Introduction

FACA MOVES Review Workgroup
January 28, 2013

Air Quality & Modeling Center
Assessment and Standards Division
U.S. EPA Office of Transportation & Air Quality

Today's Agenda

- **01:00-01:15PM Welcome, Review of Prior Meeting - Megan Beardsley**
- **01:15-01:45   New Features MOVES2013 - Ed Glover**
- **01:45-04:00   Proposed Evaporative Emissions Updates, Part 2**
- **   Introduction - Connie Hart**
- **   DELTA Cold Soak Calculator- Jarrod Brown**
- **   Modeling Leak Frequency - David Hawkins**
- **   Hot Soak from Leaking Vehicles - David Hawkins**
- **   Temperature & RVP Adj. for Running Losses - David Brzezinski**
- **   Altitude Algorithm Update - Jarrod Brown**
- **   Important Takeaways - Connie Hart**
- **04:00-04:30   General Discussion/Wrapup - Megan Beardsley**

Why we're here: Workgroup Charge

- **Focus on next version of MOVES (MOVES2013) and beyond…**

- **Evaluating data sources and analysis methods proposed for use in developing MOVES:**

  – emission rates

  – fleet and activity inputs

  – fuel adjustments and other inputs

- **Commenting on and/or suggesting new user features and enhancements**

Comments re: prior meetings

- **Truck and Engine Manufacturers Association (EMA) and Association of Equipment Manufacturers (AEM)**
  - NONROAD
- **California Air Resources Board (CARB)**
  - HD Vehicle Emission Test Programs
  - GHG Emissions
  - CNG Transit Buses

EMA & AEM NONROAD comments

- **Comments on NONROAD**
  - EMA supports strategy of developing draft version of nonroad in MOVES2013 with existing nonroad data and updating nonroad data post MOVES2013.
  - Scrappage function must take into account equipment that is not actually scrapped, but migrates to countries outside the U.S.
  - Recommends use of AEM data for agricultural equipment
- **EPA Response:**
  - EPA welcomes any data on nonroad equipment, including sales and exports of used equipment outside the US.
  - AEM Ag Flash Reports Population is a source of sales data for Agriculture Tractors and Combines in the data EPA purchased from PPM.

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EMA & AEM NONROAD comments

- ● **Comments on NONROAD (cont.)**
  - – EMA recommends that activity for equipment should decrease with age in NONROAD, and recommends an approach for data analysis.
  - – They recommend keeping current definitions of load factors and activity regarding idle operation.
  - – **EPA Response:**
    - ● The comments on activity, load factors will be considered in the updates to the model.
    - ● EPA has not made decisions regarding modeling activity by age or operating modes (i.e. idle, and non-idle) in future NONROAD models

- ● **Comments on ENVIRON NONROAD Growth and Activity Report**
  - – EMA had a number of comments on seasonal and regional activity for construction and agriculture, tractor populations, fuel consumption validations, and growth trends
  - – **EPA Response:**
    - ● EPA will consider these comments as we move forward on updating MOVES activity.

CARB Comments

- **Analysis of Recent Heavy Duty Vehicle Emission Test Programs**
    - In-use compliance data vs. MOVES - It would be useful to show CO_2 in addition to NOx. This could give insight as to whether the general under prediction is due to under prediction of load. This is possible since the model predicts a little better for the light and medium heavy classes.
        - EPA Response: We will consider comparing CO2 in our future analyses.
    - In the MOVES estimates, do they use the default assumptions of operating parameters, or do they use the actual values of the in use compliance/drayage fleets?
        - EPA Response : Since the comparisons were made directly to HD emission rates in MOVES (by opmode), the potential differences in operating patterns between MOVES and the independent data do not affect the comparisons.

CARB Comments

- **GHG Emissions**
  - The long-haul fleet fraction that does business in California is subject to improvements in trailers.
    - EPA Response: We are aware of California's in-use requirements for owners to retrofit the aerodynamics and tires for 53 foot box trailers, along with a requirement for 2011MY and newer 53 foot box trailers. We do not have any information to support what fraction of the national fleet this impacts. We would appreciate seeing any implementation data that CARB may have as it becomes available

CARB Comments

- **GHG Emissions (con't)**
  - The rule distinguishes the heavy class by tractor height. Is this reflected in the adjusted coefficients? Does the regulation penalize the taller tractors, even though they may be more aerodynamic in combination with a trailer?
    - EPA Response: The regulation does not penalize the taller tractors, but it does recognize their greater opportunity for aero-derived benefits -- the standards were set so as to drive similar technologies across the range of tractor types.

CARB Comments

- **GHG Emissions (con't)**
  - Claiming NOx and PM benefits associated with aerodynamic improvements may not be appropriate, especially for vehicles with exhaust after treatments like SCR/DPF. What test data do you have that demonstrate criteria pollutant benefit caused by aerodynamics for 2007 and 2010 standard trucks?
    - EPA Response: Because aero improvements will reduce the amount of work done (hp-hr) to move freight, and NOx/PM standards are expressed on a g/hp-hr basis, PM/NOx reductions due to aero improvements driven by GHG standards can be reliably estimated, regardless of whether or not aftertreatment is used.

CARB Comments

- ## GHG Emissions (con't)
  - The modeling of the APU is a good idea, but necessitates a conscious estimate of how many already use truckstop electrification and/or choose the idle NOx certification option.
    - EPA: We agree, and have coded MOVES to allow user input of local information on these controls. We would welcome ideas for data sources at the national level.

- ## CNG Transit Buses
  - The California fleet has a much higher usage of CNG. It has been the majority of sales for many years now. Also, the CNG fleet is much newer.
    - EPA: We are aware that the fraction of CNG buses varies by location. Note that the fraction can be changed in the County Data Manager.