DRAFT February 20, 2002

Modeling Workgroup
Mobile Sources Technical Review Subcommittee
Clean Air Act Advisory Committee

Minutes of the Workgroup's Meeting on February 12, 2002
Alexandria, Virginia

Welcome and Introduction
Gene Tierney (EPA) called the meeting to order at 1:00 p.m. The purpose of the meeting was to provide an update on the development of EPA's New Generation Model (NGM).

New Generation Model Update
John Koupal (EPA) gave the presentation, "New Generation Model Update: Briefing for FACA Modeling Workgroup" in which he presented model development progress, the proposed framework for the model, and the planned next steps in the model development and outreach activities.

Model Questions/Comments

Workgroup members asked how the user of the old model, MOBILE6, would be affected by the new model. Mr. Koupal explained that the NGM would be able to read the files from MOBILE6, but the user would need to learn this new system.

Michael Reale (Daimler Chrysler) asked about the source for the emission factors. Mr. Koupal explained that they would be taken from available sources: testing data for N_2O, CH_4, and refrigerants, and CO_2 estimates based on fuel sales.

Jeanette Clute (Ford) asked what the basic activity data used in the model included. Mr. Koupal explained that this included the type of vehicle, speed, and grade. EPA will obtain large quantities of data using on-board emissions monitors and then use this data to estimate emissions through the model.

Ms. Clute asked how the accuracy of emissions would be validated. Mr. Tierney responded that a separate team will be charged with validation, but that EPA hopes to get an industry-wide understanding of the accuracy. Ms. Clute asked for an assessment of the accuracy, and John Koupal replied that at the time of the model release (anticipated in 2005), the best available data would be used.

Jeanette Clute asked if the NGM would contain correction factors. Mr. Koupal answered that while laboratory data requires several correction factors, the use of on-board data would hopefully eliminate the need for most of these correction factors.

One workgroup member commented that the model should be flexible so that it can be used on a regional scale and allow for a different mix of pollutants.

Tim DeFries (ERG) expressed concern that the emission factors for each driving mode add up to the total for all driving modes and that each mode be assessed the correct factor. For instance, time-delayed emissions, such as post-acceleration emissions may not be accounted for in the acceleration mode. Additionally, Tim was concerned that older or malfunctioning vehicles may not be considered in the determination of the emission factors. Mr. Tierney replied that EPA is currently creating a plan to get an accurate sample of the population.

Modeling Strategy at EPA

Tom Darlingtion created an outline of EPA's modeling strategy and the issues the group may have with each item.

Highlighted Issues

1. How will the new model be integrated into use?

For conformity, everyone would use the new model, as they need it, when it becomes available. Data modeled with MOBILE6 would not need to be re-modeled with NGM.

2. How will laboratory/on-board and old/new data be used together?

The on-board inventory data will never exactly match the laboratory results, but should be close. If laboratory data and bag data cannot be combined, EPA would use the lab data or IM240 data.

3. How will the default cycles be developed?

MOBILE6 already has some default cycles, which should be examined and used in the NGM where appropriate. In general, these would be compared with defaults developed from on-board data. The on-board defaults would be created by using a portable emissions monitoring system (PEMS) to measure emissions from each driving mode on different road types and different grades, and using vehicles of varying style and age. Eventually, when there is enough information comparing activity, or mode, to emissions, a portable activity monitoring system (PAMS) could be used to get an emissions estimate.

Other Comments

Other workgroup members had questions and comments related to Tom Darlington's outline. Mike Rogers remarked that real-world emissions have variability that can't be predicted accurately in the laboratory. However, it would be possible to get a ratio of real-world data

compared to laboratory data, which could then be used as a factor for variability when laboratory data is used. Mr. Koupal added that EPA is planning to compare the on-board data with the laboratory data and present those results.

Ted Dunlop expressed a concern that the laboratory data would be considered to be more correct than the on-board data. John Koupal agreed that the laboratory data should not be considered a "gold standard" in this case. Gene Tierney added that he would prefer to eliminate the use of bag data as soon as possible.

Jeanette Clute and others expressed concerns that EPA will no longer update the MOBILE6 model, and will only focus on the inputs to the NGM. Mr. Tierney replied that with limited resources, EPA has to put its effort in one direction or the other. Since MOBILE6 doesn't allow for an assessment of uncertainty, it seems best to develop a model that will allow it.

Michael Reale asked whether the NGM would use speed as an input. Mr. Koupal explained that on the macro-scale, a speed assumption would be made. Mr. Reale commented that with speed as an input, there will be an issue with scale.

Jeanette Clute remarked that there may be an issue with the schedule for the NGM. Gene Tierney indicated that modeling needs will decrease after SIPs are completed in 2004. The NGM will not be needed until well after 2005. Other workgroup members added that if the NGM is not completed in time, States may use MOBILE6 until NGM is released.

Discussion of MSTRS Presentation

Susan Field compiled workgroup member survey responses about the issues with this modeling effort to present to the Subcommittee. She prepared a presentation summarizing the workgroup's issues and EPA's response to each issue, and requested help from the workgroup in revising the slides in her presentation. The workgroup members worked together to amend her presentation.

While amending her slides, Gene Tierney and the workgroup discussed how future vehicle emissions would be estimated. Specifically, group members were concerned that the model would contain some assumptions about vehicles that would or could not be changed. Mr. Tierney agreed there should be a periodic review of engineering assumptions used in the model.

The meeting adjourned upon completion of amending the slides for Susan's presentation.

Attendees

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