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# **Diesel Engine Compliance Center**

EMA Certification Workshop

April 27-29, 2021



**Diesel Engine Compliance Center**  
**Allen Duncan, Director**

**DC Office**

**Steven Debord**  
**Nydia Yanira Reyes-Morales**  
**Melvis Strickland**

**AA Office**

**Allen Duncan**  
**Fakhri (FJ) Hamady**  
**Steve Healy**  
**Peter Smith**  
**Ron Schaefer**  
**Marie St. Peter**  
**Lauren Steele**  
**Ryleigh Wright**  
**Houshun Zhang**



# Certification Assignments

## HD On-Highway Engines and Vehicles\*

- Fakhri (FJ) Hamady
- Steve Healy
- Ron Schaefer
- Houshun Zhang
- Ryleigh Wright
- Marie St. Peter

## Nonroad

- Steven DeBord
- Peter Smith
- Melvis Strickland
- Ryleigh Wright
- Houshun Zhang
- Nydia Yanira Reyes-Morales

## Marine

- Steven DeBord
- Peter Smith
- Lauren Steele
- Melvis Strickland
- Marie St. Peter
- Ryleigh Wright

\*Including IMO

## Locomotive

- Peter Smith
- Ryleigh Wright

\*\*Sector Lead  
Contact



# DECC Contacts by Topic

Compliance Reporting (ABT, PLT, etc.)	Your certification representative
Confirmatory Testing	Ron Schaefer, Peter Smith, Ryleigh Wright, Marie St. Peter
Emission Defect/Recall Reporting	Fakhri (FJ) Hamady
HD On Highway In-Use Testing Program	Fakhri (FJ) Hamady, Allen Duncan
HD On Highway Vehicles Certification and Compliance	Steve Healy
HD On Highway Engines Certification and Compliance	Ron Schaefer, Houshun Zhang
Locomotive In-Use Testing Program	Peter Smith, Ryleigh Wright
TPEM Program	Allen Duncan
TPEM Hardship Relief	Allen Duncan
Selective Enforcement Audits	Peter Smith, Ryleigh Wright, Marie St. Peter
Marine CI Certification and Compliance	Lauren Steele, Marie St. Peter, Steve DeBord
Nonroad CI Certification and Compliance	Peter Smith, Steve DeBord



# DECC Contact Information

<b><i>Diesel Engine Compliance Center Staff</i></b>		
Steven DeBord	<a href="mailto:debord.steven@epa.gov">debord.steven@epa.gov</a>	202.343.9169
Allen Duncan	<a href="mailto:duncan.allen@epa.gov">duncan.allen@epa.gov</a>	734.214.4815
Fakhri Hamady	<a href="mailto:hamady.fakhri@epa.gov">hamady.fakhri@epa.gov</a>	734.214.4330
Steve Healy	<a href="mailto:healy.stephen@epa.gov">healy.stephen@epa.gov</a>	734.214.4121
Nydia Reyes-Morales	<a href="mailto:reyes-morales.nydia@epa.gov">reyes-morales.nydia@epa.gov</a>	202.343.9264
Ron Schaefer	<a href="mailto:schaefer.ron@epa.gov">schaefer.ron@epa.gov</a>	734.214.4279
Peter Smith	<a href="mailto:smith.peterl@epa.gov">smith.peterl@epa.gov</a>	734.214.4762
Marie St. Peter	<a href="mailto:StPeter.Marie@epa.gov">StPeter.Marie@epa.gov</a>	734.214.4602
Lauren Steele	<a href="mailto:steele.lauren@epa.gov">steele.lauren@epa.gov</a>	734.214.4788
Melvis Strickland	<a href="mailto:strickland.melvis@epa.gov">strickland.melvis@epa.gov</a>	202.343.9323
Ryleigh Wright	<a href="mailto:wright.ryleigh@epa.gov">wright.ryleigh@epa.gov</a>	734.214.4260
Houshun Zhang	<a href="mailto:zhang.houshun@epa.gov">zhang.houshun@epa.gov</a>	734.214.4788



# Compliance Reporting and COVID 19

- EPA Guidance Issued, CD-2020-05
- [https://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=49390&flag=1](https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=49390&flag=1)
- “If you are unable to meet the compliance deadline because of COVID-19 impacts, we ask that you instead submit a placeholder document through the EV-CIS system. Please submit the same type of compliance document that is due, but instead of the compliance information that you would normally report, explain in the document your inability to report the compliance information. Additionally, you may also contact your EPA certification representative to explain any extenuating circumstances.”



# EV-CIS Production Volume Reporting Module

- Launch was on schedule. MY 2020 data may be entered via this module
- First release only supports HD engines (Phases I and II)
  - Support for other industries will be phased in over time.
  - Long-term intent is to replace the many different collection points and processes for submitting production volume data with one consistent method.
- Webinar presentation:  
<https://www.epa.gov/sites/production/files/2020-10/documents/evcis-pv-reporting-mfr-webinar-2020-10-20.pdf>



## Certification Focus

- Certification review for new engine families in all sectors, emphasizing the following:
  - DF Validation for Tier 4 > 56 kW and on-highway, DF Carry-Across proposals
  - Continued oversight on screening AECDs for defeat devices
  - Ensuring appropriate phase out of NTE deficiencies





# AECD Reviews

- Reviewing AECDs is often the most time-consuming components of certification
- To facilitate screening process:
  - Be sure all AECDs are disclosed
  - Develop one comprehensive document that represents all AECDs
    - Describe AECDs that are present in every engine family you plan to certify
    - For an individual certification application, “gray-out” those AECDs which do not apply
  - Use the template found at the end of guidance letter CCD-04-12 (June 15, 2004) for reporting each AECD and provide thorough information to support your statements



## AECD Reviews, cont'd

- Group AECDs by justification that they are not defeat devices:
  - Those that do not reduce the effectiveness of the emission controls
  - Those that are substantially included in the applicable test procedures
  - Those that are necessary to prevent engine damage
  - Those that are active only during starting of the engine
  - Those that are a part of the design for engines installed in emergency vehicles/equipment
- Familiarize yourself with past Agency guidance on the topic, including VPCD-98-13 and CCD-01-02
- Err on the side of disclosure



# Carryover Engine Families

- Manufacturers routinely submit running changes after certification and certify the same family as a carryover in subsequent years
- For carryover engine families, it's helpful for manufacturers to identify any changes from the previous model year
  - Time is wasted in the review process if we have to determine for ourselves what has changed from one model year to the next
  - Creates challenges later if we find issues with a significant running change that has not been thoroughly vetted
- When submitting running changes, we encourage you to also communicate with your EPA contact about the submittal outside of Verify



# Certification Data

- Posting of Manufacturer Certification Data
  - Using Class Determination (CD-13-05 – Class Determination of Confidential Business Information) to organize and expand the certification data we currently post on EPA’s website:  
<https://www.epa.gov/compliance-and-fuel-economy-data/engine-certification-data>
  - Certification data for all industries is posted on a quarterly basis (January, April, July, and October)
  - Data is not posted until the manufacturer-submitted “Introduction into Commerce” date has passed



# Manufacturer Compliance Reporting

- Data will be reviewed in conjunction with certification applications
- Failure to report may result in:
  - Referral of violation to OECA for possible assessment of civil penalties
  - Revocation, suspension, or voiding of current or prior model year certificates
  - Delay issuance of new certificates
- Information contained in reports is used to make stand-alone compliance determinations (e.g., PLT and ABT), to prioritize compliance oversight activities, and as a data source to assess rule effectiveness
- Refer to CISC-10-17 (September 3, 2010)



# EPA Compliance Testing

- Compliance testing program continues with goal to:
  - Ensure benefits stated in rulemakings are reflected in real world operation
  - Address level playing field issues for all market participants
  - Address compliance issues for new and in-use engines



# EPA Compliance Testing

- Compliance testing and analysis will utilize all of the available tools, including:
  - Confirmatory tests
  - Selective enforcement audits
  - General laboratory and records audits
  - In-use data evaluation from manufacturer and EPA test programs
  - Informal site visits
- Important that manufacturers submit certification and production plans
  - Ensures timely selection and performance of compliance testing
  - See CD-13-06 (March 2013) for further instructions
- Also important that manufacturers maintain up-to-date contact information in Verify



# Emission-Related Defects and Voluntary Recalls

- Part 1068 –
  - EV-CIS Defect/Recall Module Rollout is Complete
  - <https://www.epa.gov/ve-certification/report-forms-and-guidance-defects-and-recalls-under-40-cfr-part-1068-subpart-f>
- Please keep your certification representative informed of submissions!





# Transition Program for Equipment Manufacturers (2021 = last year of TPEM!!)

- **2021 = last year of TPEM!!**
  - Program has already ended for all power categories except >560 kW
  - Ends completely on December 31, 2021
- Web site
  - See <https://www.epa.gov/vehicle-and-engine-certification/transition-program-equipment-manufacturers-tpem>
  - Resource for program participants
- Hardship relief
  - Equipment manufacturers in need of hardship relief should be referred to <https://www.epa.gov/vehicle-and-engine-certification/hardship-relief-participants-transition-program-equipment>



## Marine CI/Locomotive update

- Working on appropriate SCR DF validation guidance with Marine/Locomotive Committee
- Expect to release update of Marine CI Remanufacturing Q&A Document (EPA-420-F-2009) next month (May, 2021)



# Compliance Report

- EPA issued Vehicle & Engine Compliance Activity Reports for MY 2007 and 2008, 2009-2011, 2012-2013 and 2014 - 2017
  - Reports present convenient reference for environmental data collected from manufacturers and generated in our test programs
  - Available at <https://www.epa.gov/vehicle-and-engine-certification/compliance-activity-reports-vehicles-and-engines>

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# **Diesel Engine Compliance Center**

EMA Certification Workshop  
On Highway Breakout Session  
April 28, 2021



## Transmission and Axle Selective Enforcement Audits SEA Provisions: Subpart E of 40CFR 1068

- We expect to conduct an axle or transmission audit during calendar year 2022.
- What do we envision?
  - EPA identifies an axle or transmission of interest (production volume, GEM input values)
  - EPA contacts a vehicle OEM that sells a vehicle configuration utilizing the axle or transmission of interest to obtain information



## Transmission and Axle Selective Enforcement Audits, continued

- OEM receives a Selective Enforcement Audit Test Order
- OEM reaches out to supplier
- OEM/Supplier determine which entity will interact with EPA during SEA (one or both)



## Transmission and Axle Selective Enforcement Audits, continued

- EPA intends to test at the test lab used to originally quantify performance or an independent test lab
- Audit will include evaluation of test cell calibration/verification processes and QA/QC processes associated with both test procedures and test cell.
- 40CFR 1037.560 and 1037.565 define the Axle and Transmission efficiency tests
- 40CFR 1037.320 provides a high level description of audit procedures for axles and transmissions.



## Transmission and Axle Selective Enforcement Audits, continued

- Typical SEA Timeline:
  - January: Contact OEMs for Q/A interaction
  - January: Delivery of Test Order to OEM
  - Early Q1: Initial meeting with OEM and axle/transmission manufacturer
  - Q1 – ~Q2: Regular meetings with component and/or OEM
  - Q3: Lab audit and component test completion
  - Late Q3/Early Q4: SEA Completion (40CFR 1068.450)





## Aerodynamic Testing – Selective Enforcement Audits

- We expect to conduct Coastdown Tests Q2, 2023. (40CFR 1037.305)
- What do we envision?
  - EPA identifies tractors of interest
  - EPA contacts vehicle OEMs for discussion
  - EPA delivers Test Order to OEM
  - Testing by contractor at KSC late Q2 or early Q3, 2023



## Phase 2 Readiness

- MY 2024 Complete Engine Confirmatory Test with Fuel Maps
- What do we envision?
  - EPA identifies engine families of interest
  - EPA contacts engine manufacturers
  - EPA delivers Test Order to manufacturer Q2, 2023
  - Confirmatory Tests occur Q3, Q4, 2023 in NVFEL Test Cell #5



## Phase 2 Readiness

- MY 2024 Complete Engine Confirmatory Test with Fuel Maps
- How do we prepare?
  - We dedicate Q1 and Q2, 2023 to Phase 2 Readiness in Cell 5.
  - Looking for an appropriate engine with established, high confidence manufacturer data set



## Phase 2 ABT

- Determining Available Phase 1 Engine Credits in Phase 2:(see Tech Amendments 40CFR 1036.701, Phase 1 vocational engine credits available to Phase 2)?
  - We plan to recalculate based upon data provided in appropriate MY “270 day report”.
  - Outdated vocational engine CO<sub>2</sub> standard will be replaced with the new standard to determine the effects upon MY 2016 - 2020
  - Updated calculations will be supplied to manufacturer (for review) after MY 2020 calculations are completed

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OBD

April 29, 2021



# OBD Demonstration Guidance for MY 2022

- Guidance issued 26 April:
- [https://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=52574&flag=1](https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=52574&flag=1)
  - Contact DECC staff to discuss
- Additional guidance forthcoming on MY '23
- Working with ASD on other issues (UDS, MY '24)