



2020 Truck and Engine Manufacturers Association Compliance Workshop

April 21 & 22, 2020

Outline

- Organization Chart
- Certification Statistics
- Flexibilities due to COVID-19
- Heavy-Duty Deterioration Factor (DF)
- Certification Updates MY20/21 and beyond
- Update on ECERT
- Status of certification and compliance
- Introducing HD GHG Section
- In-Use slides

Relocation to Riverside in March 2021

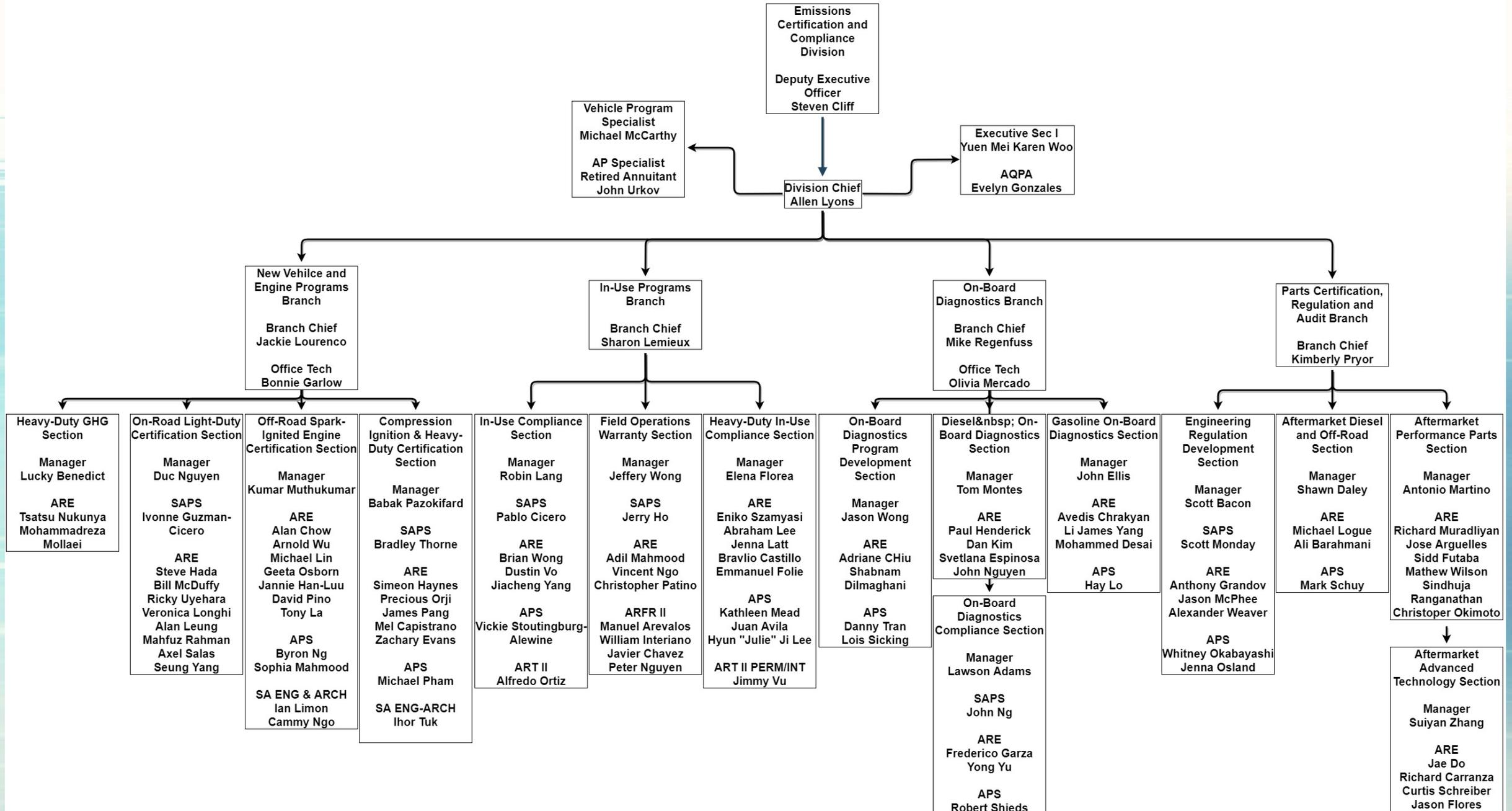
Picture Below: April 2019



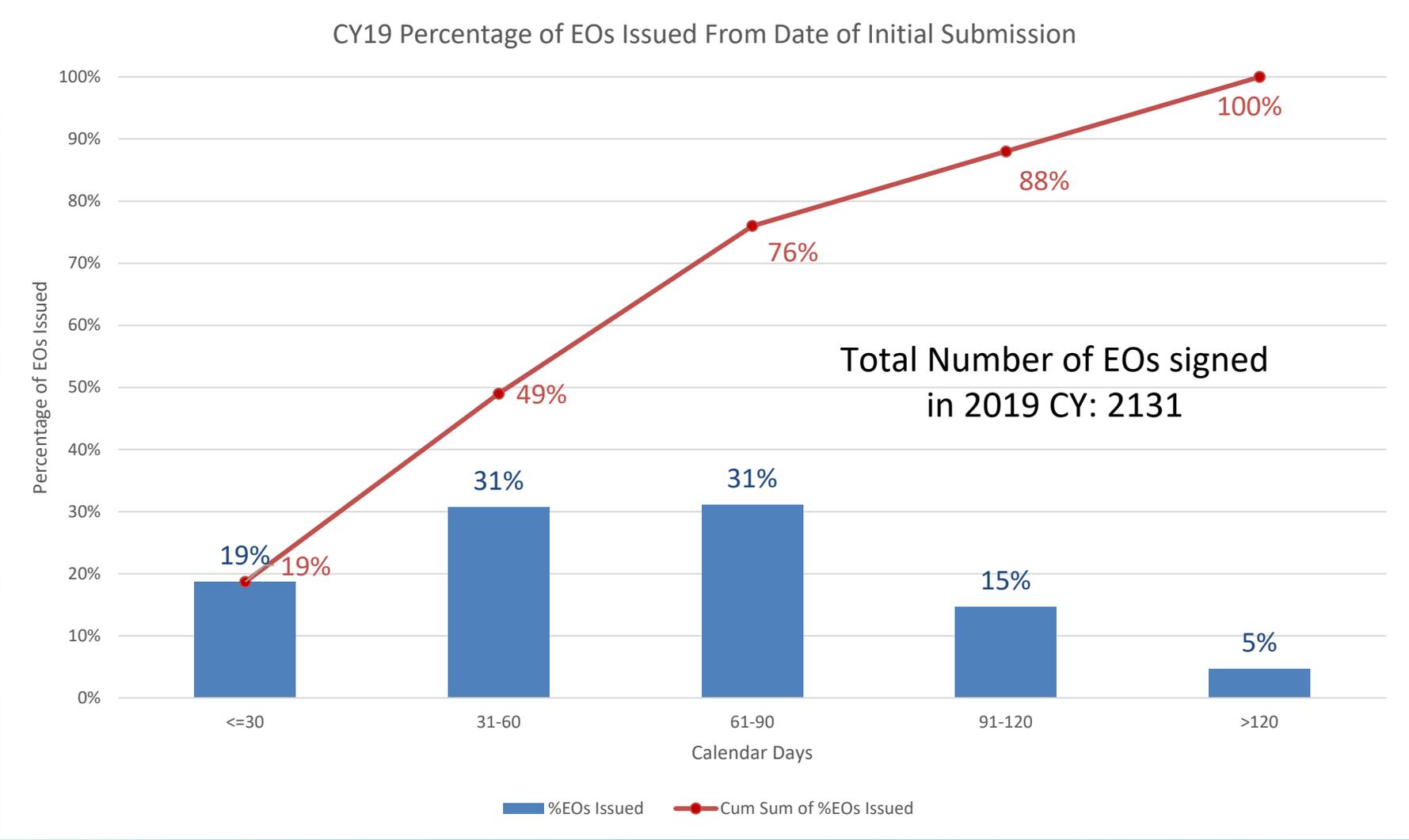
Relocation to Riverside in March 2021



Emissions Certification and Compliance Division Organization Update



CY19 Certification Approval Timing – CIHD & OFSEC



Flexibilities due to COVID-19

- CARB, EPA and EMA are actively working together to address concerns
- All vehicles and engines will require a 2021MY Executive Order to be legal for sale in the state of California
- CARB will be considering flexibilities on a case by case basis. Please submit a written request to CARB

Heavy-Duty DF Validation

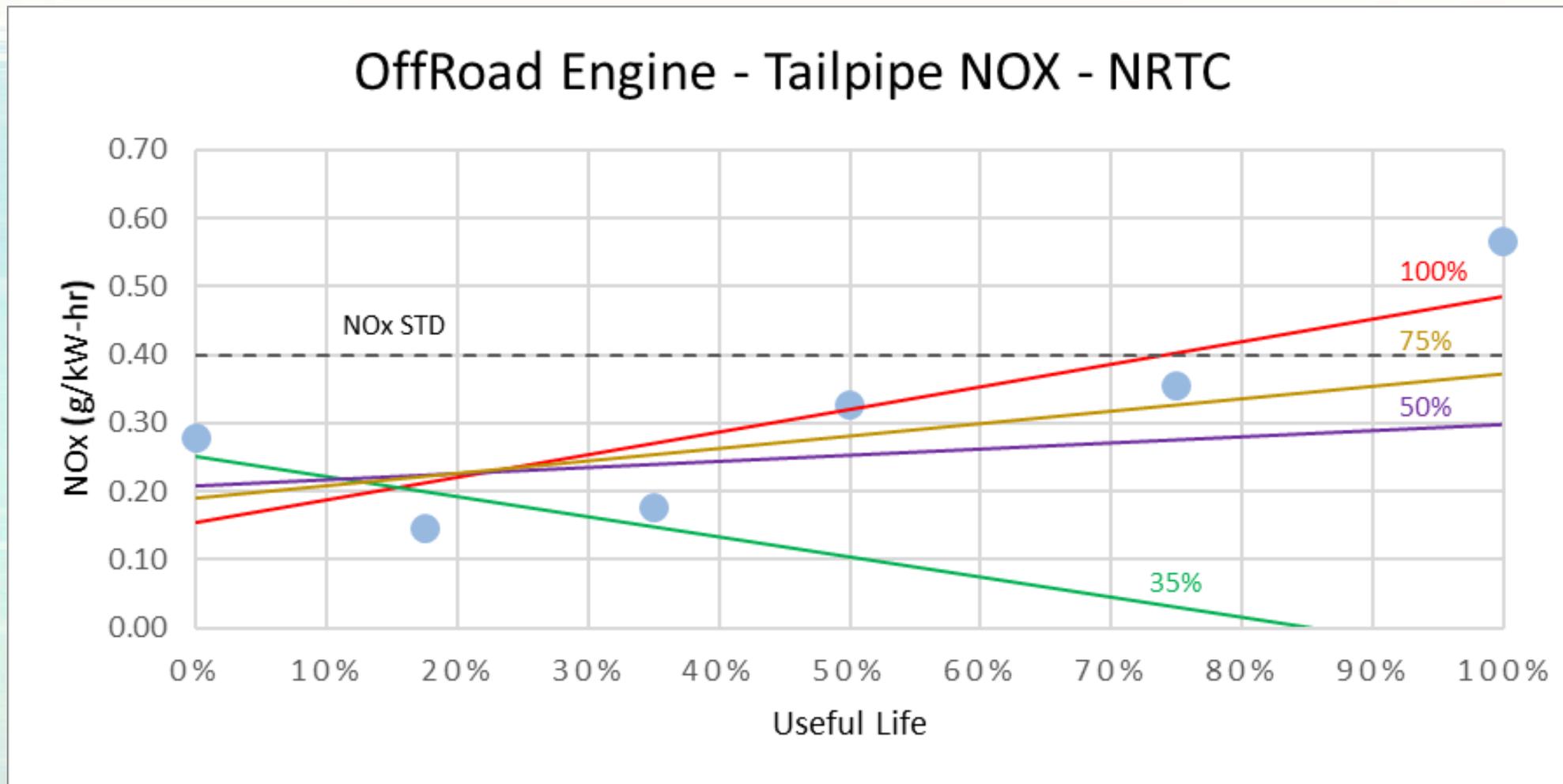
- Brief History
- Applicability and Timing
- 5 pathways to verification
- Other considerations

CARB View: EMA DF Program Showed Mixed Results for SCR Engines

- Engine deterioration
 - Engine-out emissions are fairly stable throughout the UL
 - DF is fairly flat
- Tailpipe-out
 - Tailpipe-out emissions are higher at the end of UL when compared to 35%, 50% or 75%
 - DF increases with inclusion of more data out to UL

EMA DF Program Showed Mixed Results

SCR Engines



Applicability and Timing

- DF validation is applicable to MY2021+ programs with SCR-equipped engines and after-treatment systems
- MY2021: manufacturers need to submit a DF validation plan
- MY2022: manufacturers need to submit DF validation data
- Previous model year DF's need to be validated in order to be carried over for 22MY+

5 Pathways to Validate

1. Engine dyno testing of in-use engines: Two or more in-use engines will be tested every year for the next six years or until compliance at 85% UL is demonstrated
2. PEMS testing of in-use engines: Five or more in-use engines to be tested every year for the next six years or until compliance at 85% UL is demonstrated

5 Pathways to Validate Cont.

3. Data collected from on-board NOx sensors of in-use engines: Seven or more in-use engines to be tested every year for the next six years or until compliance at 85% UL is demonstrated
4. Demonstrate at FUL using an approved DF plan
5. FUL durability demonstration using upcoming on-road procedures (On-road / Highway, Off-road / Non-road)

HD DF - Other Considerations

- Requests for alternate validation procedures based on sound engineering judgement will be considered.
- DF validation must be conducted on the same DDE family and the same rating as the initial durability demonstration (carry across, as applicable).

Certification Issues MY20/21 and beyond

Key compliance issues seen in the past year, including clarifications and guidance for addressing those issues

- Ensure that ECS is designed to operate the same on the test cycle and in real world performance
- Provide clear descriptions of engine operating modes, AECs and emission control strategies

Field Fixes

- Does AC-2B (1975) still cover EPA/CARB's expectations for manufacturers in terms of field fixes?
- If a software improvement is approved by EPA/CARB in a current model year, does a manufacturer need separate approval to update field software for older model years, assuming that no investigation or defect thresholds have been exceeded?
- **Manufactures must submit emissions related field fixes for applicable model years.**

Certification Issues Cont.

- Provide data from DDE/ATS stabilization justifying DF low-hour test point
- New procedures for IRAF calculations starting MY2021: 40 CFR 1065.680
- Test DPF loaded with soot

Certification Issues Cont.

- Submit OFCI engine's emergency AECD report submission
- Submit replacement engine report submission
- For OFCI engine power ratings stepping into the next level, ensure the tested power matches certification power category limits
- Last FLEX program in 2021MY

Certification Issues Cont.

- Label language: OFCI vs Non-road; CA stationary engines

"THIS ENGINE COMPLIES WITH CALIFORNIA REGULATIONS FOR [CURRENT MODEL YEAR] OFF-ROAD COMPRESSION-IGNITION ENGINES UNDER 13 CCR 2423(b)(7)."

- EPA, non-road, stationary may be on the same label

ECERT Updates

- Data Requirements and Business Rules documents have been updated. CARB expects to release these documents soon.
- Alpha testing of the E-Cert database is underway.
- CARB will schedule a workshop to cover the changes made and to describe the submission process. Targeted for early summer.

Comments on Cert Fee Reg Items

- Application fee; 2022/2023 MY timeframe
- Board Hearing delayed to early 2021
- Next workshops late summer/early fall
- Need your input. Please provide your comments by May 15
<https://ww2.arb.ca.gov/mobile-source-certification-and-compliance-fee-regulation-meetings-workshops>
- Send to project Lead: Kathleen Mead; 916.324.9550
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Heavy-Duty GHG Certification Section

- In 2019, CARB created the new HD GHG Certification Section (NVEPB), in the ECCD.
- The section will handle certification applications for new:
 - Phase 2 GHG vocational vehicles and tractors,
 - Aero Devices,
 - Zero Emissions Powertrain, and
 - Trailers
- This section currently has a manager, Lucky Benedict, and two staff, Tsatsu Nukunya and Mohammad Mollaei. Three more staff will be hired soon.

What do We certify?

- **Tractors and Vocational Vehicles**
GHG Phase I – 2014 – 2020 MY
GHG Phase 2 – 2021 MY+
- **2020 MY+ Aero Devices**
(Transferred from the Mobile Source Control Division(MSCD.)
- **2021 MY+ Zero Emissions Powertrains(ZEP) and Enhanced Fuel Cell and Electric Vehicles**
(Voluntary, alternate pathway to Phase 2 GHG)
- **2020 MY+ Trailers** (Voluntary through 2021).
(Transferred from MSCD)
- **HD GHG Engine certification**
(Compression Ignition and Heavy-Duty Certification Section will continue to certify engines)

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Three large, red, 3D question marks are positioned around the central text. One is on the left, one is on the right, and one is centered below the word 'Questions'.

Questions