - Section 2023(g)
  - <20 in transit fleet in 1 hour Ozone attainment
New Proposed Extension
TFV Contract Fleets

- Only for TFV, Apply to Executive Officer for Up to 1 year delay
- For the termination of equipment or equipment and service contracts defined by FTA:
  - vehicle lease, maintenance/lease, turnkey
- Show compliance at end of extension
- Explain why

Compliance Deadlines

<table>
<thead>
<tr>
<th>Date</th>
<th>% PM reduction from baseline</th>
<th>Fleet NOx Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2005</td>
<td>0%</td>
<td>na</td>
</tr>
<tr>
<td>December 31, 2007</td>
<td>40%</td>
<td>3.2 or retire 1997 and earlier MY</td>
</tr>
<tr>
<td>December 31, 2010</td>
<td>80%</td>
<td>2.4 or retire 2001 and earlier MY</td>
</tr>
</tbody>
</table>
**Reports due January 31st 2006 through 2016**

<table>
<thead>
<tr>
<th>Year</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>Every Year</td>
<td>For all TFV - vehicle MY, engine MY &amp; model, fuel used</td>
</tr>
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</table>

In addition:

- **2006**: Plans for meeting 2007 NOx Ave., 2005 PM Baseline
- **2008**: 12/31/2007 NOx Ave. and PM Reduction
- **2009**: Plans for meeting 2010 NOx Ave.
- **2011**: 12/31/2010 NOx Ave. and PM Reduction

**Urban Bus Engine Standards**

- Decision on 2007 Engine Standards
  - California UB NOx is 0.2 g/bhp-hr
  - Federal & California Truck NOx is ~1.2 g/bhp-hr
- Scheduled for Mid-2005
**ARB Website:**
www.arb.ca.gov/msprog/bus/bus.htm

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**Zero Emission Bus Contact**

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Get on the e-mail List Serve for all transit notifications  
http://www.arb.ca.gov/listserv/listserv.htm  
lst name: diesel-retrofit