

SOUTHEAST TEXAS PHOTOCHEMICAL MODELING TECHNICAL REVIEW COMMITTEE

Meeting Summary
September 11, 2007

H-GAC Offices
3555 Timmons Avenue
Houston, Texas

Members & Guests Present:

Ed Fiesinger, Jane Laping, Ken Gathright, Graciela Lubertino, Christine Smith, Bruce Davis, Erik Snyder, Jay Olaguer, Dan Baker, Karl Pepple, Catarina Cron, Rebecca Rentz, Mark Estes and Dick Karp; and via telephone: Jim Smith, Kathy Singleton, Tom Tesche, Jim Wilkinson, and Liz Hendler.

SIP Planning & Implementation Update – Kathy Singleton (TCEQ)

Kathy gave a verbal update. She stated that EPA is in the process of reclassifying the HGB area from moderate to severe in response to Governor Perry's request. Kathy indicated that in response to the Governor's letter, EPA requested a SIP submittal schedule from TCEQ. TCEQ has sent EPA a letter which includes a timeline with a recommended SIP adoption date of March 2010 (<http://www.tceq.state.tx.us/implementation/air/sip/Hottop.html>). EPA will need to propose the reclassification in the Federal Register, with an attainment date "as expeditiously as practicable" (no later than June 15, 2019) and a SIP submittal date of March 2010. Kathy also indicated modeling is underway as well as internal research and analysis of potential control strategies for the HGB attainment demonstration. In addition, discussions have begun with H-GAC on potential local commitments to be included in the SIP. Local meetings may begin in early 2008 to discuss these strategies. When these meetings are scheduled, TCEQ will post the dates on the TCEQ Web site and notify committee members.

Erik Snyder, with EPA, indicated that they have reviewed the TCEQ letter and accompanying timeline, and that EPA may need additional justification supporting the March 2010 SIP adoption date. Erik also indicated that since the Clean Air Act states that an area needs to come into attainment "as expeditiously as practicable," EPA may request TCEQ model an interim year future year (i.e., before 2018).

H-GAC Update – Graciela Lubertino, Ph.D. (H-GAC)

Dr. Graciela Lubertino gave a verbal update. Graciela indicated H-GAC has a contract with TCEQ to identify new control measures and develop a series of RFP inventories for the HGB area out to 2018. Graciela explained that the RFP inventories are developed based upon the 2002 emissions and are determined in 3-year increments. H-GAC has already completed the RFP for 2008 and 2011. They will be developing RFP inventories for 2014, 2017 and 2018, which are scheduled to be completed by August 2008.

Graciela also indicated they would like to conduct a MOBILE6.2 modeling project focusing on potential underestimating of NO_x emissions from heavy duty diesel vehicles (HDDV). As Graciela explained, the MOBILE6.2 model uses default compliance levels for the EPA Pull Ahead and Rebuild mitigation programs, which together could amount to about 9 tpd of presumed NO_x emission reductions. Dick Karp, with TCEQ, indicated this might be a useful project and asked Graciela to send a project description.

EPA SIP Related Update – Erik Snyder (EPA)

Erik gave a verbal update. Erik reiterated EPA's concern about having more justification for the HGB SIP timeline and the March 2010 adoption date. Erik indicated that EPA-HQ is concerned about having consistency in addressing SIP-related issues among the regions. Allowing Texas until March 2010 to submit the SIP is longer than any EPA region has previously granted a state.

Erik indicated that EPA expects to publish the proposal for reclassification of the HGB area from moderate to severe by the end of the calendar year, possibly late November or early December.

Erik indicated that EPA had received SIPs from 10 of the 36 states required to submit SIPs by August 15, 2007. Recall that due to the potential effect the litigation could have had on subpart 2 areas, EPA decided not to take action on non- or late submittals until after August 15, 2007. Erik said that 11 more states have indicated they will be submitting their SIPs by October 15, 2007, which leaves 15 states that will not have submitted. Erik was asked when EPA was going to decide to deem areas as failing to submit. Erik indicated he had not heard, but EPA has not deemed any of the late SIPs incomplete, as yet.

Erik showed some maps of the counties

(<http://www.epa.gov/air/ozonepollution/naaqsrev2007.html#maps>) that would be in nonattainment for the proposed ozone NAAQS of 0.075 and 0.070 ppm, currently and in 2020. Erik indicated that there has been an update to the IPM modeling, so these maps of the projected counties in nonattainment in 2020 may change somewhat. It was pointed out that there are more counties that would be included in nonattainment areas than counties with monitors in nonattainment. For example, in the HGB area, the maps only show four of the eight counties as being nonattainment, because the other four counties do not have regulatory ozone monitors. Therefore the number of counties indicated on the maps is notably less than the counties that would be deemed nonattainment. Erik was also asked about changing the regional nature of the proposed ozone NAAQS. Erik indicated that he hadn't heard anything regarding such a change. However, Erik pointed out that the comment period is open until October 10, 2007.

CAMx(CBIV) v CAMx(CB05) Comparison – Dick Karp (TCEQ)

Dick presented CAMx modeling results for the two carbon bond chemical mechanisms: CBIV and CB05. (Note: Dick's presentation is available on the SETPMTC Web site: http://www.tceq.state.tx.us/implementation/air/airmod/committee/pmtc_set.html).

Although the reasons for moving to the CB05 carbon bond chemical mechanism are based upon its major scientific enhancements over CBIV, the results showed an improvement in the model performance with the CB05 carbon bond chemical mechanism.

The model performance evaluation presented focused on 8-hour ozone concentrations, and Dick was asked about the performance of 1-hour ozone. Dick indicated he thought the 1-hour performance was similar, with CB05 having slightly better performance, and could add that to the presentation.

Dan Baker asked about the specific enhancements of the CB05 carbon bond chemical mechanism. Mark Estes responded that CB05 includes some additional species, such as IOLE to represent olefins with internal double bond(s), while OLE now represents olefins with terminal double bonds. Also, ALD2 now represents acetaldehyde and a new species, ALDX, represents higher molecular weight aldehydes. Dick indicated that ethane can also be included in the emissions for the CB05 carbon bond chemical mechanism.

Dick was also asked about modeling with SAPRC. Mark indicated he was going to address that in his update on the Rapid Science Synthesis (RSS). Mark remarked that a recent study by researchers at UT-Austin suggests that for the HGB area both CB## and SAPRC should be used in testing control strategies.

Base Case Modeling for the 2005 Episodes – Jim Smith, Ph.D. (TCEQ)

Jim presented preliminary modeling results for the three 2005 episodes:

May 19 – June 3, 2005;

June 18 – June 30, 2005; and

July 26 – August 8, 2005.

(Note: Jim's presentation is available on the SETPMTTC Web site:

http://www.tceq.state.tx.us/implementation/air/airmod/committee/pmtc_set.html).

Jim showed both 1-hour and 8-hour model performance measures (e.g., normalized bias) for each of the episodes, as well as time series for some of the pertinent monitors (e.g., Bayland Park). Jim reiterated that this modeling is preliminary, and although some results are promising, we are still working on a variety of emissions and meteorological issues.

Tom Tesche, Ph.D. noted that at a few of the monitors (e.g., Aldine) on a few of the days (e.g., June 28-29, 2005), there appeared to be a minor ozone peak occurring about midnight and wondered if this might be related to changes in the mixing height. Jim indicated we could take a look at it to see if the modeling was generating an unusual mixing height during those occurrences.

Erik Snyder asked whether we were going to apply an HRVOC adjustment. Jim indicated we have not as yet, but we are working on an HRVOC adjustment, which may be applied in future modeling.

TexAQS II & RSS Update – Mark Estes (TCEQ)

Mark presented his top-ten findings from the newly completed final Rapid Science Synthesis (RSS) report. (Note: Mark's presentation is available on the SETPMTTC Web site:

http://www.tceq.state.tx.us/implementation/air/airmod/committee/pmtc_set.html).

During Mark's presentation concerning background ozone, which is usually about 50 ppb, but has been measured at levels as high as 85 ppb, he was asked how the background ozone is determined. Mark showed aircraft ozone monitored flight tracks upwind of the HGB area on two days: one with winds out of the north (40-50 ppb background) and one with winds out of the south (60-70 ppb background). However, as Mark mentioned, in the HGB area the background may include recirculated pollution.

During Mark's presentation comparing ethylene (C₂H₄) concentrations measured in 2006 with those measured in 2000, he was asked about the amount of VOC reduction for C₂H₄ that occurred over this period, as the commenter indicated it was about 64 percent. Mark indicated that the 40% reduction, presented in the RSS report, was an average reduction for the HGB area based upon the monitored data.

During Mark's presentation comparing ambient measured C₂H₄ concentrations obtained by the Solar Occultation Flux (SOF) instrument with reported emissions (2004 STARS), which suggest the C₂H₄ emissions are apparently still underestimated by as much as a factor of ten, he was asked about validating the SOF using NO_x or SO₂. Mark indicated that where SOF measurements of NO_x and/or SO₂ were made, we would look into the validation of the data.

During Mark's presentation comparing maximum daily 8-hour ozone to regional and separately to local contributions, which suggests that they are about equivalent (i.e. local = regional), he was asked about conducting a peak concentration to mean concentration analysis, similar to what EPA has done. Mark indicated we would consider doing that as long as it is still appropriate.

Tom Tesche, Ph.D. asked Mark whether TCEQ was still accepting scientific comments on the RSS report before it will be final. Mark responded that the RSS report is final and TCEQ is not considering any

revision. Additionally, although the time frame for the RSS was “rapid,” a couple of technical workshops, open to the scientific community, were held at which scientific comments were received.

Adjournment

At the conclusion of the presentations, the group discussed the schedule for the next meeting. Currently, as posted on the Web site, there is a meeting scheduled for October 17, 2007. However, it is unclear whether there will be sufficient new material to present by that date. The consensus was to keep the date reserved for now, and TCEQ would notify members as to the meeting’s status around the first of October.