

## **SOUTHEAST TEXAS PHOTOCHEMICAL MODELING TECHNICAL COMMITTEE**

Meeting Summary  
October 19, 2011

H-GAC Offices  
3555 Timmons Avenue  
Houston, Texas

### **Members and Guests Present:**

Marise Textor, Dan Cohan, Judy Bigon, Steve Hansen, Bruce Davis, Rohit Sharma, Zachery Craft, Al Hendler, Graciela Lubertino, Ryan Perna, Don Richner, Isaac Desouza, Loren Raun, Donna Huff, Fernando Mercado, Jim Smith and Dick Karp, and via telephone Dan Baker, Liz Hendler, Erik Snyder, Mark Sather, and Chris Rabideau.

All presentations are available on the SETPMTC Web site,  
[http://www.tceq.state.tx.us/implementation/air/airmod/committee/pmtc\\_set.html](http://www.tceq.state.tx.us/implementation/air/airmod/committee/pmtc_set.html).

### **SIP Planning and Implementation Update – Donna Huff (TCEQ)**

Donna gave the following verbal update. For questions or more information, please contact Donna at [donna.huff@tceq.texas.gov](mailto:donna.huff@tceq.texas.gov).

Donna reported that rule revisions to implement RACT requirements for new EPA Control Technology Guidance (CTGs) for the HGB area will be proposed at the December 7 Commissioners' agenda meeting. More information is available on the TCEQ Web site (<http://www5.tceq.texas.gov/rules/>).

Donna also reported that the next Texas Low Emission Diesel (TxLED) Stakeholder Group meeting has been scheduled for November 1, 2011, at the TCEQ Headquarters in Austin to solicit stakeholder input on potential revisions to the regulations governing the TxLED Program. For more information, please contact Morris Brown at [morris.brown@tceq.texas.gov](mailto:morris.brown@tceq.texas.gov).

As Donna reported, the TCEQ is planning to send comments on the SO<sub>2</sub> SIP modeling guidance, which are due to EPA by November 2, 2011 (subsequently extended to Dec. 2, 2011). During this discussion, Bruce Davis brought up the issue of modeling guidance indicating all sources are to be assumed to be emitting at their maximum rates simultaneously. Erik Snyder responded that this provision is not new in the SO<sub>2</sub> modeling guidance, but is set forth in Appendix W ([http://www.epa.gov/ttn/scram/guidance/guide/appw\\_05.pdf](http://www.epa.gov/ttn/scram/guidance/guide/appw_05.pdf)) for modeling supporting maintenance and nonattainment SIPs.

## **H-GAC Air Quality Issues – Graciela Lubertino, Ph.D. (H-GAC)**

Graciela gave a verbal update. For questions or more information, please contact Graciela Lubertino at [graciela.lubertino@h-gac.com](mailto:graciela.lubertino@h-gac.com).

Graciela reported that H-GAC is in the process of selecting future transportation projects, which will require a new conformity analysis using MOBILE6.

She also reported that H-GAC is still involved in identifying and quantifying mitigation measures for green-house-gas (GHG) emissions, including reduced idling, electric cars and expanded mass transit.

## **EPA SIP-Related Update – Erik Snyder (EPA, Region 6)**

Erik gave a verbal update. For questions or more information, please contact Erik Snyder at [snyder.erik@epa.gov](mailto:snyder.erik@epa.gov).

Erik discussed EPA's current thinking on implementation of the 2008 ozone NAAQS (75 ppb standard). EPA would like to make designations by early next spring (2012) and have asked states to send any changes to their previously submitted nonattainment area recommendations by the end of October or early November 2011. This will allow EPA to send out the "120-day" letters by the end of December 2011 and propose nonattainment area classifications in January 2012. Therefore, SIPs would be due in 2015.

Erik was asked about EPA's use of the "percent-above" classification scheme, which was originally used for the one-hour ozone NAAQS, but seems to classify a lot more nonattainment areas as moderate and marginal when applied to the eight-hour ozone NAAQS. Erik responded that there appear to be legal constraints on EPA deviating from the "percent-above" classification scheme, which is part of the court's determination of the law suits filed on the 1997 eight-hour ozone NAAQS.

Erik was also asked about using the monitored data from 2009 through 2011 to determine design values for designations and classifications of nonattainment areas. Erik responded that EPA is planning to use the 2008 through 2010 monitored data, since the certified 2011 monitored data is not due to EPA until May 1, 2012.

Erik also mentioned the recent CSAPR modification which has resulted in a NO<sub>x</sub> emissions increase of 70,000 tons per year for Texas.

Graciela asked Dick to discuss the issue concerning the use of the MOVES on-road mobile source emissions factor model for conformity to a motor vehicle emissions budget (MVEB) developed with the MOBILE6.2 on-road mobile source emissions factor model.

## **HGB MOVES MVEB SIP Revision – Donna Huff and Dick Karp, TCEQ**

Donna explained that H-GAC will have to begin conducting conformity analyses with MOVES no later than March 2013. The current MVEB (based on MOBILE6.2), which

was deemed acceptable for conformity purposes by EPA as a part of their review of the April 2010 HGB SIP, needs to be updated with an MVEB based on MOVES. Staff from H-GAC and the TCEQ met with EPA Region 6 staff to explore possible approaches for establishing a MOVES-based 2018 MVEB for the HGB area that EPA could deem appropriate for conformity purposes prior to H-GAC having to conduct conformity analyses with the MOVES model. Since the on-road emissions derived with MOVES are notably larger than those derived with MOBILE6.2, EPA indicated a SIP revision would be necessary.

Donna reported that the TCEQ recently sent EPA a letter with a plan for submitting a SIP revision to replace the MOBILE6.2 MVEB with a MOVES MVEB and requesting EPA provide feedback by October 28, 2011. The plan is estimated to take a year to develop and is currently expected to be proposed at an October 2012 agenda followed by adoption at an early April 2012 agenda and submitted to EPA late April or early May 2012.

Dick explained that the technical support analyses for the SIP revision would need to be done by June 2012 to accommodate the administrative activities needed to be able to propose at an October 2012 agenda meeting. Dick indicated that due to this relatively short time frame, a Mid-Course Review (MCR) cannot be conducted at the same time and therefore, the technical analyses will primarily focus on the expected changes to the projected ozone design values using MOVES-derived on-road modeling emissions in place of MOBILE6.2. In particular, Dick reported that preliminary sensitivity modeling indicates the 2018 projected future year ozone design values will still be within the EPA threshold for using weight of evidence as part of an attainment demonstration.

Further, Dick indicated the technical analyses proposed include an update to the trend analysis, model performance and the weekday versus weekend analysis. Dick explained that the weekday versus weekend analysis is a very telling piece of the weight of evidence. The monitored data show a much stronger response of ozone to reduced emissions on the weekend (e.g., from mobile sources) than the model. The model tends to be less responsive, so the future emissions reductions, especially NO<sub>x</sub>, are expected to reduce ozone more than the model estimates.

For questions or more information, contact Donna Huff ([donna.huff@tceq.texas.gov](mailto:donna.huff@tceq.texas.gov)) or Dick Karp ([dick.karp@tceq.texas.gov](mailto:dick.karp@tceq.texas.gov)).

### **City of Houston DIAL Study –Loren Raun, Ph.D., and Donald Richner, CIH, City of Houston**

Loren gave a brief overview of the study and some results and conclusions. Don presented some of the DIAL results depicting emission plumes downwind of various processes (e.g., coker, flare, tank).

In addition to the DIAL (Differential Absorption Light Detection and Ranging) instrument, an open-path FTIR (Fourier Transform Infrared) instrument and a MAAML (Mobile Ambient Air Monitoring Laboratory) were deployed to see if they provided comparable results since the DIAL is so expensive that it is impractical to use on a

routine basis. EPA also deployed a DOAS (Differential Optical Absorption Spectroscopy) instrument at some of the measurement sites. The DIAL instrument was operated by the National Physical Laboratory (NPL), the FTIR by Environ and the MAAML by the City of Houston.

As Loren showed, the comparisons of the data collected by the different methods were generally poor. However, as she noted there are a number of drawbacks to making appropriate comparisons between the data. In addition, Loren showed comparisons between calculated emissions based on EPA approved procedures and the emission fluxes based on the DIAL measurements, which also compared poorly. During Loren's presentation, she was asked about the calculated emissions, in particular whether they were rates per year (e.g., tons per year as normally reported) and then converted to pounds per hour, which is an annualized value and most likely not comparable to measurements made by any of the instruments. Loren responded that it was her understanding that the calculations were made using parameter values specific to the time of the study.

During Don's presentation, he was asked about the possibility of mapping the linear path of the FTIR on the vertical plane of the DIAL for comparison of the FTIR and DIAL comparisons. Don responded that he wasn't sure the trajectory of the FTIR was always in the vertical plane of the DIAL. He also discussed in general the difficulties of comparing planar (DIAL) measurements with linear (FTIR) and point (MAAMAL) measurements.

Don was also asked about the City of Houston's plan to communicate these results to the public and responded that he sees this study as a learning experience and would present it as such.

For questions or more information, contact Loren ([raun@rice.edu](mailto:raun@rice.edu)) or Don ([Donald.richner@houstontx.gov](mailto:Donald.richner@houstontx.gov)).

### **Estimated Impacts of Fires on Texas Ozone Levels – Al Hendler, URS**

Al presented an analysis of information supporting a cause and effect linkage between fires in the Lower Mississippi River Valley (LMRV) and elevated ozone concentrations (e.g., > 75 ppb) in the HGB area during August through October 2010.

Al showed 72-hour HYSPLIT back trajectories for selected days (e.g., August 27, 2010) and was asked about the winds on the days leading up to a selected day. Al responded that the 72-hour (i.e., 3 days) back trajectories do not show a wind shift, which provided some evidence that much of the observed ozone may not be generated locally.

Al was also questioned about the magnitude of the background ozone concentrations entering the HGB airshed on the selected days (e.g., 63 ppb), since air parcels from the northeast often have similar ozone concentrations (e.g., 60+ ppb). Al agreed but said it depended on the source of the background ozone.

Al was asked about the magnitude of the TEOM particulate matter data (e.g., 2.5 microns) measured on the selected days and responded that it was generally higher than average.

### **EPA Exceptional Events Guidance – Erik Snyder and Mark Sather, EPA Region 6**

Mark went over the four principal criteria in EPA's exceptional event rule ([http://epa.gov/ttncaaa1/t1/fr\\_notices/exeventfr.pdf](http://epa.gov/ttncaaa1/t1/fr_notices/exeventfr.pdf)) for data to be excluded from regulatory use. He emphasized that flagging of data suspected as being due to an exceptional event, as well as the documentation demonstrating that the data meet the four principal criteria must be submitted by the state (not private entities) and must go through notice and public comment.

During the presentation Mark and Erik were asked about new guidelines on wildfires generating exceptional events for criteria pollutants, and responded that the new guidance is focusing on PM and winds and not ozone.

Mark and Erik were also questioned about the excessiveness of the measured concentration. In particular, with the downward trend in ozone concentrations, would a high ozone concentration that was not excessive ten years ago possibly be considered excessive at today's levels. Mark indicated that in their review of the exceptional event demonstration submitted by the Cherokee Nation for the Newkirk site, they concurred with two of the four hours which had been flagged. Those two hours had the highest ozone concentrations ever measured at the site during its nine years of operation, while the other two hourly concentrations, which were not considered exceptional, were similar to high concentrations measured previously at the site. A follow up question was whether EPA has established a threshold for how high the concentration must be to meet the exceptional events criteria. Mark and Erik indicated there was no threshold, although for lower percentiles, the exceptional events demonstration would need to provide more analysis.

Another question raised was about the period of time used to determine the "normal" range of ozone variability. Since the Houston area's ozone concentrations have decreased markedly over the last several years, it seems inappropriate to consider the severity of an individual event from 2010 relative to concentrations observed prior to 2006. Jim Smith suggested applying a trend analysis and comparing concentrations against the more recent expected values.

### **Meeting Schedule and Agenda Topics 2012**

Dick asked the group whether they felt we needed a meeting in early December (i.e., within the first two weeks) and there did not seem to be a consensus either way. Bruce Davis suggested that if we have a meeting in December, he would like to discuss industry and TCEQ comments on the draft SO<sub>2</sub> rules and guidance. Donna responded that TCEQ staff may not be ready to discuss our comments, but we would certainly be interested in the comments from industry. Dick indicated TCEQ staff could also provide an update on the HGB MOVES MVEB SIP revision at a December meeting. In addition,

Dick indicated he would ask TCEQ regional staff (e.g., Ryan Perna, Nathan Chenaux) to provide a summary of the 2011 ozone season. Dick indicated he would work with Graciela to identify candidate days for a meeting in December 2011.

Dick also asked the group if they wanted to continue with bi-monthly meetings in 2012, suggesting that less frequent meetings may be warranted. Rohit Sharma suggested we continue with bi-monthly to start and then see if meeting less frequently is reasonable. This seemed to be the consensus of the group, so Dick indicated he would begin considering a February meeting date. The meeting was adjourned.