

SOUTHEAST TEXAS PHOTOCHEMICAL MODELING TECHNICAL REVIEW  
COMMITTEE

Meeting Summary  
April 24, 2007

HGAC Offices  
35555 Timmons Ave  
Houston Tx.

**Members & Guests Present:**

Rohit Shrama, Doug Deason, Russel Wozniak, Jane Laping, Ken Gathright, Graciela Lubertino, Christine Smith, Dan Baker, Susan Moore, Bruce Davis, Erik Snyder, Liz Hendler, Soontae Kim, Kelly Keel, Kathy Singleton, Ron Thomas, Doug Boyer, Dick Karp and Tom Tesche via telephone.

**SIP Planning & Implementation Update – Kathy Singleton (TCEQ)**

Kathy gave a verbal update. She indicated that the proposed SIP package would be presented for adoption at the May 23<sup>rd</sup> Commissioners' Agenda Meeting. In addition, the SIP package is scheduled to be posted on the TCEQ website on May 4<sup>th</sup>.

**HGAC Update – Graciela Lubertino, PhD (HGAC)**

Dr. Graciela Lubertino presented a tabulation of the on-road mobile source conformity budget and the emission projections from 2007 through 2035. This table indicates that the projected 2007 NO<sub>x</sub> and VOC emissions are less than the conformity budget and therefore in compliance. Based upon the emissions reduction trend presented in the table, a 50% reduction in the 2007 projection should occur in the year 2015.5. Graciela indicated that the 50% reduction was used because the 8-hour SIP modeling suggested that a reduction of ~ 50% of on-road mobile emissions would be needed to reach attainment. Graciela was asked how often HGAC prepares emission projections to check conformity, and she indicated that typically emission projections are prepared when a new budget is established and/or for the periodic emissions inventories (i.e., every three years). Kelly Keel indicated that the approved ROP SIP for 2008 establishes a new budget, which, presumably, will necessitate new on-road mobile source emission projections to check for conformity. The presentation is posted on the SETPMTC website ([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)).

**EPA SIP Related Update – Eric Snyder (EPA)**

Erik gave a verbal update. Regarding the litigation of the HGB 1-hour SIP brought by environmental groups, their briefs were filed with the court and they are posted in the docket (EPA-R06-2005-TX-0018). EPA needs to respond by mid-May.

With regard to the court decision remanding the 8-Hour Implementation Rule (Phase I), Erik indicated that EPA met their March 22 filing date, and the environmental groups had filed their briefs by the March 25 court deadline. Erik indicated that EPA's work on the Phase I litigation is being handled by Headquarters. One of the issues in the Phase I litigation is the revocation of the 1-hour NAAQS, which is also an issue in the litigation on the HGB 1-hour SIP. Erik also

pointed out the June 15, 2007 submittal date is in Phase II, and therefore the Phase I litigation should not affect scheduled SIP submittals. However, it was pointed out that the LADCO states will not be submitting their 8-hour SIPs until December, because they have opted to model episodes from 2004 and 2005.

Erik discussed the situation with St. Louis, which is relying on 2002 modeling episodes at 4-km grid resolution. Apparently St. Louis has gone to a 2002 episode to incorporate the seemingly unusually low 8-hour ozone monitored in 2004 in the “current” design value calculation. Erik indicated that EPA is concerned that their weight-of-evidence is not convincing enough, given the inclusion of 2004 along with very little in the way of local control measures. Erik was asked about the PM<sub>2.5</sub> status for St. Louis, and replied that St. Louis is also nonattainment for PM<sub>2.5</sub> due to a few local sources.

Liz Hendler, with the 8-Hour Coalition, asked whether TCEQ might be able to persuade the NACAA (National Association of Clean Air Agencies, formerly the STAPPA-ALAPCO) to establish a “clearinghouse” of the nation-wide status of various SIPs (e.g., control measures, schedules). Kelly responded that TCEQ is not currently in a position to present proposals to NACAA. Liz then asked Erik if EPA might consider sponsoring or providing such a clearinghouse of information. Erik indicated he wasn’t sure. Presumably this is a question for headquarter EPA staff.

Erik was also asked about the status of Early Action Compact (EAC) areas that have 2007 compliance dates. Erik indicated that based upon the 2006 data, San Antonio’s design value is slightly above the 8-hour NAAQS. Kelly Keel and Doug Boyer both indicated it was probably unlikely that San Antonio would have low enough ozone measurements this year to bring their design value down below the NAAQS. Northeast Texas’ (e.g., Longview) 8-hour design value is also close to the NAAQS, but they would also need lower than expected ozone measurements this year to bring their design value below the NAAQS. Erik indicated that Austin is an Ozone-Flex area and has different requirements than EACs.

Erik was also asked about the status of the NAAQS review. Erik indicated that EPA is under a court order (consent decree) to review the current eight-hour ozone NAAQS. The proposal for a new NAAQS needs to be issued by June 2007 and a final NAAQS promulgated by March 2008. Erik didn’t have any insights into what the agency would be proposing.

Erik indicated that the new modeling guidance for ozone, PM and haze released by OAQPS (April 17, 2007) does not include any substantive changes in the ozone portion. The new guidance does not include the new procedure being required to address unmonitored areas of modeled high ozone, although this procedure, called MATS (Modeled Attainment Test Software), was made available to states last December (2006). It is likely TCEQ will need to use this procedure or a comparable one as part of the attainment SIP modeling, even though it has yet to be included in the modeling guidance.

### **2005/2006 Meteorological Modeling Update – Doug Boyer (TCEQ)**

Doug presented some of the meteorological modeling results and comparisons with monitored meteorological parameters (e.g., wind speed and direction) for the June 2005 and July/August 2005 episodes. Doug indicated that meteorological modeling of the 2006 episodes including the period of the TexAQS II intensive field monitoring is awaiting data processing and quality assurance of the meteorological data. (Note: Doug's presentation is 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))).

Doug was asked about the 2006 episodes, responding that they include a June episode (May31 to June 16) and several small duration episodes from the intensive period (August 1 to October 15). Regarding the intensive period, Doug indicated that meteorological modeling may be conducted for the entire period, although the photochemical modeling may only be conducted for defined small duration episodes. Dick Karp indicated that the decision to conduct the meteorology modeling for the entire intensive period would probably depend on the availability of quality assured, useable data for the entire period and possibly computer storage constraints. Additionally, the 2006 radar profiler data needed for nudging of the June 2006 episode, as well as the episodes during the TexAQS II field intensive have not yet been processed. TAMU is currently processing the 2006 radar profiler data under a work order from TCEQ. Nudging files for the 2006 episodes are expected to be completed by later this summer.

At the previous SETPMTC meeting (February 27), Doug had shown whisker plots, which compared monitored versus modeled winds. Subsequent to that meeting, the modeled winds used in the whisker plots have been adjusted to account for the vertical level of the model. The model's first vertical layer extends to 33.9 meters and the modeled winds are simulated for the mid-point of the layer (i.e., ~ 17 meters). However, the monitored winds are measured at 10 meters, and therefore the modeled winds were interpolated to 10 meters to be comparable to the monitored winds. Doug presented whisker plots of monitored versus modeled (17 meters) winds and monitored versus modeled (10 meters) winds for selected monitoring sites (e.g., Galveston [GALV], Clute [CLTA]). In general, the whisker plots of monitored versus modeled winds at 10 meters compare much more favorably than monitored versus modeled winds at 17 meters. This provides assurance that the modeled winds for the first layer are reasonable. Doug was asked whether the interpolation from 17 meter winds to 10 meter winds is based upon the typical power law or whether it is just a linear interpolation. Doug responded that the interpolation is a feature in the Metstat computer program, that this program appears to use slightly different interpolation depending on the value of a vertical stability factor, and that the value of the vertical stability factor often results in a linear interpolation.

Next Doug presented a time-series plot comparing PBL heights determined from radar profiler data, with the model projected PBL heights for the June 19-30, 2005 episode. For the 2005 episodes, there was only one radar profiler in operation within the CAMx 4-km modeling domain, at LaPorte. In addition, Dick explained that the model projected PBLs are derived from the vertical profile of model projected  $K_v$ 's (i.e., the vertical mixing coefficients) from each of the model's vertical layers. CAMx model actually uses  $K_v$ 's and not PBLs, but, unlike  $K_v$ 's, PBLs are a physical feature that can be deduced from radar profiler data and used to evaluate the meteorological model (MM5). Doug was asked about the unfavorable comparison between the radar profiler deduced PBL (higher) and the model projected PBL (lower) on June 21, and

whether the large difference could be due to differences in the winds. Doug seemed to indicate that could be possible. Dick indicated that the radar profiler deduced PBL on June 21 seemed unusually high for the LaPorte site given its close proximity to Galveston Bay and the Gulf.

Doug also presented a tile plot of model projected PBLs for July 29, 2005 (i.e., from the July 26 to August 8, 2005 episode), for 3 pm, which is typically when the PBL is at its maximum daily height. Doug pointed out that one of the features the model is correctly simulating is the notably lower PBLs along the coastline. Doug also presented an animation of the model projected PBLs for August 1, 2005. Tom Tesche asked whether the animations show the occurrences of PBL “holes” [holes refers to relatively small geographical regions where the PBL is much lower than the surrounding area], indicating that modeling they (Alpine Geophysics) have conducted seems to indicate a correlation with the land-surface-model (LSM) used in the meteorological model (MM5). Doug responded that currently the NOAA LSM is being used and some PBL holes have been simulated. Doug also indicated that different LSMs may be tested.

Next Doug presented an animation of sea-surface-temperatures (SST) contours derived from satellite imagery data for the July 26 to August 8, 2005 episode. Doug was asked about the temporal resolution of the SST, and indicated it was daily. Doug also indicated that the spatial resolution of this satellite derived SST is still rather coarse, and a higher resolution dataset is being developed. However, MM5 was run using this satellite derived SST as a test to see how the simulated meteorological parameters (e.g., temperatures, winds, PBL) may be expected to change. Doug showed animations of MM5 model simulated surface temperatures with and without satellite derived SST, and a difference plot (i.e., with SST minus without SST) for August 1, 2005 at 4 pm. The difference in model projected surface temperatures over the Gulf only varied  $\pm 0.25$  degrees. However over the land and even along some parts of the coastline, the range in the difference in model projected surface temperatures was notably greater. Doug also presented a contour plot of MM5 model simulated cloud-fraction with and without satellite derived SST for August 1, 2005 at 10 am. Doug was asked about the notable cloud fraction presumably being simulated for the HGB area, and how this relates to actual clouds. Doug indicated that the cloud-fraction parameter is used in CAMx, but that he wasn't sure of the correspondence between cloud-fraction and actual cloudiness.

Next Doug presented a series of whisker plots of monitored versus modeled (10 meters) winds, with and without SST for selected monitoring sites (e.g., LaPorte [LAP1], Galveston [GALV]) for the July 26 to August 8, 2005 episode. Doug indicated that the comparisons between with and without SST were mixed, in that for some sites on some days the SST model projected winds appeared to compare more favorably to the monitored winds, but at other sites on some days the SST model projected winds appeared to compare less favorably to the monitored winds.

Lastly, Doug indicated that future work will include developing other model evaluation tools (technical analyses) such as plume plots comparing modeled winds to monitored winds. Plume plots using monitored winds for ozone events can be found on the TCEQ website (search for “significant events.”) Doug also indicated that future modeling will use updated land-use and higher resolution SST. In addition, other physics schemes will be tested, including cumulus parameterization and, as mentioned above, alternative LSMs. Further, MM5 modeling of the

May 19 to June 3, 2005 episode will be completed, and as CAMx modeling is completed, the results will be evaluated with respect to the meteorology.

### **2005/2006 Emissions Modeling Update – Ron Thomas (TCEQ)**

Ron presented an update and status on the emissions modeling being conducted for the 2005 episodes. (Note: Ron's presentation is available on the SETPMTTC 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))).

A question was asked about the status of an emissions modeling protocol, which similar to the meteorological modeling protocol has not yet been developed but is scheduled to be initiated.

Ron first presented a review of the CAMx modeling domains, which establishes the spatial extent for which modeling emissions need to be developed, and the specific episode dates, which establishes the temporal extent for which modeling emissions need to be developed. Tom Tesche asked if TCEQ was going to conduct modeling using the 1.33 km domain, since Alpine is planning to do so. No final decisions have been made. Tom also asked about the availability of meteorological and emissions modeling files. Dick indicated that the current files are very preliminary and have not been fully evaluated so they are very likely to change. Therefore, these files are not suitable for sharing. However, when adequate base case modeling is achieved, it seems likely that the meteorological and emissions modeling files will be placed on TCEQ's ftp site.

Ron was asked about the extent of the special hourly point source emissions for 2005. Ron indicated that he believed the special hourly point source emissions were collected for only a few days of the May-June 2005 episode, through June 1.

Next Ron presented an update on the on-road mobile source emission development. SIP quality link-based, episode-specific on-road mobile source emissions are being developed by TTI for the 8-county HGB area and the 3-county BPA area. For the other counties within Texas, TTI develops non-link based emissions using county vehicle miles traveled (VMT) by roadway type. TTI's schedule is to complete these link-based, episode-specific on-road and non-road emissions by late summer of 2007. Once these on-road emissions are received from TTI, TCEQ will complete the processing with EPS3, which is expected to take a couple of months, with model-ready files expected by the end of October 2007. For the areas outside Texas, the National Mobile Inventory Model (NMIM) is being used for the appropriate year for the dates of the various episodes (i.e., 2005 or 2006).

Ron was asked about the resolution of the on-road emissions, and responded that the link-based, as well as the non-link based are developed at the 2-km gridded level. These emissions are then aggregated up to the grid size of the modeling domain (e.g., 4-km gridded domain). For example, part of the processing TCEQ does with the TTI developed files is to render them to the 2-km gridded level.

Ron indicated that until TTI completes its work, TCEQ has developed a placeholder for the on-road emissions. SIP quality on-road emissions were developed for the 2000 episode used in the modeling for the 1-hour SIP and the 8-hour SIP. TCEQ has 2007 future case and 2002 baseline

sets of on-road emissions. For each county and vehicle type, the VMT was interpolated between 2002 and 2007 to the episode year (e.g., 2005) and coupled with the ozone precursor emission rates determined with Mobile6.2. Ron showed NO<sub>x</sub> emission tile-plots for a “weekday” day-type and a “Sunday” day-type for the June 2005 episode. Doug Deason noted that the tile-plots indicate the NO<sub>x</sub> emissions for the 8-county HGB area vary considerably between the weekday (245 tpd) and the Sunday (105 tpd).

Next Ron presented an update on the non-road emissions. The emissions of most source types included in the non-road category are developed using the NONROAD model and the appropriate year for the dates of the various episodes (i.e., 2005 or 2006). [Note that NMIM can be used to run the NONROAD model.] However, aircraft, locomotive and marine vessel (ships) emissions are not included in the NONROAD model.

Ron indicated that for the Texas nonattainment areas, TCEQ has run the NONROAD model for 2005 and 2006. For the aircraft, locomotive and ships, TCEQ has used the latest survey and trend data to develop appropriate emission estimates. For example, 2005 and 2006 emissions from ships are projected from trends in cargo growth. Additionally, ship emissions are treated as pseudo point sources to more appropriately elevate their exhaust plumes.

Ron indicated that for Texas attainment counties, TCEQ starts with the 2002 TexAER periodic emissions inventory (PEI). For those source types included in the NONROAD model, TCEQ has developed a scaling factor by ratioing an NMIM run for 2005 with an NMIM run for 2002 and applied this ratio to the 2002 TexAER. For aircraft, locomotives and ships, TCEQ has adjusted the 2002 TexAER emissions using EGAS5 for growth and federal controls (e.g., train and ship engines) for reductions.

Ron indicated that for the states beyond Texas, TCEQ has started with the 2002 NEI. For those source types included in the NONROAD model, TCEQ has run NMIM for 2005 and 2006. For aircraft, locomotives and ships, TCEQ plans to adjust the 2002 NEI emissions using EGAS5 for growth and federal controls for reductions.

Ron also indicated that currently, TCEQ is using the 2000 vintage Canadian emissions and off-shore emissions in the Gulf. It is uncertain if and when a 2005 emission update will be available for the Gulf from MMS. Dick indicated that for the first time in this inventory, shipping emissions have been added to the Gulf and Atlantic regions within the modeling domain.

Ron presented a table listing the various non-road source types and their NO<sub>x</sub> and VOC emissions for 2000, 2002, and 2005. Ron was asked about the relatively large increase in NO<sub>x</sub> and more so VOC in both Industrial and Commercial Lawn & Garden emissions. Ron indicated that he would have to check on the Commercial Lawn & Garden emissions, but it was his understanding that the notable increase in the industrial source type was due to an increase in utilization of fork-lifts. Ron was also asked about the difference between the Industrial and Commercial source types, which he indicated he would also have to check on.

Next Ron presented an update on the area source emissions. Similar to parts of the non-road inventory, TCEQ starts with the 2002 TexAER for area source types within Texas and the 2002

NEI for states beyond Texas. Ron indicated that for the Texas nonattainment areas, TCEQ is using a newly available draft 2005 TexAER, and for the Texas attainment counties, TCEQ has adjusted the 2002 TexAER emissions using EGAS5 for growth. Ron indicated that for states beyond Texas the 2002 NEI has also been adjusted using EGAS5. Again, similar to the non-road inventory, for area sources in the Gulf and Canada, TCEQ is currently using the 2000 emissions.

Ron presented a table listing the various area source types and their NO<sub>x</sub> and VOC emissions for 2000 and 2005. Ron was asked about the increase in VOC emissions for the Solvent Use & Surface Cleaning/Coating source type, especially since presumably a national rule has been promulgated to reduce VOC from solvents. Ron indicated he would have to check on the reason for the increase.

Ron was also asked about emissions from fires, presumably wildfires and controlled burning. Dick indicated that fires are typically included with point sources to ensure they are properly handled as elevated sources (i.e., given plume rise). Currently TCEQ is investigating the presence of fires during the various episodes. Satellite imagery has been used to identify potential fire signatures, and now TCEQ staff are determining the validity of the signatures and where valid, determining the magnitude of the fire. If a sufficient number and/or magnitude are identified then fire emissions will be developed.

Next Ron showed area/non-road source NO<sub>x</sub> emission tile-plots for a “weekday” day-type and a “Sunday” day-type for the June 2005 episode. The day types do not show as large of a difference as on-road mobile, but the difference is still notable. The tile-plots indicate the NO<sub>x</sub> emissions for the 8-county HGB area are 173 tpd for the weekday and 106 tpd for the Sunday. Ron was asked about the relatively large amount of emissions in Louisiana. Dick indicated that some of the emissions displayed in Louisiana are from shipping, such as along the intra-coastal waterway. Similar shipping emissions in Texas are grouped with the point sources and therefore do not show up in these emission tile-plots.

Next Ron presented an update on the point source emissions. Ron indicated that TCEQ will be using the 2005 STARS database for sources within Texas for both the 2005 and 2006 episodes. Where appropriate, TCEQ will substitute hourly emissions from the acid rain database (ARD), the Consolidated Compliance and Enforcement Data System (CCEDS), and the Special Hourly emissions database. Ron indicated that currently the 2005 STARS is incomplete and not fully quality assured, but it should be ready for release around June 1. Ron was asked about the availability of a 2006 STARS, and he responded that the 2006 emissions data were only recently received (end of March) and it will be about a year before those data have been reviewed and fully quality assured. Doug Deason indicated that it typically takes about 18 months from the end of a year before the emissions inventory is complete.

Ron indicated that as a placeholder for any preliminary CAMx modeling (e.g., June 2005 episode), TCEQ has developed Texas point source emissions starting with the 2004 STARS, substituted with hourly episodic ARD. Ron indicated that TCEQ has received, or will receive, 2005 point source emissions from Oklahoma and Arkansas and 2004 point source emissions from Louisiana. Ron indicated that Louisiana has indicated their 2005 emissions are incomplete

due to Katrina. For all the other states, Ron indicated TCEQ has started with the 2002 NEI, substituted hourly episodic ARD, and will use EGAS5 for growth of non-acid rain sources.

Ron also indicated that currently, TCEQ is using the 2000 vintage off-shore emissions in the Gulf (from MMS) and for Mexico (from BRAVO) and Canada. It is uncertain if and when a 2005 emissions update will be available for the Gulf from MMS. Similar to Louisiana, 2005 emissions data from the Gulf may be compromised due to Katrina.

Next Ron presented a table listing the point source NO<sub>x</sub>, VOC and HRVOC emissions for 2000, 2004 and 2005, although noting the 2005 emissions are incomplete. Ron was asked about the notable decrease in the VOC emissions from 2004 to 2005, and he indicated that this may be due to the 2005 not being complete. Ron was also asked about the HRVOC jump from 2004 to 2005, and Ron responded that the increase is likely due to better reporting of HRVOCs due to awareness and the HRVOC monitoring programs. Ron also presented elevated point source NO<sub>x</sub> emissions tile-plots for the lowest (242 tpd) and highest (254 tpd) days for the June 2005 episode, which indicate the relatively small daily variation in elevated point source NO<sub>x</sub>.

Next Ron presented an update on the biogenic emissions. Ron indicated that to date the biogenic emissions have been developed using GloBEIS at a 4-km gridded resolution for the June and July/August 2005 episodes, but will be re-developed at a 2-km gridded resolution consistent with the other source categories (e.g., area, mobile). In addition, Ron indicated that the updated land-cover data provided by the UT Center for Space Research (UT-CSR) has been used in the development of the biogenic emissions, as well as data from the Texas Forest Service's Houston Green project, the USDA Forest Inventory & Analysis Group, and new USGS national land-cover data, including recent satellite and aerial photography. Ron also indicated that TCEQ plans to run GloBEIS in a "non-model speciated" mode and post-process with SPLTBEIS, which allows for alternative chemical speciation mechanisms (e.g., CB05, SAPRC99). Ron was asked about the use of SPLTBEIS, and responded that Environ provided TCEQ with the SPLTBEIS computer program to facilitate the use of chemical speciation mechanisms. Ron was also asked if TCEQ planned to use the SAPRC chemical speciation mechanisms, and responded that providing there is sufficient time SAPRC as well as the CB05 chemical speciation mechanism may be used.

Further, Ron indicated that TCEQ is using a kriging technique to generate hourly temperatures at the various gridded domain resolutions (e.g., 2 km), and Photosynthetically-Active Radiation (PAR) derived from GOES8 satellite data.

Ron presented two biogenic VOC emissions tile-plots, based upon the older land-cover data (Weidinmyer) and the newer land-cover (UT-CSR), which show notably lower (~50%) biogenic VOC emissions.

In closing, Ron indicated that "first cut," (placeholder) modeling ready emissions have been developed, and some initial CAMx modeling is planned. For example, TCEQ wants to run CAMx test runs to compare the CBIV and CB05 chemical speciation mechanisms. CB05 is a more robust and scientifically valid mechanism than CBIV, and TCEQ is likely to use CB05 in

SIP modeling. However, Ron also indicated that upgrades (e.g., 2005 STARS) and refinements (e.g., emission reconciliation) to the placeholder modeling emissions will be ongoing.

### **Special CCEDS Analysis – Ron Thomas (TCEQ)**

Ron presented the status of a special investigation and analysis of the Consolidated Compliance and Enforcement Data System (CCEDS). (Note: Ron's presentation is available on the SETPMTTC 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)).

Ron gave full credit to Barry Exum for these analyses. The CCEDS database contains information on emission events associated with maintenance, startups and shutdowns. This special investigation and analysis was conducted to determine if more highly resolved emissions (e.g., hourly versus ozone-season-day) could be developed for the various modeling episodes. However, as Ron indicated, the type of data contained in the database is limited and open to some interpretation.

Ron presented some of the results of the investigation and analysis for the June 2005 episode. The emissions events were grouped into four categories:

- Events whose entire reported duration occurred within the episode;
- Events whose entire reported duration is less than the episode duration and occurred partly within the episode;
- Events whose entire reported duration is longer than the episode duration and occurred partly within the episode; and
- Events whose entire reported duration is longer than the episode duration and spans the episode.

Further, Ron indicated that estimating the emission rates applicable to the episode was done in three different ways: uncondensed, partially condensed and fully condensed. The uncondensed approach presumed a uniform emissions rate over the duration of the event and applied that rate for the period of the event occurring during the episode. The partially condensed approach presumed a maximum event duration equal to the episode length (e.g., 336 hours for the June 2005 episode). The fully condensed approach presumed the event duration was equal to the period of time the event occurred within the episode.

Ron presented sets of time series for NO<sub>x</sub>, VOC and HRVOC emission events for the June 2005 episode, depicting the three approaches for estimating hourly emission rates. Also included in these time series were captions indicating the facility name and the size and duration of the emission event as reported in CCEDS.

Ron indicated that as a “worst case” sensitivity, TCEQ planned to modify the point source modeling emissions using the hourly emission rates derived from the fully condensed approach and make a CAMx test run. Ron was asked about comparing the emission events to ambient data, and indicated it would be addressed. Ron was also asked about events that occur during the model spin-up days, and responded that in the “worst case” sensitivity they will be included, but depending upon the results there could be some reconsideration. Ron then demonstrated where the data came from by using one of the identified peaks in the plot. Ron ended the presentation

by quickly showing the plots for the July-August episode, demonstrating that the frequency and magnitude of events are similar for both episodes.

### **Closing Remarks**

Dick indicated that the next meeting is scheduled for 10 am to 3 pm on June 20 at the HGAC offices. At that meeting, TCEQ expects to present updates to both the meteorological and emissions modeling. Dick also asked that if others have additional items for the agenda to please contact him.