



On-Road Heavy-Duty Q/A and Update

Jackie Lourenco

California Air Resources Board

Khesha Jennings

Environmental Protection Agency

2006 EMA Certification Workshop

April 18, 2006

California Environmental Protection Agency

 **Air Resources Board**



Allowable Maintenance

- 40CFR Part 86.004-25 and 40CFR Part 86.007-25 (subject to the Board's Approval)
- Intend to align with EPA maintenance requirement for critical emission related items
- Federal Register Notice (FRN) will allow 80,000 maintenance interval for select medium heavy duty vehicle types
 - Indicate shorter MI on new template
 - Ensure smaller DPFs are only installed on approved applications
 - Reasonable likelihood of maintenance being performed in use
- ARB Board item scheduled for later this year



Infrequent Regeneration

- ARB is working with EPA to best characterize various proposals from manufacturers and issue a guidance document
- Upward Adjustment Factors (UAF) and Downward Adjustment Factors (DAF)
- Specific methods are approved individually (UAF and DAF calculations)
- May propose in-use data to model regeneration deterioration effects (must account for frequency and duration)
- Must account for device's regeneration effects at end of useful-life (old aged / time & usage)



ARB

Deterioration Factors

- Additive / Multiplicative DFs for 2007 HDDE
 - use of additive DFs needs technical justification
- Carryover of DF to 2007 MY are approved on individual basis, NOT automatically approved
- Specific useful-life durability demonstration of after-treatment devices
- Required Maintenance Schedule
- Crankcase emissions need to be addressed





ARB

DF Considerations

Suggest ways to minimize DF work:

- establish stabilized engine out emissions
- may allow aging of after-treatment devices separately
- must have data to support

Dialog with Staff on 2007 DF --- NOW
Start 2010 discussion ASAP



EPA

Deterioration Factors

- Additive DFs allowed (same provisions as NRCI)
- Assigned DFs not available for large volume families
- Ongoing discussion with EMA regarding DF guidance for 2007
 - Carry-over
 - Carry-across
 - Durability of aftertreatment
- EMA/EPA/ARB must begin dialog on 2010 DF plans early



AECD

- Jointly reviewed by ARB and EPA
- Concurrent submittal of information
- Complete new AECD document for 2007
- Carryover of AECD not automatic
 - Changes to lower FEL and NTE
 - Addition of new technology
 - 4 months lead time for review



Averaging Calculations

- CI Averaging Calculation Guidance published March 2005
- No SI Averaging Calculation Guidance to be published
 - Individual manufacturer meetings



Changes to Filemaker Template

- Engine Control and Aftertreatment boxes updated for 2007-2010 Technology
- Maintenance Interval
- Adjustment Factors
- Averaging Calculations
- AECD Emissions Impact
- OBD Approval
- With abbreviated review process, new template will be available for 07 certification



Expediting Application Review

- Concurrent, **EARLY** discussion with **BOTH** agencies on AECD, EMD, DF plan, Warranty and maintenance schedule (minimum lead time = 6 months)
- Complete application speeds review
- Partial application delays review
- Use of new FileMaker Template
- Quick response to questions during review



ABT Template

- ABT template in Excel format
- Template should be used for 2005 and 2006 reports
- Template will be revised for 2007
- ABT templates for other industries currently being drafted/reviewed



Manufacturer In Use Testing

- Screening and Reporting guidance documents to be published by the end of the month
- Revised EF selection and reporting dates negotiated by EPA, ARB and EMA
- Small electronic submission pilot study in progress



ARB Emissions Warranty Reporting

- Proposed Changes
 - Reduce Reporting
 - Required Testing When Defect > 10%
- May 2, 2006 Workshop
- September 28, 2006 Board Hearing
- Specific Info At
http://www.arb.ca.gov/msprog/mailouts/mouts_06.htm



EPA Defect Reporting

- Existing on hwy defect regs are out of date
- Evaluating update options. Harmonize with...
 - Nonroad regs
 - ARB regs
- Issues with current defect reports
 - Completeness
 - Blanket CBI claims



EPA Compliance Testing

- Lab Modernization efforts at NVFEL complete
- HD On Hwy round robin initiated
 - Good correlation at two labs
 - Scheduling additional labs (two engines available)
- Plans to begin nonroad round robin then compliance testing program
 - Details to be discussed at EMTC



2007 Hybrid Overview

Existing CARB Interim Procedure continues to apply, with changes

2007 Model-Year changes:

- One-party certification
- No 25% automatic reduction
- 435k-miles useful-life for UB



EPA Hybrid Project

- Voluntary quantification protocol for fuel economy and emissions benefits
 - Energy Policy Act Tax Credits
 - SIP Credits
 - Marketing
- Stakeholders Include: Universities, Municipalities, CARB, Hybrid Manufacturers
- Limited OEM participation
- Draft protocol by May 2006
- Next Steps: Verify Protocol, Draft SIP guidance



ARB

On-Road Heavy-Duty Certification Contact Information

Tom Chang (hybrid, aecd), ychang@arb.ca.gov

Zach Evans (diesel), zevans@arb.ca.gov

Satya Devesh (otto), sdevesh@arb.ca.gov

Duc Nguyen, Manager, dnguyen@arb.ca.gov



EPA On-Hwy Heavy-Duty Contact Information

Certification

Greg Orehowsky (Team Leader),
orehowsky.gregory@epa.gov

Jason Gumbs (OBD), gumbs.jason@epa.gov

Han Lim (Alt. Fuel/Hybrids), lim.han@epa.gov

Bill Rutledge (UB Bus), rutledge.william@epa.gov

Testing

Brian Olson (Laboratory Operations Division),
olson.brian@epa.gov



Contact Information

ARB Warranty Reporting

Harold Mace, Manager

Field Inspection and Testing Section

(626) 575-6741, hmace@arb.ca.gov

or

John Urkov, Chief

In-Use Vehicle Programs Branch

(626) 575-6719, jurkov@arb.ca.gov

EPA Defect Reporting

Cliff Dean, dean.clifford@epa.gov



Question and Answer



ARB Compliance Testing

California Environmental Protection Agency

 **Air Resources Board**

