EPA – Light-Duty Automotive Industry Compliance Meeting

June 17, 2010

Washtenaw Community College

Morris J. Lawrence Building

EPA United States Environmental Protection Agency

Where can I get this presentation?

- The guidance letter is posted at
  - http://www.epa.gov/otaq/cert/dearmfr/dearmfr.htm
  - Click on the tab for the 2010 guidance letters. Presentation is attached to:
    - **Title:** 2010-08: Notice of EPA-Industry Compliance Meeting - June 17, 2010

I. GHG Regulations

- Program Overview
- Process for Responding to Manufacturer Questions
- GHG Program Audits/Reviews
- Next Steps

GHG Program Overview

- GHG Standards
- Attribute-based
- Footprint Curves
- CO_2 Targets
- Flexibilities

GHG Standards – CO_2 Emissions

- Average fleet-wide level of 250 grams/mile of CO_2 in model year 2016
  - Standards phase in beginning in model year 2012
  - CO_2 compliance is demonstrated using carbon-related exhaust emissions (CREE) values
  - Standards are attribute-based (vehicle footprint)
- The 250 gram/mile CO_2 standard corresponds to 35.5 mpg “equivalent” if all reductions resulted from fuel economy improvements

GHG Standards – N_20 & CH_4

- Standards for N_2O and CH_4 are 0.010 grams/mile and 0.030 grams/mile, respectively

- In lieu of meeting the separate N_2O and CH_4 standards, manufacturers can optionally include N_2O and CH_4 in their CREE fleet average

In-Use Standards

- In-use CO_2 exhaust emissions standard
  - Combined city/hwy CREE value multiplied by 1.1
  - Applies to IUVP and EPA in-use surveillance testing

- IUVP Requirements
  - Must measure CO_2, N_2O, and CH_4
    - N_2O measurement not required until 2015 MY
  - Only on FTP and Highway cycles
  - No IUCP threshold criteria

Standards are Footprint Attribute-based

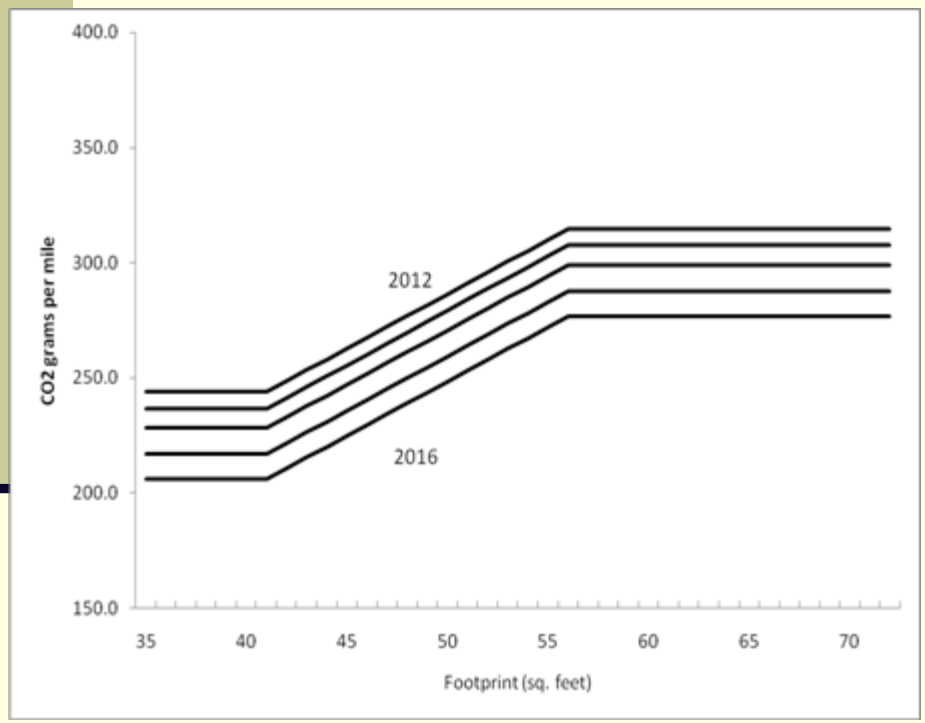
- Each manufacturer's standard based on the footprint of vehicles produced - actual standards are curves which equate a vehicle size to its specific CO2 or MPG target
- Each company's "standard" is footprint curve

Vehicle Type	Example Models	Example Model Footprint (sq. ft.)	CO_2 Emissions Target (g/mi)	Fuel Economy Target (mpg)
Example Passenger Cars				
Compact car	Honda Fit	40	206	41.1
Midsize car	Ford Fusion	46	230	37.1
Fullsize car	Chrysler 300	53	263	32.6
Example Light-duty Trucks				
Small SUV	4WD Ford Escape	44	259	32.9
Midsize crossover	Nissan Murano	49	279	30.6
Minivan	Toyota Sienna	55	303	28.2
Large pickup truck	Chevy Silverado	67	348	24.7

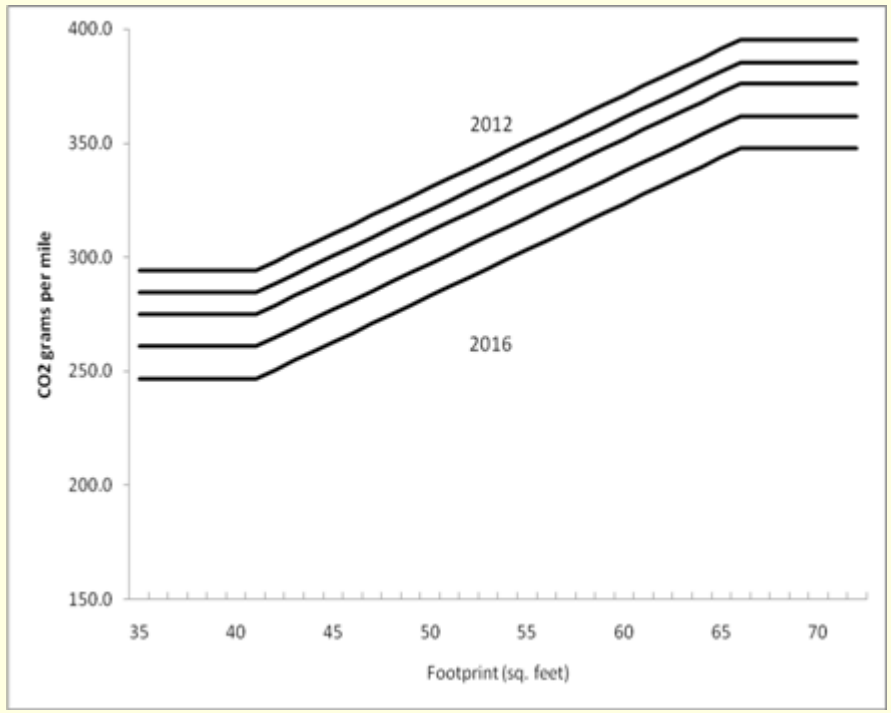
CO_2 Standard Curves

- Final EPA CO2 Standard Curves:

Car standard curves



Truck standard curves



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GHG Program Flexibilities

- Emission banking and trading elements
- Flex-fuel vehicle (FFV) credits
  - MY2012 – 2015 credits similar to CAFE, MY2016+ based on actual E85 fuel use
- Air conditioning HFC (leakage) and CO_2-related efficiency reduction credits
- Early credit opportunities for doing better than California or CAFE
- Innovative technology credits
- Advance technology credits
- Provisions for medium & small sales volume companies

EPA Flexibilities for Medium and Small Sales Volume Auto Companies

- Temporary Lead Time Allowance Alternative Standards (TLAAS)
  - Optional program for any firm with sales <400,000 in the U.S. in 2009
  - Companies can take 100,000 vehicles between 2012 and 2015 and have those vehicles comply with an alternative, less stringent standard
- Additional flexibility for companies with sales between 5,000 and 50,000 in 2009
  - Optional program is now available for 2016, and companies can apply the alternative standard to an additional 150,000 vehicles
- Companies with 2009 US sales <5,000 vehicles, as well as small businesses, are exempt from this final rule
  - EPA intends to address these firms in a separate rule
- None of these provisions impact the applicability of the CAFE standards

EPA Incentives for Advanced Technology Vehicles

- ATV vehicles are treated as 0 grams/mile CO2 for the first 200,000 vehicles sold between 2012 and 2016 per company
- Any firm that sells at least 25,000 ATVs in 2012 can increase the ATV credit vehicles to 300,000
- For ATVs greater than 200,000, ATVs will include accounting for upstream CO2 impacts
- EPA commits to revisit these provisions in any future rule for standards beyond model years 2016

GHG Reporting Requirements

- Compliance Plans
  - Included in certification preview meetings
  - Must be submitted to EPA prior to the beginning of the model year and prior to certification of any test groups
  - Must include the following:
    - Projected footprint profile, projected total & model-level CO_2 emissions values, projected fleet average CO_2 emission standards, and projected CO_2 credit status
    - Explain any credit, transfer, and trading options that will be used, including an estimate of the amount of the various credits
- Model year report
  - All information necessary to calculate mfr's fleet average CREE values
  - Submitted no later than 90 days after the end of the model year

Manufacturer GHG Questions

- We have received numerous questions on GHG program
- All questions should be raised through your designated EPA certification engineer representative
- We are tracking all questions
  - Want to provide consistent and equitable response
  - Responses will either be on manufacturer specific basis or through a formal Q&A document
  - Considering posting information on EPA web site
  - Planning workshop for late August or early September

GHG Program Audits/Review

- Road Load Determination
- Driver Trace
- Analytically Derived Fuel Economy (ADFE)
- Vehicle footprint
- Auxiliary Emission Control Device (AECD)

Road Load Determination

- Manufacturer meetings
  - Assess manufacturer processes
    - Coast-down testing, modeling, procedures, etc.
    - Complete by end of summer
- Utilize screening tools to capture outliers or unusual data
- Reinitiate policy of EPA approval of manufacturer coast-down process
- EPA audits of manufacturer coast-down test results

Driver Trace Variation

- Overview:
  - EPA is concerned about driver trace variations
    - Major influence on fuel economy and greenhouse gas emissions
    - Equity and fairness for all (level playing field)
    - Heightened awareness of greenhouse gas requirements
    - Manufacturers have voiced concerns
    - Increased scrutiny of outside sources
    - Increased scrutiny of manufacturers for EPA competitor's testing

Driver Trace Variation

- Applicable Regulations:
  - 40 CFR 86.128-00 Transmissions

(a) All test conditions, except as noted, shall be run according to the manufacturer's recommendations to the ultimate purchaser, *Provided,* That: Such recommendations are representative of what may reasonably be expected to be followed by the ultimate purchaser under in-use conditions.

(b)…

(c) …

(d) The vehicle shall be driven with appropriate accelerator pedal movement necessary to achieve the speed versus time relationship prescribed by the driving schedule. Both smoothing of speed variations and excessive accelerator pedal perturbations are to be avoided.

Driver Trace Variation

- What has EPA done so far?
  - Developed a “Test Cycle Power Calculator” tool to evaluate the power produced by a vehicle (at the drive wheels) when driven over a test cycle;
  - Audited manufacturer’s driver traces for some high profile vehicles;
  - Performed lab audits of manufacturer’s driver traces for IUVP testing;
  - Begun to meet with Industry Stakeholders individually regarding driving trace;
    - Description of driver’s aid
    - How are driver’s instructed to follow the drive schedule?
    - Are traces evaluated and how?
    - Does manufacturer perform an energy analysis on trace?
- Future plans:
  - Work with Industry to develop a tool to evaluate drivers trace variations
  - Issue a guidance letter for all manufacturers
    - Provide drive trace tool to all manufacturers
    - Possibly provide guidelines (e.g. void criteria) for EPA and manufacturer testing
  - Perform audits of manufacturers drivers trace variations

Driver Trace Variation

Observations Related to Fuel Economy Differences

- Substantially higher offsets for FTP test cycle than for highway cycle
- Disparity between typical correlation results and confirmatory results

➔ Look at acceleration component of vehicle speed traces

➔ Develop a direct, quantitative measure of the importance of driver trace variation

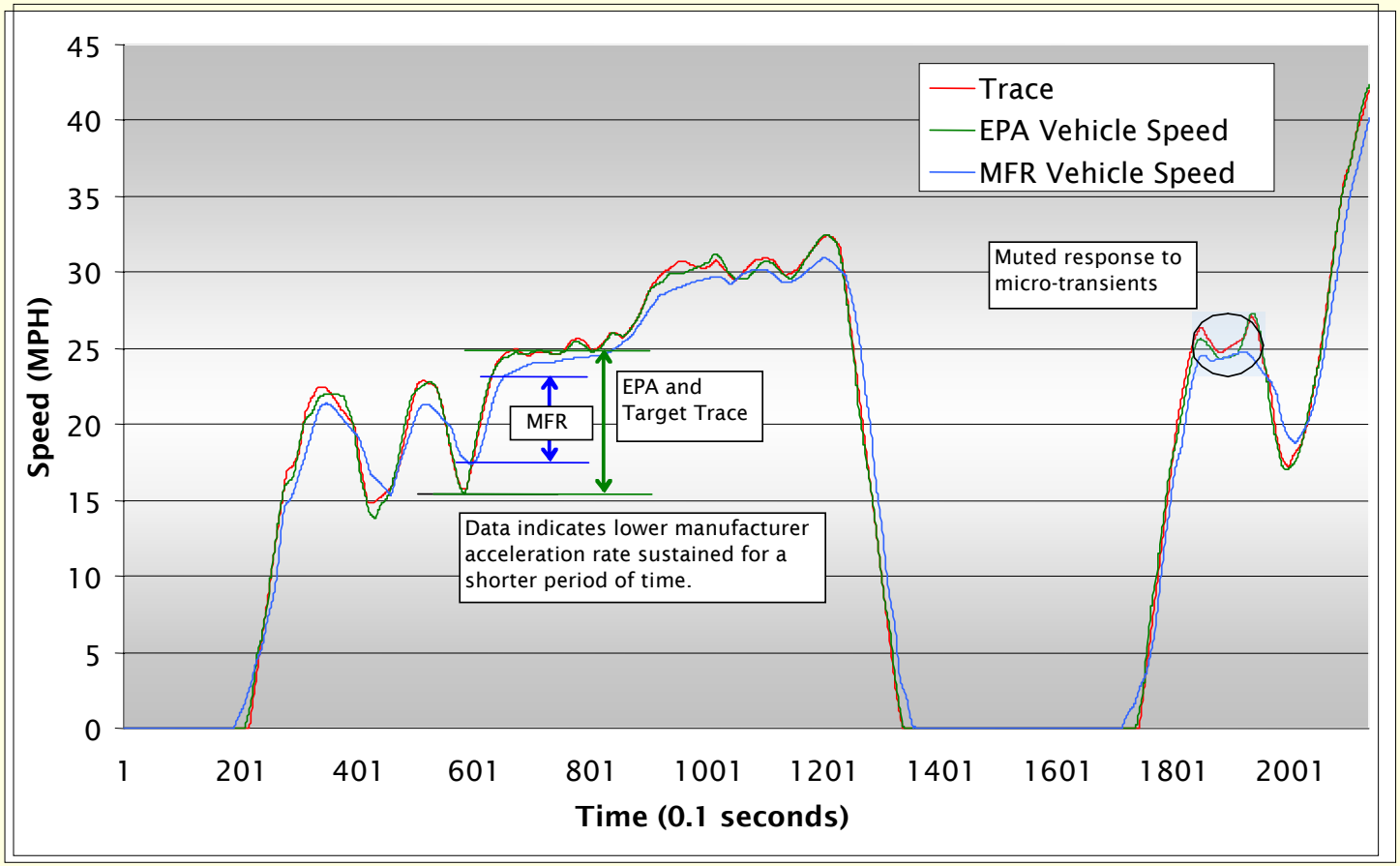
Driver Trace Variation

Predict the effect of vehicle speed and acceleration

- Calculate estimated power demand at the wheels based on actual vehicle speed
  - $= f\ (V_{Speed} * \text{RL Coefficients}) + (A_{Vehicle} * Mass_{Vehicle})$
  - (*Instantaneous speed and acceleration*)
- Compare to estimated power demand at the wheels based on target vehicle speed
  - $= f\ (V_{Target\ speed} * \text{RL Coefficients}) + (A_{Target} * Mass_{Vehicle})$
- Calculate power demand error based on the average power difference between target and actual vehicle speeds

Driver Trace Variation

- Example



Driver Trace Variation

- Example (continued)

Vehicle Speed Data	Average Power Requirement	Difference Compared to Target
Target trace speed	6.313 HP	NA
Manufacturer test speed	5.752 HP	-8.89%
EPA test speed	6.292 HP	-0.32%

- For this vehicle, the manufacturer offset in fuel economy was approximately 8%, comparable in magnitude to the – 8.6% difference in estimated power demand between the manufacturer and EPA
- In addition to confirmatory testing, a similar effect was observed in a recent correlation program; statistics indicated up to 90% of observed variation in fuel economy could be attributed to variation in power demanded from the vehicle

Driver Trace Variation

- Summary
  - Driving differences can have a pronounced effect on power demand resulting in corresponding fuel economy differences on city, highway and US06 tests
  - In all cases reviewed, differences in predicted power demand greater than about 1.5% resulted in directionally similar differences in fuel economy
    - In some cases, fuel economy offsets were greater than differences in power demand. This may be due to compound effects of vehicle speed and power, such as those caused by control thresholds; e.g. automatic transmission shift points.
  - Limitations: Several cases were observed where fuel economy differences were not accompanied by corresponding offsets in power demand.

Foot Print, ADFE, and AECD

- **Vehicle Footprint**
  - EPA & NHTSA plan to conduct audits on production vehicles
- **Analytically Derived Fuel Economy (ADFE)**
  - Ensure consistency between data substitutions and ADFE submitted for CAFE/GHG
  - Review ADFE calculations
- **Auxiliary Emissions Control Devices (AECD)**
  - Focus on off-cycle operation, advanced technologies, and fuel economy/GHG

GHG Next Steps

- Continue to meet with manufacturers and track questions
- GHG implementation workshop
  - Late August or early September
  - Address questions
    - Early credits, TLAAS, A/C, CREE, testing, ABT, credits, IUVP, warranty, etc.

II. Other Issues

A. CAP 2000 Updates
B. Light-Duty Diesel SCR
C. IUVP
D. Miscellaneous Compliance Issues
E. Verify Updates
F. Fuel Economy Label Rule
G. Alternative Fuel Conversion Proposal

A. CAP 2000 Updates & Reminders

- Background
- 2010 Updates
- Application Recommendations
- Application Requirements
- Application Review

CAP 2000 Background

- Compliance Assurance Program 2000 Final Rule effective 5/4/1999
- CAP 2000 Implementation Guidance (VPCD-99-06)
  - Application timing
  - CFEIS
  - Application Format

CAP 2010 Updates

- CFEIS references replaced with appropriate Verify references or eliminated
- New Regulations and Guidance References
  - MSAT, GHG, FE retest criteria for SFTP, etc.
- Application Recommendations
  - Speeds application review
  - Eases data retrieval
  - Application Requirements
  - Reflect newer regulation and guidance (GHG, MSAT, etc.)
  - Certification may be withheld until requirements are satisfied
- Review of Requirements
  - Required due to Industry Personnel Turnover and New/ Return Stakeholders

Application Recommendations

- Freedom of Information Act Application
  - FOIA = CBI-confidential information
  - Do not rely on EPA to Redact your CBI application!
- Keep References to Minimum
  - Do not cross reference FOIA and CBI
  - Include OBD approval in CBI
  - Include OBD description
    - We accept ARB OBD approval, but still need to see OBD description (this in not optional)
  - Entire application should be historically transparent with 2 documents (CBI Common and CBI Individual)
  - Do not reference databases (obsolescence), documents may be entered into Verify but should also be in cert app.

Application Requirements

- Typical Statements In-Lieu of Testing (86.1829-01, 1810-01, and 1810-09)
  - Gasoline PM
  - High Altitude FTP, EVAP, ORVR
  - Total HC
  - Cert Short Test
  - 91 RON fuel Testing
  - Spit back
  - ILEV Refueling
  - 2 Day EVAP
  - N_2O (GHG)
- Additional Statements of Compliance (additional to In-lieu of)
  - SFTP A/F ratio (lean best torque +6%) – CFR 86.1810-01(a)(6)
  - Formaldehyde Emissions 86.1829-01(b)(1)(iii)(E)
  - Cold CO and NMHC linearity requirements 86.1809-01 and -10
  - Leak Free Exhaust 86.1844-01(d)(16)
  - General Compliance Statement 86-1844-01(d)(8), (14)

Application Requirements / Review

- GHG requirements
  - Early CO2 credit pathway 86.1867-12
  - AC component durability 86.1823-08(m)(4)
  - Small Business Administration exemption
  - GHG conditional exemption request 86.1801-12(k)
- Diesel
  - Infrequent Regeneration Adjustment Factor and method of development
  - Maintenance approvals
  - Description of Diesel Exhaust Fluid SCR system
- Test Parameters
  - RLHP/ coefficients for Every Vehicle Sub-configuration (FOIA)
  - Approved method for determining RLHP/ Target Coefficients (may be CBI)
- Durability Group Description
  - Includes PM Loading (CBI of course)
- Ca & 177 States/ 50 State Requirements

B. Light-Duty Diesel SCR

- System Improvements
- (b)(7) Process

Light-Duty Diesel SCR – System Improvements

- Three years of certification for light-duty diesel SCR vehicles
  - No significant change or improvements to system designs
- Time to discuss improvements to SCR strategies
  - For example:
    - Inducement
    - Continuous DEF tank level detection
    - Tampering
    - Urea sensors
- Could be independent discussion or follow-up from EPA/CARB HD SCR workshop

Light-Duty Diesel SCR – (b)(7) Process

- New scheduled maintenance requests for DEF refill intervals
  - Manufacturer requests approval for new maintenance schedule
  - Once approved, EPA publishes new schedule in federal register
- Original EPA approvals covered 2009 & 2010 MYs
  - Need new approvals for 2011 MY and beyond
- Pending request from Alliance
  - Currently under review
  - Does not cover manufacturers that are not members of Alliance
- Companies that are not members of Alliance will need to apply separately

C. In-Use Verification Program (IUVP)

EPA Proposal for Test Reduction

IUVP Overview

- Review Regulatory Language
- Establish Parameters for “Good In-Use Performance”
- U.S. EPA’s Proposal for Testing Reduction

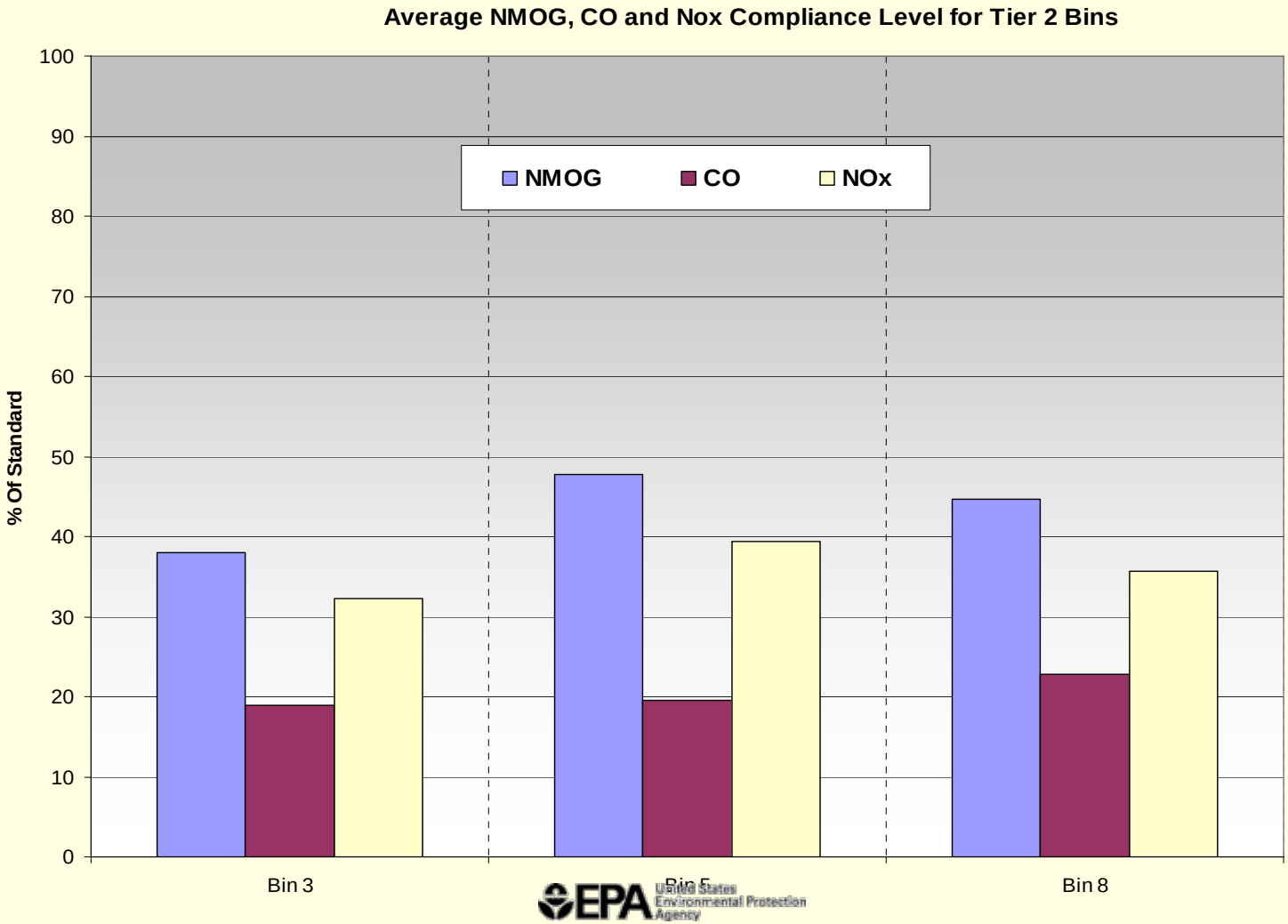
CAP2000 Regulations and IUVP Test Reduction

- 40 CFR §86.1852-01: Waivers for good in-use emission performance
  - IUVP testing may be waived if the data shows with confidence that emissions are below applicable emission standards for an appropriate period of time, and is likely to continue in future model years
  - Must still be a sufficient amount of data to make certification decisions and assure emissions compliance
  - Limited in duration to one model year, unless extended based on demonstration of continued good performance
  - Can be denied or revoked if it is determined the manufacturer no longer qualifies

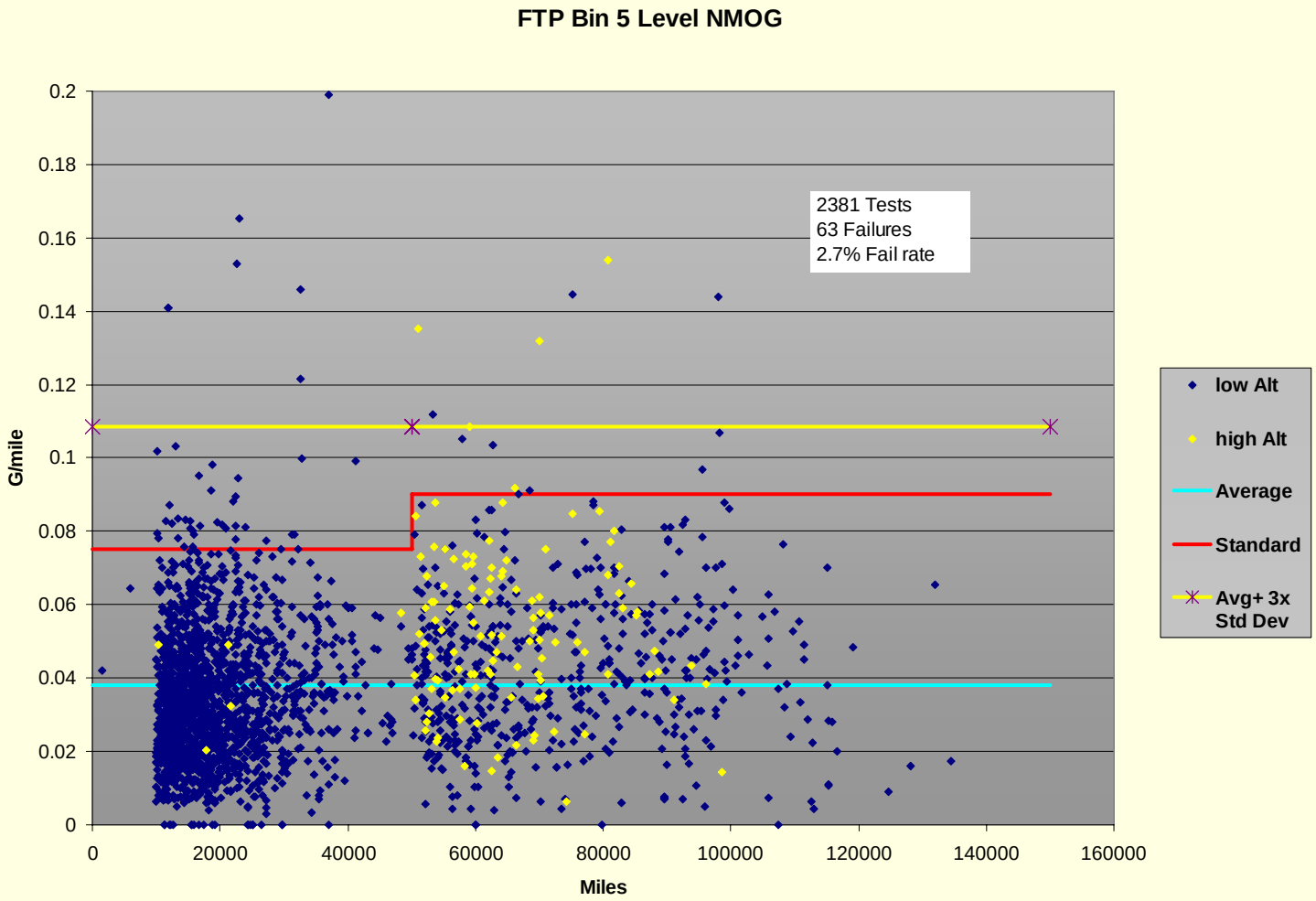
CAP2000 Preamble and IUVP Test Reduction

- Preamble language supports using IUVP testing reduction as a positive incentive
  - To promote good or exemplary in-use performance
  - To motivate manufactures to build cleaner and more durable vehicles
- Examples of “good in-use performance” are included in the preamble but not in the reg.

IUVP Data Analysis:
Average Emissions Compliance by Tier 2 Bin



IUVP Data Analysis:
Tier 2, Bin 5 NMOG FTP Data



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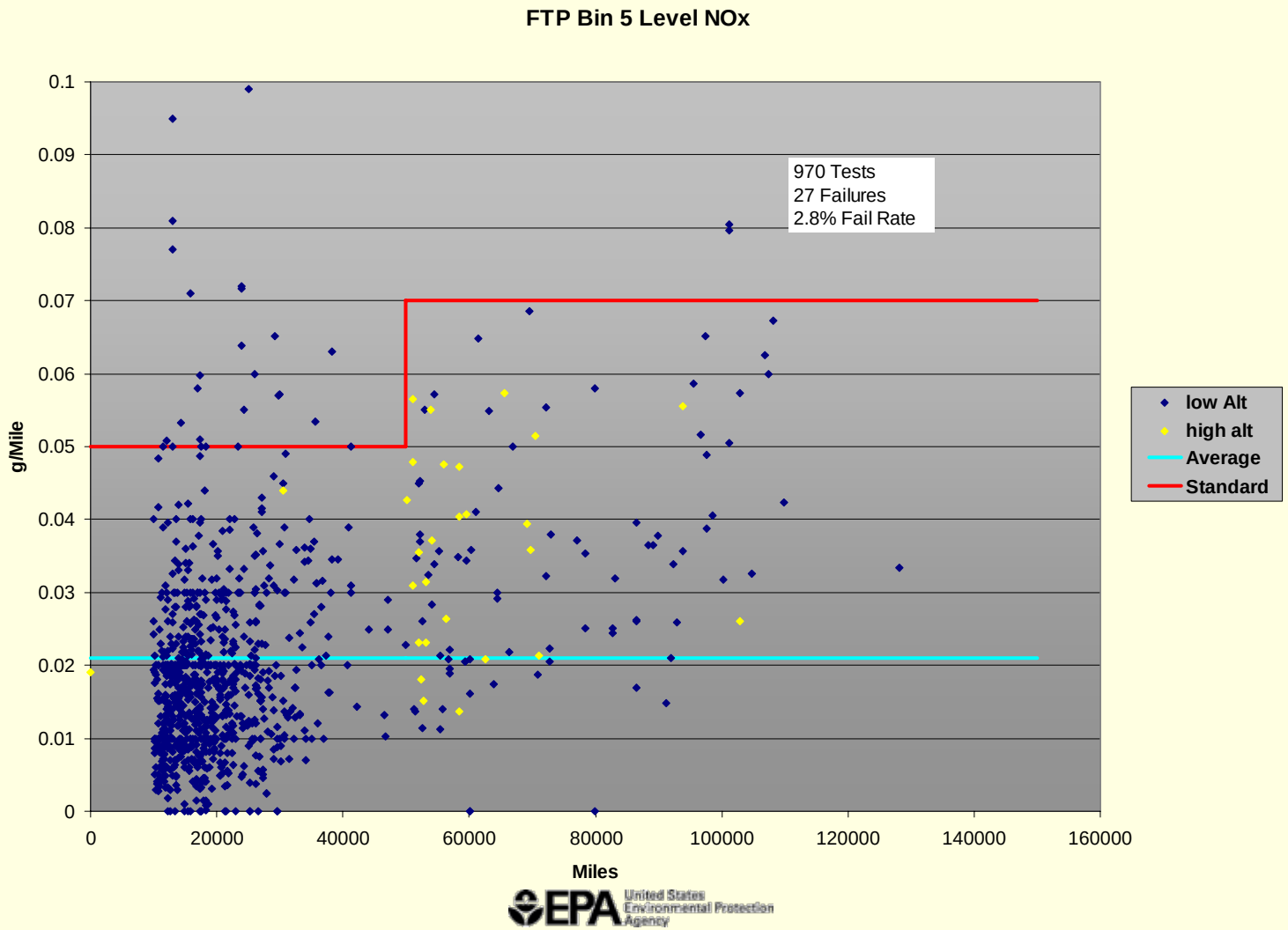
IUVP Data Analysis:
Tier 2, Bin 5 NOx FTP data



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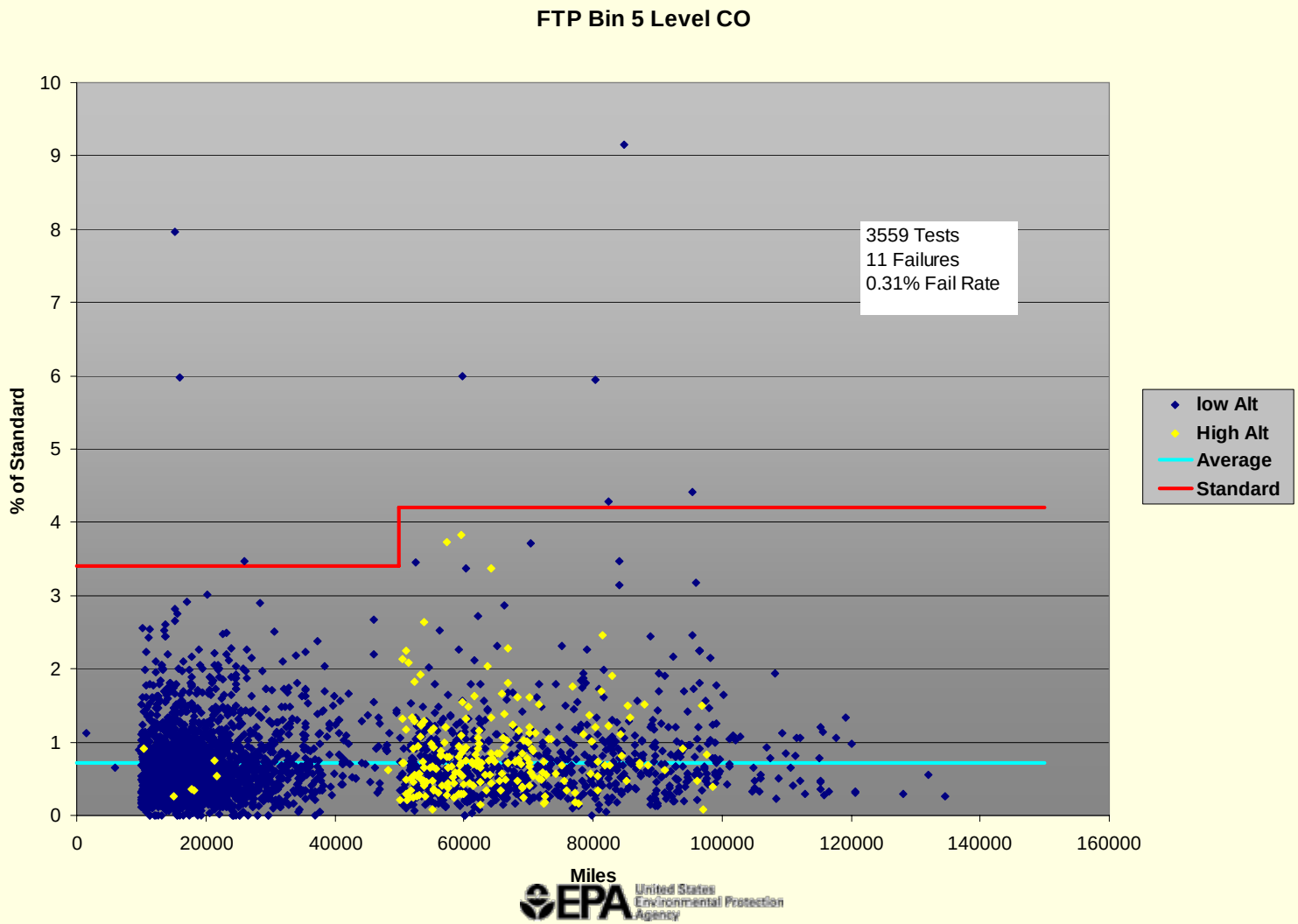
IUVP Data Analysis:
Tier 2, Bin 5 CO FTP Data



Discussion of Good In-Use Compliance vs. Good In-Use Performance *(cont.)*

- Based on these scatter plots:
  - The scatter plots show a high rate of in use compliance
  - However the spread of data extends past the emission limit
  - Indicating that many of the vehicles use up their certified compliance margin once in the in-use fleet
  - A test group should demonstrate substantial compliance margin to be considered to have “Good In-Use Performance”
- **Conclusion: The industry as a whole may show a high rate of in-use compliance but not all vehicles qualify for “Good In-Use Performance”**

EPA IUVP Test Reduction Proposal: Overall Approach

- Case-by-case approval for exhaust emissions and evap testing reduction based on individual test group data evaluated to EPA criteria (see next slides)
- EPA's IUVP test reduction approach and criteria is based on coordination with CARB

EPA IUVP Test Reduction Proposal : General Evaluation Criteria

- No waivers for test groups/evap families that qualified for in-use confirmatory program testing (IUCP) in previous 3 model years
- Full compliance with IUVP testing and reporting requirements is required
- No emissions-related recalls for the vehicles in the test group/evaporative family
- No defect reports or California warranty reports that adversely effect emissions and have significant failure rate
  - Significant failure rate: 10% unscreened unless a 4% screened rate can be demonstrated

EPA IUVP Test Reduction Proposal : General Evaluation Criteria *(cont.)*

- Test groups/engine families must:
  - Have carry-over emissions certification data for model years requiring testing and model year of waiver request
  - Not have running changes/field fixes that adversely affect emissions performance
  - Be certified to the same FTP, US06 and evap emission standards model years requiring testing and model year of waiver request
- Waiver only applies for one model year
  - Following model year: full testing required

EPA IUVP Test Reduction Proposal: Tailpipe Emissions Evaluation Criteria

- Low Mileage:
  - All low mileage test vehicles (includes EPA and CARB testing) in the test group pass all applicable emissions tests for all criteria pollutants (based on the most stringent standard)
  - Each test group must have a minimum of 3 IUVP low mileage test vehicles and demonstrate with 95% confidence that the average of the emissions test results will be at or below XX% (range of 50 to 75) of the most stringent applicable standard for each constituent.

EPA IUVP Test Reduction Proposal: Tailpipe Emissions Evaluation Criteria *(cont.)*

- High Mileage:
  - All high mileage test vehicles (includes EPA and CARB testing) in the test group pass all applicable emissions tests for all criteria pollutants (based on the most stringent standard)
  - Each test group must have a minimum of 3 IUVP high mileage test vehicles and demonstrate with 95% confidence that the average of the emissions test results will be at or below XX% (range of 50 to 75) of the most stringent applicable standard for each constituent.
  - Low mileage test data failures for the test group will be included in evaluating qualifications for high mileage test reduction

EPA IUVP Test Reduction Proposal: Evaporative Emissions

- 2-Day Evap /ORVR
  - All test vehicles in the evap family pass all applicable evap emissions tests based on the most stringent applicable standard for each test type
  - Each evap family must have a minimum of 4 IUVP tests and demonstrate with 95% confidence that the average of the evaporative emissions test results will be at or below XX% (range of 50 to 75) of the most stringent applicable standard for each test type.

In-Use Verification Program (IUVP): U.S. EPA's Proposal for Test Reduction *Next Steps*

- Manufacturer Feedback
  - Individual analysis using EPA IUVP Test Reduction Proposal
  - Joint manufacturer discussion/meeting
- Future consideration of elimination of some test procedures (e.g., high altitude, evap, ORVR) or using alternate test methodology (e.g., local recruitment w/ simulated altitude testing)
- Develop final IUVP Test Reduction Criteria and Issue a Manufacturer Guidance Letter

D. Miscellaneous Compliance Items

- Testing
- Defect Reports
- Cross-Border Sales

Vehicle Testing, “Avoid the Void”

- Reminders
  - Proper Marmon Flanges – see Advisory Circular 23B and CCD 02-14, 4” also acceptable for HD Chassis
  - Starting Instructions – clear and precise, assume driver will not be familiar with vehicle
  - Can Load Procedures – again, clear and precise, when in doubt – label
  - FWD, hold-down eyelets
- More Recent
  - Keyless Ignition Instructions beyond just start
    - How to enter neutral (road load derivation)
  - Disablements
    - “Rolls” mode – confirm vehicle will remain in rolls mode
    - Safety switches – high voltage and other “cut outs” like hood open/ seat belt
  - Fuel exchange procedures established before testing
  - Extra Cooling/ Fan Placement approved before manufacturing testing
- NVFEL is not your after shipment test facility

Defect Reports

- Please ensure that defect reports address the requested information to prevent unnecessary follow-up and the appearance of non-compliance.
- The following are examples:
  - Bad Example
    - Q: Emission Impact:
    - A: “No impact on emissions, because the EGR valve operates normally until the pintle is stuck and the MIL illuminates.“
  - Good Example
    - Q: Emission Impact:
    - A: “When the EGR valve pintle is stuck, NOx emissions are expected to increase but not significantly based on engineering evalution (no data available)."

Defect Reports

- Bad Example
  - Q: An indication of any manufacturer follow-up
  - A: “Part quality has been improved. When this defect occurs, the customer will seek repair“
- Good Example
  - Q: An indication of any manufacturer follow-up
  - A: “A new part has been implemented in-use under field fix #000-00. When this defect occurs, the customer may seek repair in response to the MIL and repair will be performed under TSB #EPA-03-10."

Cross-Border Sales

- New guidance letter will be for **2011 & beyond**
- Two new 177 states added: MD and NM
- UT is considered a "contiguous" state to NM
- For future MYs, if no change to the Policy, EPA intends to update the 177 states table and the map posted online only.

E. Verify

- Overview
- Release 5
- CAFE Updates
- GHG Development

Overview

- “Release 5” common services updates – deployment planned for August 30
  - Manufacturer module updates
  - Session timeout extension
  - Validation improvements for document module
  - Processing speed improvement
- Changes to CAFE for model years 2010 and 2011
- Light-duty greenhouse gas (GHG) updates beginning with model year 2012
  - Phase 1 – certification updates
  - Phase 2 – end of model year fleet average compliance determination

Release 5 – Common Services Updates

- Manufacturer module updates
  - Allows you to control which other companies can use your test data or carlines
  - Provides assignment of compliance representative(s) by company and by industry
  - Allows multiple email addresses for notifications (e.g., status of certificate request or confirmatory test)
- Session timeout
  - Increases session timeout after inactivity from 20 to 60 minutes
  - Allows you more time to prepare your submissions before your are automatically logged out of the system

Release 5 – Common Services Updates

- Validation report improvements
  - Applies to the Document Module
  - Affects the appearance of error reports in your CDX inbox
  - Validation errors will be available in the actual Inbox message

- Processing improvement
  - Immediate processing of Verify submissions
  - Shorter period of time for you to receive processing reports in your CDX inbox

For More Information

- Help desk via e-mail
  - User registration support
    helpdesk@epacdx.net
  - Verify- specific questions
    verifyhelp@csc.com

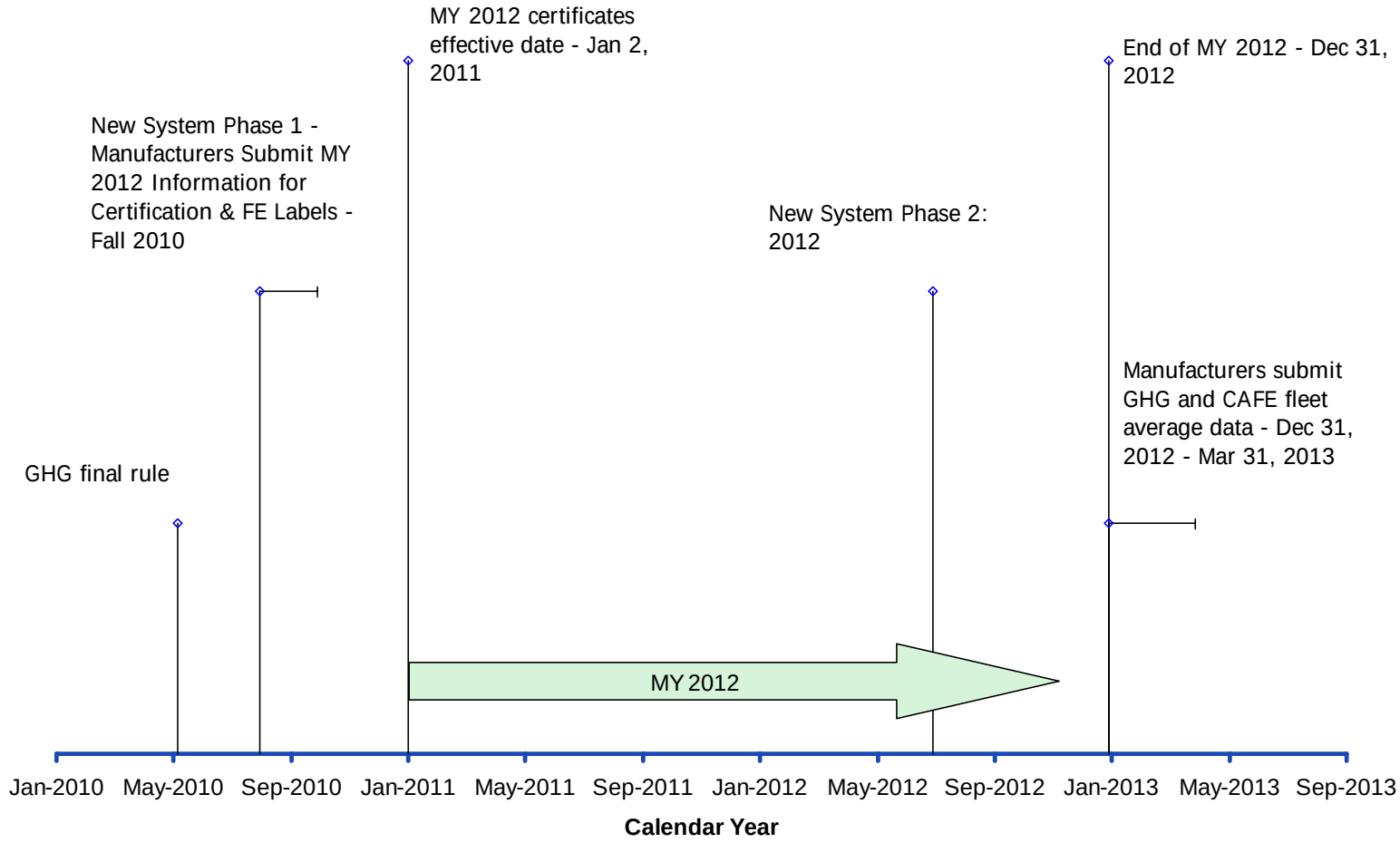
- Help desk by phone for all Verify support
  - (888) 890-1995
  - (970) 494-5500

CAFE Updates for MYs 2010 and 2011

- Beginning with model year 2010, CFEIS-structured input file no longer available

- Must start using the new Verify CAFE XML schema that will be updated this Fall
  - Reconciling the CAFE dataset with the fuel economy label dataset that was updated after the September 2008 LD system deployment (Verify 4.b)
  - Changing CAFE in preparation for GHG MY 2012

Draft Schedule for LD GHG System Development and Deployment



LD GHG System Development Phase 1 – Certification

- Ready this fall

- New data elements and in some cases calculations for
  - Footprint
  - CREE
  - New technologies and multiple fuels
  - New test procedures
  - Vehicle test parameters (e.g., road load)

- Will issue model year 2012 certificates
  - Including regulatory citations for exhaust and GHG emissions
  - Conditional for CREE until fleet averages are determined at the end of the model year

LD GHG System Development
Phase 2 – Full System

- Full system - ready by ~July 2012
  - GHG and CAFE fleet average determinations
  - Credit tracking

- Stay tuned for more details

Next steps

- Update your manufacturer profile after Release 5 deployment
- EPA/manufacturer discussions regarding upcoming system changes

F. Fuel Economy Label Rule

- Proposal in early August
- Final rule by end of year
- Working closely with NHTSA to address EPCA & EISA statutory requirements
  - Develop a single label
- Have worked closely with stakeholders
  - Autos, NGOs, FTC, DOE, NADA
- Three phases of focus groups
  - Four cities
  - Total of 32 focus groups
- Expert panel

G. Alternative Fuel Conversion Proposal

- NPRM published in Federal Register May 26th
- Public hearing at EPA June 23rd
- Comment period ends July 23rd
- FRM schedule TBD after comment period closes
- Final rule effective 30 days after signature by EPA Administrator

Overview of Proposal

- Scope
  - Fuel neutral - covers all fuels (gaseous, alcohol, electricity, etc)
  - LD vehicles, HD vehicles and engines
- Establishes age-based compliance categories with different demonstration requirements
  - “New” vehicles/engines
  - Intermediate-age vehicles/engines
  - Outside EPA defined useful life vehicles/engines
- Streamlines reporting process
- Maintains EPA oversight

Summary of Age-Based Proposal

Age Category	Demonstration Requirement	Exhaust	Evap	OBD
New: **< 2 years old**	Certification	FTP data	Evap + Refueling data	OBD data
Intermediate: **> 2 years old but inside useful life**	Meets standards	FTP data	Evap + Refueling data	Attestation
Outside Useful Life	Three options	1)Tech descrip 2) FTP or back-to-back testing 3) OBD scan	Attestation	Attestation

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EPA Contact Information

- Questions concerning the NPRM:
  - Amy Bunker, bunker.amy@epa.gov
- Certification Questions: Light-Duty Vehicle Conversions (All vehicles <8500 lbs GVW, some gasoline and diesel chassis certified vehicles 8501-14,000 lbs GVW):
  - Martin Reineman, reineman.martin@epa.gov
- Certification Questions: Heavy-Duty Engine Conversions (All vehicles >14,000 lbs GVW, some engine certified gasoline and diesel vehicles 8501-14,000 lbs GVW):
  - Steve DeBord, DeBord.steven@epa.gov
- Enforcement Issues: Office of Enforcement and Compliance Assistance (OECA) tips-line -http://www.epa.gov/compliance/complaints/index.html