

Air Resources Board Certification Update

2015 EMA Certification Workshop

April 21, 2015

Outline

- Organization
- Certification Statistics
- Certification Streamlining
- E-Cert Update
- GHG Certification
- Warranty/Label Updates
- Tamper Resistance
- OFCI End-of-Year Reports
- Compliance Testing
- Defects Reports
- SORE Evaporative Testing

NVEPB Organizational Chart

ECARS

New Vehicle/Engine Programs Branch

Branch Chief

Jackie Lourenco

Branch Secretary

Bonnie Garlow

On-Road Light-Duty Certification Section

Manager

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Staff

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Depinder Paul

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Staff

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Ramy Hariz

Evan Ford

Compression Ignition and Heavy Duty Certification Section

Manager

Kimberly Pryor

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Paul Adnani

James Pang

Tsatsu Nukunya

Zachary Evans

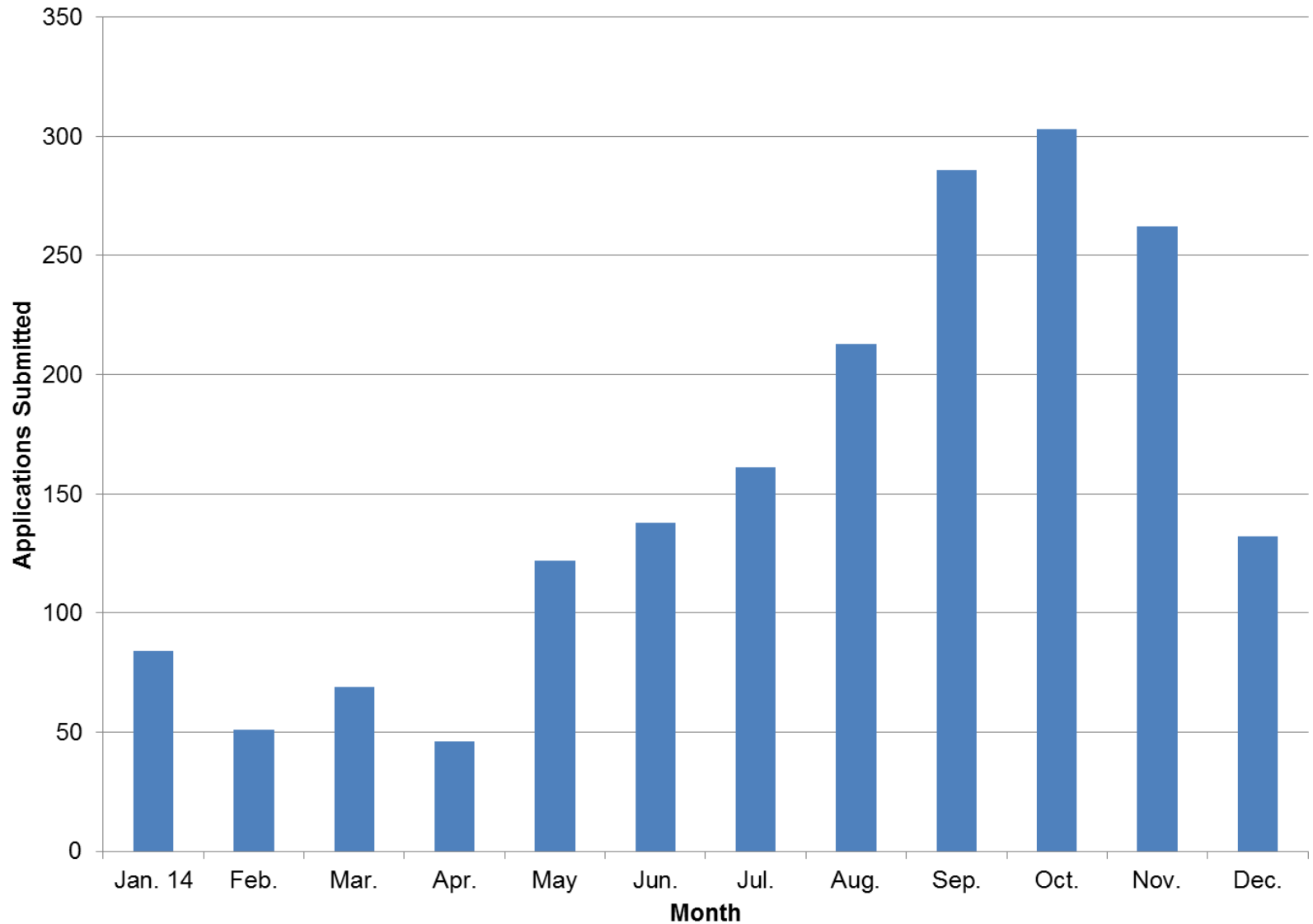
Babak Pazokifard

Mel Capistrano

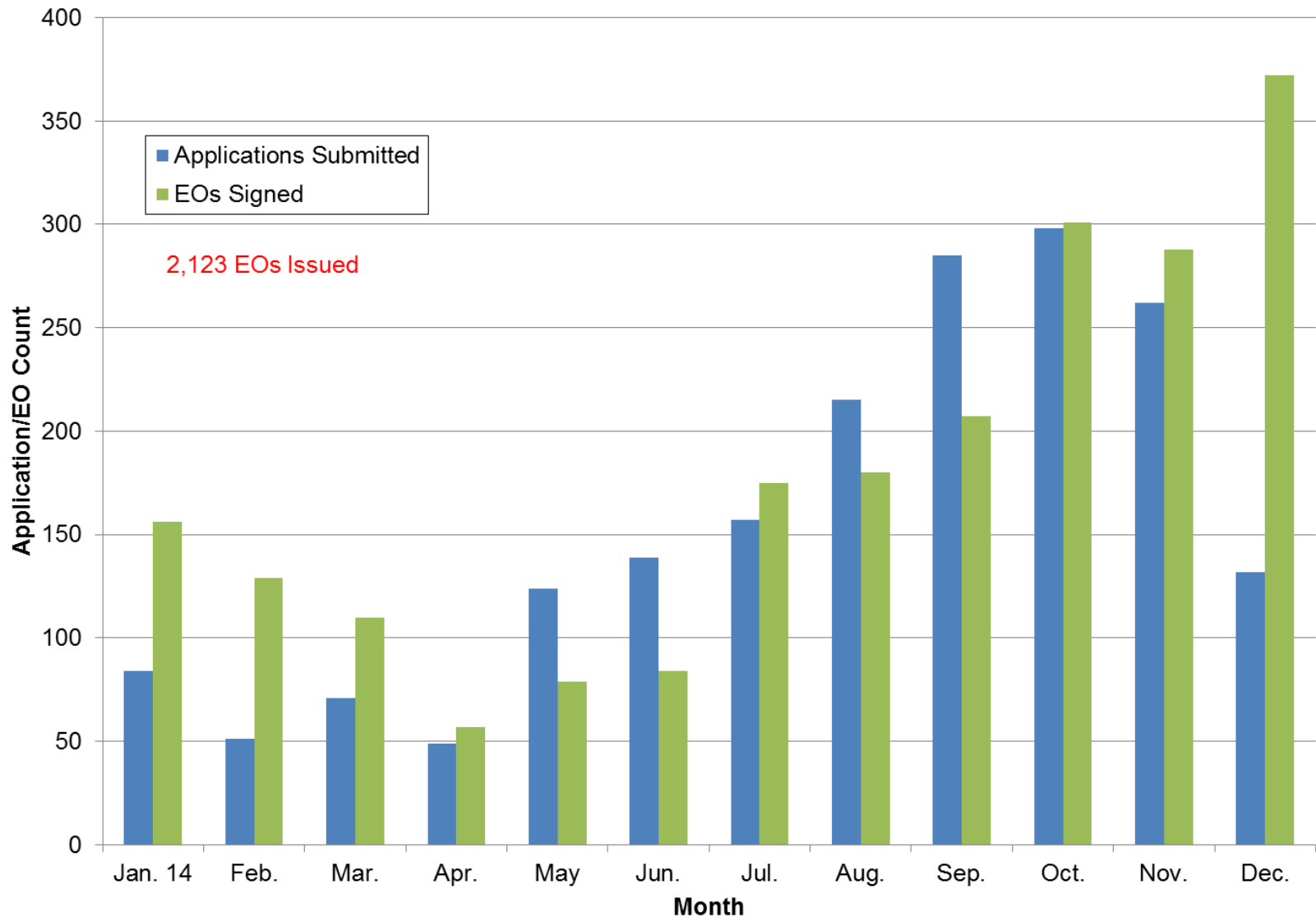
Michael Pham

Luke Gibson

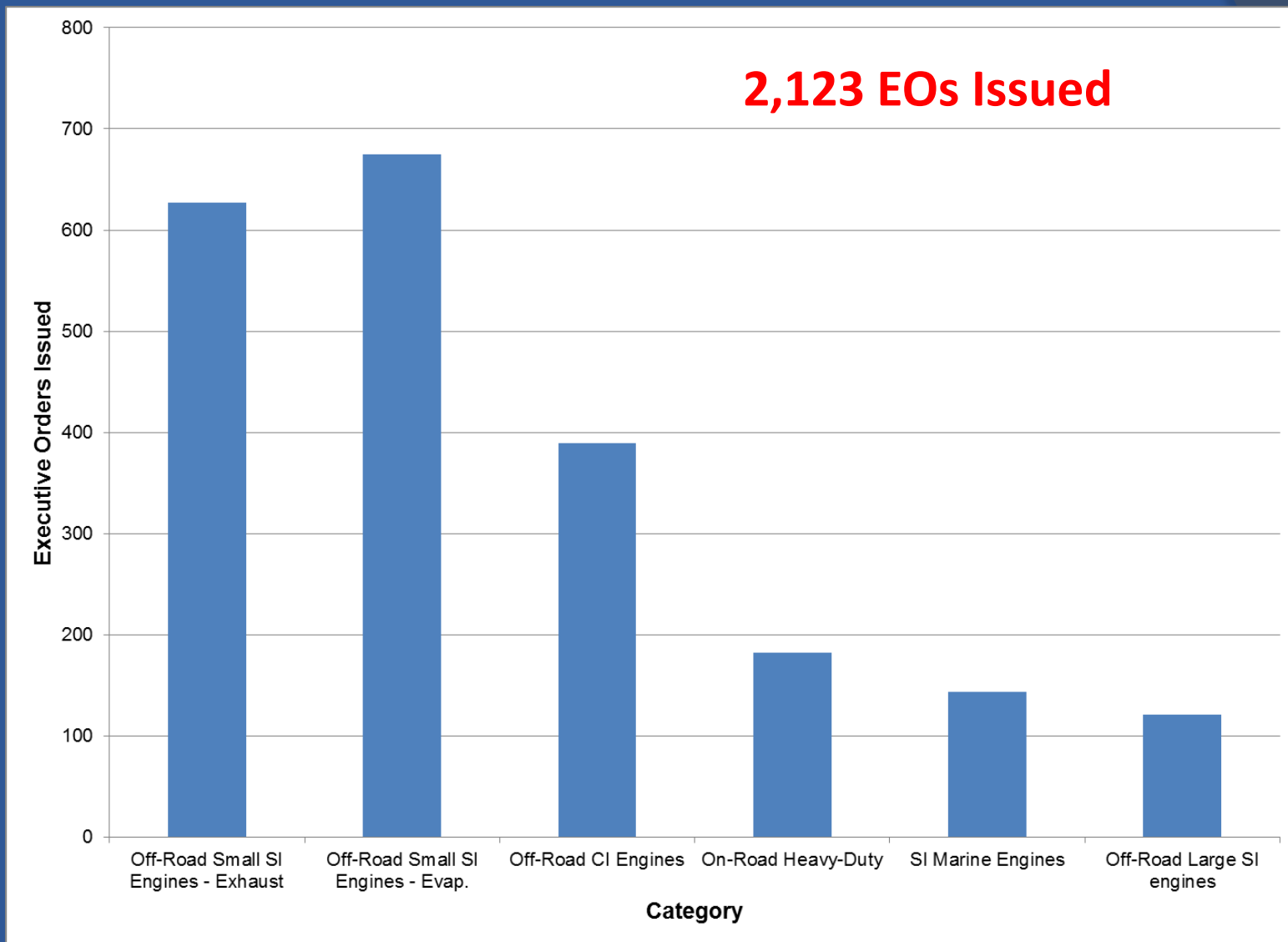
2014 Calendar Year New Engine Application Submittals (CIHD+OFSEC)



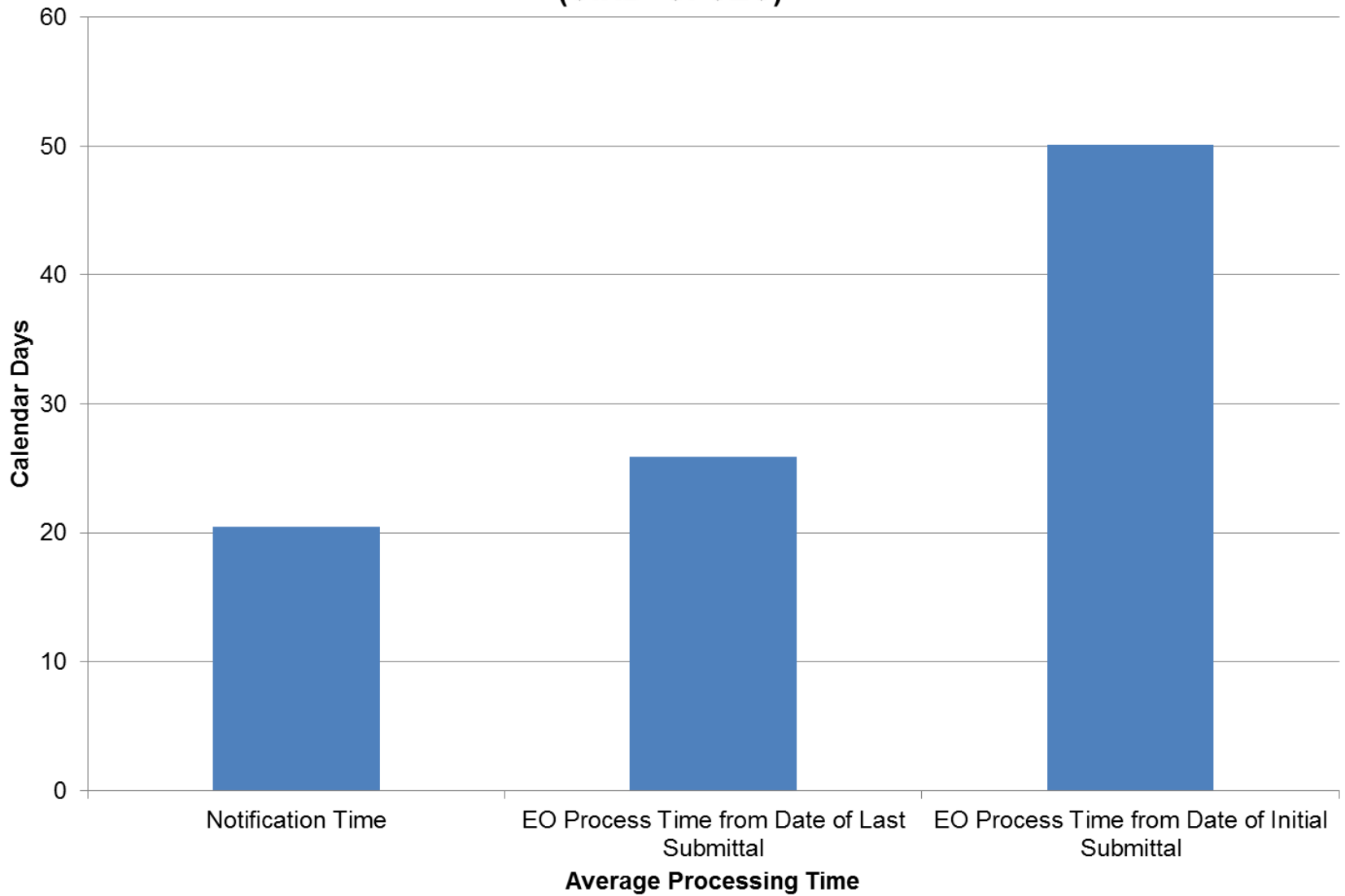
2014 Calendar Year New Engine Application Tracking (CIHD+OFSEC)



Volume of EOs issued in 2014



2014 Calendar Year Average Application Processing Time (CIHD+OFSEC)

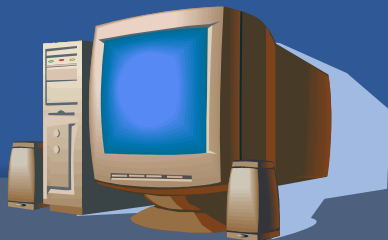


Certification Streamlining

- Workshop was held on November 18, 2014
- Draft mail-out was provided for comments
- Streamlined application categories will include:
 - Carryover,
 - Partial carryover,
 - Carryover/partial carryover requiring OBD approval.
- Final mail-out will be published soon
- Streamlined process will begin in July.

E-Cert Update

- Design revamped to include:
 - Diesel and Otto cycle engines and vehicles
 - Carryover and Partial Carryover applications
 - Greenhouse gas certification
- Data Requirements will be published Summer 2015
- Pilot Program will begin Spring 2016



Transition Period for On-Road HD Phase I GHG

- ARB issued transition period guidance letter (CIHD-2014-053) to EMA on Dec. 22, 2014.
- ARB staff is assisting vehicle and engine manufacturers to comply with the new GHG standards during the transition period.
- Staff is issuing EOs with GHG data to both engine and vehicle manufacturers.
- Please include GHG data in the ABT reports.
- Mail-out will be published soon.



Warranty & Label Updates

- Issues regarding Labels and Warranty statements were identified in 2013.
- Certification staff worked with manufacturers in 2014 to resolve issues.
- All issues have been resolved for the 2015 model year certification.

Staff Will Be Reviewing Adjustable Parameters

- ARB has the authority to check the hardware for preventing adjustments to emissions related components under §86.094-21 and §1039.205.
- Staff is reviewing the tamper resistance hardware on engines.
- Manufacturers will be asked to send ARB hardware for review if:
 - Not received an approval from ARB, or
 - Current approval is more than 5 years old.
- Please coordinate with your certification representative.



OFCI End-of-Year Reports Need To Be Submitted

- Production reports needed for:
 - Certified engines, and
 - Flex engines (TPEM)
- Production reports due 45 days from the end of model year (§1039.250(a)).
- As of today 94% of the reports have been received



ARB Is Initiating In-Use Compliance Testing on HDD Engines

- NTE testing will be performed both on road and/or on a chassis dynamometer
- NTE testing will be compared to the applicable NTE standard
- Select engines may be removed from trucks for further engine dynamometer testing
- Engine dynamometer emissions will be compared to the applicable certification standard
- Engine manufacturers will be invited to participate
- Data acquired will be used to help refine existing HDIUT (NTE) regulations

HDD In-Use Compliance Testing

- ARB may select engine families based on HD IUVP results submitted to EPA
- Preliminary work on implementing a NTE database
 - Manufacturer would submit NTE data electronically
 - NTE data submittals are reviewed for completeness
 - NTE data must be standardized
- Active AECD's during NTE events may invalidate a NTE event
 - Accurate AECD descriptions and triggering information is necessary
 - AECD event broadcast must be standardized

Heavy-Duty EWIR Reporting

2014 Q4 EWIR Data

- 770 unique components reported by HD manufacturers
- 92 parts with warranty claims rates >20%
- Warranty claims may have increased with partial implementation of HD OBD, while some warranty claims may have decreased due to improved design and durability
- Some manufacturers not submitting FIRs/EIRs
- EIRs continue to lack emissions data
- Manufacturer responses delayed and/or incomplete

2010-2014 MY Average HD EWIR Cumulative Claims Rate Based on 2014 Q4 Data

COMPONENT	CUMULATIVE CLAIMS
Catalytic Converter	6%
EGR	14%
EGR Cooler	16%
Turbo	10%
Exhaust Manifold	10%
Injectors	12%
DPF	11%
SCR	6%
Other	6%

Off-Road Engine Defect Reporting

- ARB defect reporting requirements are same as EPA* - 40 CFR 1068 Subpart F or Part I-E
- ARB believes manufacturers have underreported defects, since very few off-road defect reports are submitted to ARB on an annual basis
- ARB will coordinate with EPA to determine if there is a discrepancy in reporting

*California Code of Regulations, Title 13, Section 2425.1

Process for Corrective Action *

- Create improved parts or calibrations
- Work with ARB to implement corrective action in the form of an extended warranty and/or recall
- Contact customers so they are aware of the service campaign.

*California Code of Regulations, Title 13, Sections 2035, 2111-2119

Manufacturers Are Introducing Electronic Fuel Injection (EFI) SSIE Models

- EFI technology significantly different than carbureted
 - Emissions and deterioration characteristics
 - Closed loop feedback control
- New Deterioration Factor (DF) testing required for EFI
- Carbureted DFs not representative of EFI and cannot be carried over to EFI

Certifying Multi-Fuel SSIE Models

- Manufacturers are introducing multi-fuel models:
Tri-Fuel (Gasoline, LPG, CNG)
- DF Testing
 - Identify worst-case fuel and provide technical justification
 - Use worst-case fuel for service accumulation
 - Test using worst-case fuel at each test point
 - Calculate worst-case DF

Averaging, Banking & Trading (ABT)

- 13 CCR Section 2408(d)(4)
 - Starts with 2015 Model Year
 - Any unused certification credits will expire five years after generation
- ABT template and attachments in Mail-out MSO 00-14 have been updated
<http://www.arb.ca.gov/msprog/offroad/sore/sorectp/sorectp.htm>

MY 2013 SORE Evap. Validation Study Background

- Follow-up to similar study performed in 2008
- 18 units obtained from SORE manufacturers
 - 15 certified to design based emissions standard (one eliminated due to engine failure)
 - 3 certified to performance based emissions standard
- 17 units SHED tested
 - Three, 24-hour diurnal tests per unit
 - Testing performed 2013 and 2014

MY 2013 SORE Evap. Validation Study

Passing Test Results

- 40 percent of all systems passed testing
- 7 design based systems
 - 4 riding mowers, 3 generators
 - 4 systems with non-metal tank and the same fuel hose
 - 2 systems with metal tank and the same fuel hose
 - 1 system with metal tank and unique fuel hose



MY 2013 SORE Evap. Validation Study

Failing Test Results

- 60 percent of all systems failed testing
- 7 design based systems
 - 6 generators, 1 riding mower
 - 5 systems with metal tank and the same fuel hose
 - 2 systems were unique
- 3 performance based systems
 - 3 walk behind mowers
 - None used the same fuel hose or tank material

MY 2013 SORE Evap. Validation Study Summary of Results

MY 2013 SORE Evap. Validation Study Summary

Certification Option	Number Tested	Passing Results			Failing Results		
		Units Passing	Average Result	Average Standard	Units Failing	Average Result	Average Standard
Design	14	7	1.44 g/day	2.37 g/day	7	6.18 g/day	1.84 g/day
Performance	3	0	NA	1.0 g/day	3	1.4 g/day	1.1 g/day

Contact Information

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Questions

