Off-Road Small and Large Spark-Ignition Engines

Q/A and Update

2009 EMA Certification Workshop

May 5, 2009
Small Spark-Ignition Engines (SORE)
SORE 2010+ MY Evaporative Requirements (Small Production Volume Tank Exemption)

- Small Production Volume Tank Exemption Manufacturers (SPVTM) must meet:
  - Low Permeation Fuel Hose (CCR Title 13 Section §2754)
  - Carbon Canister (§2754)
  - Fuel Cap Performance Standard (§2756)

- Fuel tank is exempt - permeation data not required to be submitted
2008 SPVTM Exemption

- Some SPVTM may need to submit an annual year-end actual California sales report as specified in SORE FAQ #1-44

- For example, SPVTM with 50-state sales $\geq 4000$ units and choose not to limit exemption labels to $\leq 400$ units
SORE Exhaust Testing
(Haagen-Smit Lab)

• ARB SORE Dynamometer fully operational

• Testing will include:
  - Confirmatory engine testing
  - Title 13 New Engine Compliance testing
Large Spark-Ignition Engines (LSI)
LSI > 1 Liter
(2010+ MY Requirements)

- Exhaust Emission Standards for 2010+ MY > 1.0 liter
  - HC+NOx: 0.8 g/kW-hr
  - CO: 20.6 g/kW-hr

- Alternate formula listed in §2433(b)(1)(B) no longer applicable to 2010+ MY:
  \[(HC+NOx) \times CO^{0.784} \leq 8.57\]
LSI Durability Demonstration (2010+ MY)

• Durability Demonstration:
  - Should be representative of real-world use
  - Accumulation cycle - mixture of Transient and Steady-State operation
  - Minimum of 50% useful life

• Manufacturers have begun submitting 2010 MY durability testing results