Off-Road Regulatory and Test Fuel Amendments

December 16, 2011
Sacramento, CA

Overview

• Small Off-Road Engine (SORE) Test Procedure Modifications
• Compression-Ignition (i.e., diesel-fueled engine) Test Procedure Modifications
• E10 Exhaust Emission Certification Fuel Requirements
SORE Test Procedures Background

- ARB’s SORE test procedures reference Title 40 Code of Federal Regulations (CFR)
- U.S. EPA adopted revised test procedures for SORE in 2008 that go into effect in 2011-13
- Included small engines in CFR Part 1065 test procedures
- Introduced standards in CFR Part 1054
- Additional minor modifications
- SORE manufacturers want ARB to align
  - Avoid having to perform two different test procedures with no associated emissions benefit
Proposed SORE Amendments

• Align beginning with 2013 model year
  – Test procedure aligned in CFR Part 1065
  – Certification aligned in CFR Part 1054;
• California-specific requirements
  – Production-line testing procedures
  – Enforcement
  – Credit program

Diesel Engine Equipment

- $19 \leq kW < 56$
- $56 \leq kW < 130$
- $130 \leq kW \leq 560$
- $> 560$ kW
Diesel Engine Background

- ARB adopted Tier 4 off-road diesel regulations in 2004 that were largely identical to Federal requirements at that time
- U.S. EPA made significant changes to federal Tier 4 requirements in 2010, including a new NOx+HC emissions standard
- Diesel engine manufacturers want ARB to align
  - Avoid having to perform two different test procedures with no associated emissions benefit

Proposed Tier 4 Amendments

- NOx+HC Tier 4 Emissions Standard
- Enhanced Labeling Requirements
- Updated Test Procedures in CFR Parts 1039, 1065, and 1068
- Stockpiling Prohibitions
- Miscellaneous
Requirements Specific to California

EXISTING (since 2005)
• More Informative Flexibility Engine Labels
• Mandatory Certification of Flexibility Engines
• Independent ARB Enforcement and Compliance

PROPOSED:
• More Informative Replacement Engine Labels
• No Preliminary Certification Approvals
• Less Simplistic Definition of an Engine

Exhaust Emissions Test Fuel Amendment
Off-Road Spark-Ignition Categories

- SORE
- Recreational Marine Engines
- Large Spark-Ignition Engines
- Off-Highway Recreational Vehicles

Pending Motor Vehicle Fuel Change

- Advanced Clean Cars rulemaking (Jan 2012)
- Propose adoption of 10% ethanol (E10)
- E10 will replace current test fuels:
  - 2 “non-oxygenated” federal fuels: Tier II & Indolene
  - CaRFG2 (oxygenated w/MTBE)
- Aligns w/commercial E10 pump fuel (CaRFG3)
  - Only pump fuel available since 2010
Current Off-Road Certification Test Fuels

• Exhaust testing
  – Same as on-road motor vehicle test fuels
  – 2 federal fuels or CaRFG2
  – Either no or lower oxygenation levels (E0 or ~E6)

Proposed Exhaust Test Fuel Requirements

• E10 for SORE, Recreational Marine engines, Large Spark-Ignition engines, and Off-Highway Recreational Vehicles
• Optional for 2013 – 2019 MYs
• Mandatory starting in 2020 MY
  – Same MY as proposed for motor vehicles
• Makes off-road categories consistent with:
  – Proposed motor vehicle test fuel
  – Commercial E10 pump fuel
15-Day Changes

- Change E10 implementation date to 2020 to align with on-road requirement
- Correct/Revise other relatively minor clerical oversights

Stakeholder Participation

- Participation from Regulated Entities
  - Major Stakeholders:
    - Outdoor Power Equipment Institute (OPEI)
    - Truck and Engine Manufacturers Association (EMA)
    - National Marine Manufacturers Association (NMMA)

- Outreach
- Publication Dates
Recommendations

• Adopt proposed revisions including modified CFR Parts 1054 and 1065 for SORE
• Adopt proposed revisions including modified CFR Parts 1039, 1065 and 1068 for Tier 4 Diesel Engines
• Adopt E10 exhaust emission certification test fuel for SORE, Recreational Marine engines, Large Spark-Ignition engines, and Off-Highway Recreational Vehicles
• Adopt the proposed 15-day changes