

Houston Galveston SIP: Response to Comments

The commission received comments from the following entities: Blue Skies Alliance (Blue Skies), Business Coalition for Clean Air Appeal Group (BCCA-AG), Citizens League for Environmental Action Now (CLEAN), City of Houston, Dow Chemical Company (Dow), Downwinders at Risk (Downwinders), Energy Systems Laboratory (ESL), Environmental Defense (ED), Galveston Houston Association for Smog Prevention (GHASP), Good Company Associates, Inc. (Good Company), Greater Houston Partnership (Partnership), Houston Chapter of the Sierra-Club (Sierra-Houston), Houston Construction Industry Coalition (HCIC), Houston/Galveston Area Council (HGAC), Lone Star Chapter of the Sierra-Club (Sierra-Lone Star), Mothers for Clean Air(MfCA), Lyondell Equistar (Lyondell), People's Action Coalition (PAC), Public Citizen, Reliant Energy Incorporated (Reliant), Texas Campaign for the Environment (TCE), United States Environmental Protection Agency (EPA), and 105 individuals.

General

The BCCA-AG supports the proposed SIP and the associated rules. It further supports the approach of controlling both NO_x and HRVOCs to reduce ozone.

The HGAC encourages the commission to focus on reducing ozone and reaching attainment by 2007. HGAC also stated that it recognizes that there is a diversity of opinions regarding industrial source control measures and supports the commission in expediting scientific investigations that lead to attainment of the ozone standard in a more efficient manner, so long as any changes are supported by the on-going science investigations, maintain transportation conformity for the region, and ensure an approved attainment plan.

The City of Houston urges that this revision be processed in a manner that ensures that the approval status not be changed.

Two individuals commented that Houston's air problem needs to meet CAA standards by 2007.

The Partnership supports a substitution of VOC emission reductions for NO_x emission reductions, if transportation conformity is maintained, an approved attainment plan is ensured, and if supported by an on-going scientific investigation.

The commission appreciates the support and is committed to ensuring the aforesaid conditions.

The commission appreciates the support and plans to utilizes the best available scientific information as part of the decision making process. The commission is committed to ensuring the approval status of the SIP, maintaining transportation conformity, and reaching attainment by 2007.

The TCE stated that the state still does not have a plan that adequately reduces ozone precursors and that the state should not weaken any controls on industrial polluters. The TCE also commented that the commission should have been and must be in the future much more aggressive about air pollution control strategies.

The commission disagrees with this comment. This adoption strengthens the SIP through a combination of HRVOC and NO_x emission reductions. The Texas 2000 Air Quality study and further analysis conducted by the commission indicates that reductions of HRVOCs may reduce ozone concentrations, specifically rapid ozone formation events.

The HGA SIP is an EPA approved attainment demonstration that describes how the area will reach attainment by 2007. The commission considers the SIP and its associated rules an aggressive strategy for reducing emissions.

Sierra-Lone Star commented that the commission does not yet have a final Houston area emissions inventory, no final list of control strategies and measures for the region, no final list of emission reductions for different source categories, no final emissions budget, and lacks scientific data to know what percent of total NO_x and VOC emissions must be reduced to attain the old 0.12 ppm one-hour ozone standard.

ED commented that the commission has not made an effort to evaluate possible attainment strategies. It is poor public policy to propose changes to rules before all the facts are known. ED commented that it is difficult for the public to comment on a proposal when the technical basis is only preliminary and will continue to evolve until adoption. Therefore, ED requests that the commission allow for the submission of supplemental comments on changes made between June 5 and Sept 5.

GHASP commented that it is concerned that this proposed revision does not purport to attend to the admitted shortcomings in the current adopted plan. Instead of addressing the admitted shortcomings of the plan, the commission's proposal seems to focus on resolving political problems- notably the unwillingness of key polluters to achieve the commission's pollution reduction goals, the objections to the 55mph speed limit, and the finding that the funding mechanism for the Texas Emission Reduction Program is unconstitutional. GHASP is further frustrated by the current proposal's emphasis on forthcoming clarifications, research, and other information that it is impossible for the public to comment on at this time. It suggested that prior to adopting any measures that could significantly weaken the plan, the commission must provide the public with ample opportunity to comment, particularly on any significant new scientific or technical justification put forward prior to rule adoption. GHASP would like to evaluate the commission's promised better data and greater confidence and comment.

The proposed SIP and associated rules explained the commission's intent to further refine the photochemical model and expand upon the supporting analysis. For the past six months staff has analyzed various compounds and their impact on ozone formation in the HG area to determine if a NO_x to VOC equivalency was viable. This intent was stated as part of the proposal and now the scientific evidence indicates that this will be an effective ozone reduction strategy. Nothing being considered for adoption by the commission in any way contradicts what was proposed in June 2002 nor does it affect additional segments of the regulated community. Additionally, the model performance process and input improvements were continually updated and available publicly on the agency web site.

The commission is focused on reducing ozone concentrations based upon the best available scientific evidence. Moreover, the commission has committed to submit a formal mid-course review to EPA by May 1, 2004 to include a thorough evaluation of the modeling. This review will allow the commission to incorporate advanced photochemical modeling and to further improve the science behind the SIP inventory data and other tools and assumptions used to develop the SIP.

Enhancements to the photochemical modeling will include state of the science meteorological modeling, updated emissions inventories, improved ozone chemistry and new mobile source data utilizing MOBILE6. The MCR review will also reevaluate control measures, the transportation conformity budget, and the shortfall. Any final revisions to the emissions inventory and the motor vehicle emissions budget for attainment demonstration purposes will be complete at that time. The commission will continue to evaluate new approaches to photochemical modeling, and will strive to make improvements to existing models and input data in a timely manner. Moreover, the MCR will assess to-be-considered control measures listed in Chapter 7 of the SIP. It will also include an ongoing assessment of new technologies and innovative ideas. This plan in its totality, including the control measures identified in Chapter 6 of the SIP plus the process described as part of the MCR will achieve attainment. The commission is committed to working with other entities concerned with air quality and transportation issues in the HG area as part of the MCR process.

The current SIP adoption includes additional analysis to provide directional guidance by indicating multiple pathways based upon across the board cuts in the percentage of HRVOC and NOx emission reductions which may be explored to reach 124 ppb. Based upon this analysis it is evident that a strategy based solely on NOx may not be necessary to attain the ozone standard. In consultation with EPA it was agreed that prior to revising the NOx rules the Commission would 1) model all currently adopted rules, 2) determine the ozone differential between 80% and 90% NOx, 3) determine the VOC levels necessary to equal that differential, 4) calculate the relative design value to determine how close to 124ppb this strategy is, 5) if higher than 124ppb conduct across the board VOC and NOx reduction sensitivities to determine if attainment can be reached with a mix of VOC/NOx strategies. This SIP revision or the TSD includes all of these components.

Furthermore, the commission disagrees with the commenter because the Commission, in coordination with the Interim Science Coordinating Committee (ISCC), has provided a public forum for which information regarding modeling of the HGA SIP has been shared. Dr. Ramon Alvarez, Environmental Defense, and other members of the environmental community have participated in these meetings. As stated in Chapter 7, the commission commits to identifying and adopting control strategies to fill the remaining gap in emission reductions necessary and to demonstrating attainment in the HGA by 2007.

The commission agrees that as many of the updates outlined in the original SIP proposal should be incorporated into modeling. The 2000 episode has been re-run with many changes as they are implemented, and the results of many of these model runs are being archived for future reference. Because of resource constraints, it is not feasible to conduct and document a detailed analysis of every model run, but the Commission modeling staff intends to provide analysis of major modifications. The Commission continually seeks peer review of its modeling through the Technical Review Committee and through frequent meetings with the ISCC and with EPA Region VI. The Commission will also seek outside peer review for the more significant modifications to the modeling process (such as chlorine chemistry). The Commission web site www.tnrcc.state.tx.us/air/aqp/airquality_contracts.html is updated frequently with new information.

The commission intends to reevaluate the need for a speed limit reduction strategy as part of the MCR. However, the current SIP retains the 55mph in 2005.

The commission concurs that the majority of the funding mechanism for the Texas Emission

Reduction Plan was found to be unconstitutional, however, the issue is beyond the scope of this SIP revision.

Sierra-Houston commented that the commission is 8 years late in submitting a sufficient SIP to EPA.

The commission has been working to adopt measures to meet the health-based ozone standards. As the science of ozone formation continues to mature, and the commission has constantly modified the SIP over the past 10 years since the most recent amendments to the Federal Clean Air Act (FCAAA) were signed into law. The FCAAA originally established a 1996 deadline for submitting HGA's ozone attainment demonstration. This deadline was changed in 1995 when the EPA issued guidance that allowed states to postpone completion of their attainment demonstrations until an assessment of the role of transported ozone and precursors could be completed for the eastern half of the nation, including the eastern portion of Texas. Texas participated in this study, which found that Texas does not significantly contribute to ozone exceedances in the Northeastern United States. Since then, in accordance with EPA guidance, Texas committed to adopt the majority of the necessary rules for the HGA attainment demonstration by December 31, 2000. It is important to note that none of the changes in the submission deadlines have resulted in changing the attainment deadline in the FCAAA, which requires HGA to attain the one-hour ozone standard by November 15, 2007. The HGA SIP has been approved by EPA and demonstrates attainment of the 1-hour ozone standard. The adopted plan includes a full analysis with all adopted control measures modeled. If the model predicts attainment, no further analysis is necessary. If not, the Commission will conduct further analysis by varying VOC and NO_x reductions until the model indicates that the future design value at each monitor is below 125ppb. A future design value is calculated by multiplying a monitor's current design value by the model predicted percent change in ozone.

GHASP requests that the public comments sent to Chairman Huston prior to the June 5, 2002 commission meeting, and those comments made at the commission meeting, be included in the administrative record for formal response by the commission.

Many of the comments received were in a template format. The concerns expressed during the comment period mirror the concerns expressed in comments received prior to and following the comment period. These issues are being addressed in the formal response to comments.

Two individuals commented that the state should implement necessary air quality controls to improve air quality.

The commission agrees and continues to assess and adopt control strategies designed to improve air quality.

Six individuals commented that the current plan is inadequate. Five individuals commented that the Commission should do a full analysis of the SIP.

One individual opposes the entire proposal.

One individual supports the proposed revision.

The commission disagrees with the comment that the plan is inadequate. The HGA SIP has been approved by EPA and demonstrates attainment of the 1-hour ozone standard. The adopted plan includes a full analysis with all adopted control measures modeled. If the model predicts attainment, no further analysis is necessary. If not, the Commission will conduct further analysis by varying VOC and NO_x reductions until the model indicates that the future design value at each monitor is below 125ppb. A future design value is calculated by multiplying a monitor's current design value by the model predicted percent change in ozone.

One individual commented that this plan is going to be very expensive from an operating standpoint for industry.

It continues to be the commission's goal to improve health benefits attributed to clean air for the citizens of the Houston area. However, the commission recognizes that it must balance economic and health related considerations.

VOC for NO_x Substitution

EPA is concerned that the current efforts have been focused on a NO_x to VOC exchange. The agency thinks that the SIP needs to address a larger question of what mix of NO_x and VOC controls will be necessary to reach attainment.

The City of Houston commented that the commission should not finalize proposed regulations until there is clear and conclusive scientific data that such a trade off will not prevent attainment in 2007. The City of Houston further urges the commission to assure that the necessary technical studies are assessed as promptly as possible so potential revisions can be made as quickly as possible, but by no later than the 2004 MCR.

City of Houston council member Sekula-Gibbs commented that she supports the proposed revisions if further scientific evaluation concludes that this is a more effective means of controlling ozone.

Sierra-Lone Star, ED, and GHASP further commented that from the information presented regarding HRVOCs it is not possible to estimate even an approximate amount of ozone reduction.

MfCA commented that controlling VOC emissions should not be a substitute for relaxing NO_x regulations. Trading established NO_x controls with unknown VOC controls is an unfair exchange and one that will not prove itself for many years. The commission must keep in mind that the goal of the SIP is attainment of the ozone standard and this is not achieved by simply switching one pollutant for another. The commission has yet to come up with specific combined VOC-NO_x reductions that will achieve attainment and this must be done before any such tradeoff is approved.

ED commented that the commission should not substitute an existing measure with a new measure when the benefits of the replacement measure are based on theoretical projections and questionable empirical evidence. The proposed substitution is based upon highly inconclusive analysis. The SIP revision proposes to replace a measurable and reliable strategy with a strategy that is impossible to quantify and unreliable.

MfCA commented that regulatory flexibility must be limited to proven reductions that result in lower ozone concentrations. A VOC trade should not be permitted until all the data is available and a complete modeling scenario is complete.

ED suggests that the commission must analyze revisions to specific control measures in a manner that evaluates the effects those revisions have on the total SIP and its ability to achieve attainment. The current SIP proposal may “maintain the integrity of the SIP” but fails to analyze possible ripple affects. When analyzing SIP revisions, the Commission must not only evaluate the merits of an alternative strategy, but the possible repercussions of failure. The SIP also fails to analyze whether attainment could be achieved without the repealed NOx rules in the event that VOC controls fail to achieve anticipated ozone reductions. Once the NOx rules are repealed, restoring 90% may be economically or politically infeasible because business will begin incurring costs for design, engineering, and procurement of equipment. If the 90% NOx rules are reinstated via a SIP revision or a FIP, the costs will be higher than the original rule due to re-engineering and potentially replacing previously procured equipment. Before the Commission repeals any portion of the 90% point source NOx reductions, it must address the possibility that the full reductions may ultimately be required to reach attainment. The commission must indicate what specific strategies it could rely on to replace the NOx reductions from the point sources to be repealed in this SIP if those reductions are needed in the future.

ED and MfCA commented that the commission has not reasonably demonstrated that a NOx to VOC trade maintains that integrity of the SIP. Considering errors in the VOC emission inventory, it would be poor public policy to adopt the VOC to NOx tradeoff under heavy pressure from industry.

Sierra-Houston commented that they do not favor the changes to 30 TAC 101.353 in 101.353(a), that the commission proposes. These changes cut NOx emission reductions from 90% to 80% and allow instead for VOC reductions. Sierra-Houston stated that the commission has not provided information which shows that these intra-pollutants trades will result in the same ambient ozone concentration reduction as a 90% reduction in NOx emissions. Sierra-Houston commented that the Commission has not shown that such a control strategy will, expeditiously as practicable, but no later than November 15, 2007, result in attainment if the 0.12ppm one-hour standard in the HGA. Sierra-Houston also stated that the Commission has estimated that intra-pollutant trading of VOCs for NOx, by four separate methods, requires anywhere from a 27% to 90% reduction of some VOCs.

EPA commented that they are concerned that adopted control measures are being relaxed while it appears that there is still a shortfall in needed NOx reductions and urged the commission to conduct further analysis and determine whether attainment can actually be reached before finalizing a relaxation of NOx the point source rules.

The commission has conducted additional sensitivity analysis beyond the current industrial strategy to determine if there are other means of achieving attainment besides a NOx only strategy. The commission has always been fully committed to a full analysis at the mid-course review. As a part of the analysis being conducted to inform the mid-course review process, there has been modeling analysis of retaining the 90% strategy with the HRVOC rules as described in the TSD. The commission disagrees that it must identify specific controls above and beyond what is already identified in the existing gap list. This SIP revision will move to strengthen the SIP with a combination of aggressive VOC and NOx emission controls. The commission asserts that equivalency has been determined. In consultation with EPA to clarify the intent of their comment regarding further analysis, it was agreed that prior to revising the NOx rules the commission would 1) model all currently adopted rules, 2) determine the ozone differential between 80% and 90% NOx, 3) determine the VOC levels necessary to equal that differential, 4) calculate the relative design value to determine how close to 124ppb this strategy is, 5) if higher than 124ppb conduct across the board VOC and NOx reduction sensitivities to determine if attainment can be reached

with a mix of VOC/NOx strategies. Therefore, this SIP revision includes a full analysis of the SIP where all adopted control measures are modeled.

The commission continues to review its scientific evaluations for inclusion in the MCR next year.

The changes to the rules in Chapter 101, which implement the mass cap and trading program for NOx emission reductions in HGA are addressed in concurrent rulemaking.

TCE commented that the proposed rules must control HRVOCs, but the state's control plans are in their initial stages and no one really knows how effective those rules will be at controlling ozone.

As stated in the proposal, the commission has incorporated the best scientific information available and is now using a much more recent episode from 2000 for the purposes of supporting this revision. The commission has also revised its approach from establishing a per capita emission based performance standard for each flare, cooling tower and process vent to establishing a site cap up for specific facilities. By using an airshed cap to establish the individual site caps, the commission used a conservative assumption that every facility would be emitting at its cap. Since, this clearly will not be the case, the commission asserts that rule effectiveness for the overall strategy has been addressed. Much analysis needs to be conducted between now and the mid-course review, particularly with regard to the contribution of other VOCs to ozone formation in HGA nonattainment area, in order to develop the most cost effective strategy to attain the standard. This effort will consist of continued evaluation of data already collected, the collection of additional ambient data through an expanded auto gas chromatograph network, and additional inventory analysis as well as additional modeling analysis. As a full analysis of what is ultimately necessary to fully demonstrate attainment is conducted at the mid-course review, the commission will be evaluating a number of issues that may change the HRVOC rules, such as: which, if any, additional chemicals need to be addressed, and the sources of these chemicals; what is the appropriate geographic scope for the regulations; what are appropriate averaging times for the chemicals of concern; and what, if any, changes need to be made to the allocation process. By establishing a compliance date approximately 18 months after the conclusion of the mid-course review process, the commission believes it will have ample time to make necessary adjustments and still allow industry adequate time to fully comply.

GHASP commented that by considering whether a major adopted control measure can be replaced, the commission has abandoned its commitment to "achieve...emission reductions as expeditiously as possible". The commission would clearly violate the current plan's integrity by removing a major, technically feasible control measure.

The commission has always maintained the position to revise control strategies if new and improved information indicates a more cost effective way of achieving the same goal. The Federal Clean Air Act fully supports the ability of states to choose the appropriate mix of control strategies, which has been upheld by many courts. The commission disagrees that it has abandoned any of its commitments and believes that the abundance of scientific information fully supports this revision to the SIP.

CLEAN and fifty eight individuals commented that Houston's pollution clean up efforts should not be weakened by relaxing industrial point source NOx reductions from 90% to 80 %.

The commission disagrees with the commenters. This SIP revision will strengthen the SIP by regulating emissions of HRVOCs as well as NOx. HRVOCs emissions contribute to the formation of ozone and are associated with high ozone episodes.

Eighteen individuals commented that NOx and VOC emissions from industrial sources should be controlled.

MfCA commented that solving Houston's air pollution problem requires multi-pollutant measures not only reducing NOx emissions.

The commission agrees with the commenters. In addition to the VOC and NOx rules currently in the SIP, the commission believes that this revision strengthens its multi-pollutant strategy for addressing ozone.

VOC

Sierra-Lone Star, EPA, ED, Houston, GHASP, the Partnership, City of Houston Council Member Sekula-Gibbs, and five individuals support the enhancements to improve VOC monitoring.

City of Houston, Sierra-Lone Star, GHASP, ED, and five individuals support new limitations on VOC emissions. They believe that these proposals, if adopted with their changes and subsequent enforcement, should directly reduce ozone in the region.

The Partnership supports improved reporting requirements to reduce uncertainty in emissions inventory that appear to be understated and supports efforts to significantly reduce HRVOC emissions through strong and feasible control measures.

The commission has withdrawn the proposed general VOC monitoring rules in Subchapter B, Divisions 7 and 8. In lieu of requiring this monitoring of all VOCs from individual flares, cooling towers and process vents to obtain emissions data for use in SIP planning, the commission is relying on data from not only the commission's monitoring network, but also data from additional ambient monitors that will be strategically located in HGA. This monitoring is expected to not only be a more efficient use of resources for this data gathering, but will also provide information more quickly. As described more fully in the narrative to the SIP revision and Technical Support Document (TSD) that accompany these rule amendments, the commission is committed to developing the best science possible to understand the causes of high ozone in the HGA. For the mid-course review, the commission plans to perform an in-depth analysis of the contributions of the less-reactive compounds and to perform top-down analyses similar to those used for the HRVOCs. If warranted, appropriate adjustment factors will be developed for less-reactive VOCs. As explained more fully in the SIP and TSD, the current modeling analysis indicates that emission reductions in the HRVOC alone can compensate for the change of industrial NO_x controls to 80% reductions, but additional controls on VOC sources are likely to be necessary to reach attainment. The commission will continue to study VOC data available now and in upcoming years to determine whether additional compounds should be added. To accomplish this task, the commission needs the support of and expects owners and operators of facilities in HGA which emit VOCs to participate in the ambient monitoring efforts which are scheduled to begin no later than June 1, 2003. If the ambient monitoring network is not fully and timely developed and operated such that the commission has received sufficient data for mid-course review, the commission may reconsider site-specific monitoring controls of VOC sources.

EPA commented that it is unclear where the 100tpd cap came from and asks for an explanation of how this number was developed. It is also unclear how the future case controlled point source has been calculated on new VOC controls. The plan needs to include documentation of what the level of VOC emissions are which have been projected for each of the categories and the calculations, which demonstrate that the new control strategies will achieve the projected level. HRVOC rule effectiveness and the level of resources needed for enforcement should also be considered.

The 100 tpd cap was determined based upon some initial analysis utilizing urban airshed modeling of the 1993 episode and NCARs box model. As stated in the proposal, the commission has incorporated the best scientific information available and is now using a much more recent episode from 2000 for the purposes of supporting this revision. The commission has also revised its approach from establishing a per capita emission based performance standard for each flare, cooling tower, and process vent to establishing a site cap for specific facilities. This was accomplished by the following methodology:

- 1) The 2000 reported inventory was submitted to the modeling staff.**
- 2) The commission's modeling staff applied a speciation profile, based upon SIC classification, to the reported inventory for those accounts which did not provide speciated data in their report.**
- 3) Based upon ambient measurements an adjustment for additional reactivity was applied across the modeling domain to the emissions inventory of all affected accounts. This is discussed in the Technical Support Document filed with the SIP revision concurrently adopted with this rulemaking.**
- 4) The accounts were sorted and a ten tpy (2.28 pounds per hour (lb/hr)) significance threshold applied to the total adjusted inventory.**
- 5) A further adjustment to account solely for flares, cooling towers, and vents was applied to establish the emissions from which a control factor could be applied. This adjustment was based on the total amount of fugitives as a percentage of the 2000 reported inventory, applied equally across all accounts in Harris County and then in the seven remaining counties.**
- 6) An analysis was conducted based upon relative contribution to the inventory, to determine as equitably as practical, site caps where by the overall controlled inventory would equal what was initially modeled with an across the board 64% reduction strategy. The following are the results of that analysis:**
 - a) Sources emitting >500 lb/hr were assigned 70% control**
 - b) Sources emitting >125 lb/hr and <500 lb/hr were assigned 68% control**
 - c) Sources emitting >ten lb/hr and <125 lb/hr were assigned 60% control**
 - d) Sources emitting <ten lb/hr were assigned 50% control**

As shown on Table 6.2-1 in the HGA SIP revision adopted concurrently with this rulemaking, the lbs/hr for the adjusted total inventories for cooling towers, flare and vent emissions ranges from 1.846 to 891.320 lbs/hr in Harris County, and 2.05 to 632.83 lbs/hr in the seven surrounding counties. The distribution of these inventory amounts naturally fall into four ranges of amounts. The largest inventories are those which are greater than 500 lbs/hour. Due to the magnitude of

these inventories as compared to those in the next category, these accounts were allocated approximately 10% greater amount of control level over the necessary 64%, resulting in a 70% control level. The next group of sources, are those represented by the distribution for the model adjusted inventory of between 125 and 500 lbs/hr. These sources are also a relatively large portion of the total and were allocated approximately 6% greater amount of control level over the necessary 64%, resulting in a 68% control level. Accounts which have adjusted totals of between 10 and 125 lbs/hr were allocated approximately 6% less than the necessary 64%, since the magnitude of those emissions are not as great as those in the first two categories. Finally, the smallest accounts, those with 10 lbs/hr or less were allocated approximately 22%, or a 50% control level.

By using an airshed cap to establish the individual site caps, the commission used a conservative assumption that every facility would be emitting at its cap. Since this clearly will not be the case, the commission asserts that rule effectiveness for the overall strategy has been addressed.

The City of Houston urges the commission to finalize its efforts to assess impacts of non HRVOCs on ozone formation in HGA.

Sierra-Lone Star and MfCA also support requiring the same requirements proposed for HRVOC in 30 Tex. Admin Code Chapter 115 for all volatile organic compounds that play a role in ozone chemistry and not applying a weaker regulatory approach to general volatile organic compounds over the highly reactive volatile organic compounds.

Sierra-Lone Star and MfCA suggested that additional reactive chemicals be included in the controls due to an under-reporting of HRVOCs and resulting flawed emissions inventory. It also commented that Texas 2000 AQS aerial chemical surveys revealed that it's highly possible that other reactive chemicals play a major role in ozone chemistry as well including isoprene, butenes, formaldehyde, acetaldehyde, toluene, pentanes, trimethylbenzenes, xylene isomers, ethyltoluenes, and more.

As stated at in the proposal, the purpose of this revision was to determine if a certain level of reduction in HRVOCs could attain the same air quality benefit with an 80% NO_x reduction strategy as was demonstrated with the approved 90% NO_x reduction strategy. The commission believes it has met that determination with this revised strategy. Much analysis needs to be conducted between now and the mid-course review, particularly with regard to the contribution of other VOCs to ozone formation in HGA nonattainment area, in order to develop the most cost effective strategy to attain the standard. This effort will consist of continued evaluation of data already collected, the collection of additional ambient data through an expanded auto gas chromatograph network, and additional inventory analysis as well as additional modeling analysis. As a full analysis of what is ultimately necessary to fully demonstrate attainment is conducted at the mid-course review, the commission will be evaluating a number of issues that may change the HRVOC rules, such as: which, if any, additional chemicals need to be addressed, and the sources of these chemicals; what is the appropriate geographic scope for the regulations; what are appropriate averaging times for the chemicals of concern; and what, if any, changes need to be made to the allocation process. By establishing a compliance date approximately 18 months after the conclusion of the mid-course review process, the commission believes it will have ample time to make necessary adjustments and still allow industry adequate time to fully comply.

BCCA-AG supports the goal to reduce HRVOC emissions, however it believes that the current rules are not the most effective and technically feasible way to reduce VOCs. Therefore, it proposes a cap and allocation system for HRVOC.

As stated in the proposal, the commission has incorporated the best scientific information available and is now using a much more recent episode from 2000 for the purposes of supporting this revision. The commission has also revised its approach from establishing a per capita emission based performance standard for each flare, cooling tower, and process vent to establishing a site cap for specific facilities. This was accomplished by the following methodology:

- 1) The 2000 reported inventory was submitted to the modeling staff.**
- 2) The commission's modeling staff applied a speciation profile, based upon SIC classification, to the reported inventory for those accounts which did not provide speciated data in their report.**
- 3) Based upon ambient measurements an adjustment for additional reactivity was applied across the modeling domain to the emissions inventory of all affected accounts. This is discussed in the Technical Support Document filed with the SIP revision concurrently adopted with this rulemaking.**
- 4) The accounts were sorted and a ten tpy (2.28 pounds per hour (lb/hr)) significance threshold applied to the total adjusted inventory.**
- 5) A further adjustment to account solely for flares, cooling towers, and vents was applied to establish the emissions from which a control factor could be applied. This adjustment was based on the total amount of fugitives as a percentage of the 2000 reported inventory, applied equally across all accounts in Harris County and then in the seven remaining counties.**
- 6) An analysis was conducted based upon relative contribution to the inventory, to determine as equitably as practical, site caps where by the overall controlled inventory would equal what was initially modeled with an across the board 64% reduction strategy. The following are the results of that analysis:**
 - a) Sources emitting >500 lb/hr were assigned 70% control**
 - b) Sources emitting >125 lb/hr and <500 lb/hr were assigned 68% control**
 - c) Sources emitting >ten lb/hr and <125 lb/hr were assigned 60% control**
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As shown on Table 6.2-1 in the HGA SIP revision adopted concurrently with this rulemaking, the lbs/hr for the adjusted total inventories for cooling towers, flare and vent emissions ranges from 1.846 to 891.320 lbs/hr in Harris County, and 2.05 to 632.83 lbs/hr in the seven surrounding counties. The distribution of these inventory amounts naturally fall into four ranges of amounts. The largest inventories are those which are greater than 500 lbs/hour. Due to the magnitude of these inventories as compared to those in the next category, these accounts were allocated approximately 10% greater amount of control level over the necessary 64%, resulting in a 70% control level. The next group of sources, are those represented by the distribution for the model adjusted inventory of between 125 and 500 lbs/hr. These sources are also a relatively large portion of the total and were allocated approximately 6% greater amount of control level over the

necessary 64%, resulting in a 68% control level. Accounts which have adjusted totals of between 10 and 125 lbs/hr were allocated approximately 6% less than the necessary 64%, since the magnitude of those emissions are not as great as those in the first two categories. Finally, the smallest accounts, those with 10 lbs/hr or less were allocated approximately 22%, or a 50% control level.

By using an airshed cap to establish the individual site caps, the commission used a conservative assumption that every facility would be emitting at its cap. Since this clearly will not be the case, the commission asserts that rule effectiveness for the overall strategy has been addressed.

Sierra-Houston commented that the SIP states that "other scientists also may have indicated that large amounts of less reactive VOC emissions have contributed to ozone production in the HGA". If the Commission does not know what other scientists said, then this does not belong in the SIP. Furthermore, it commented that the Commission is wrong when it states that, "the state has regulated all major sources of VOCs in the HGA to at least a RACT level." The commission has not regulated cooling towers or upset events to RACT.

The above mentioned sentence is no longer in the SIP.

In 42 USC §7511a(b)(2), the FCAA requires implementation of RACT for ozone nonattainment areas classified as moderate and above for: (A) each category of VOC sources covered by a CTG document issued between November 15, 1990 and the date of attainment; (B) all VOC sources covered by any CTG document issued prior to November 15, 1990; and (C) all other major stationary sources of VOC.

CTGs are EPA guidance documents which are intended to provide state and local air pollution control agencies with an information base for proceeding with their own analysis of RACT to meet statutory requirements. These documents review existing information and data concerning the technical capability and cost of various control techniques to reduce emissions. Each CTG document contains a recommended "presumptive norm" for RACT for a particular source category, based on EPA's evaluation of capabilities and problems general to the source category. However, the presumptive norm is only a recommendation, and state and local air pollution control agencies may choose to develop their own RACT requirements on a case-by-case basis, considering the economic and technical circumstances of the individual source category within an area.

It should be noted that §101.6 and §101.7 were recently revised and relocated to §101.201 and §101.211, respectively, and the terms "upset" and "maintenance, startup, or shutdown" were replaced by the terms "emissions event" and "scheduled maintenance, startup, or shutdown activity," respectively. Emissions events (formerly known as upsets) are not major stationary sources of VOC. Rather, emissions events are occurrences that may take place at both major and minor sources of VOCs. Therefore, RACT does not apply to emissions events. Regarding cooling towers, the commission is implementing rules which go beyond RACT. In addition, cooling towers could be considered subject to the general vent gas rule in Chapter 115. Therefore, the commission disagrees with Sierra-Houston.

Sierra-Houston also commented that the commission is proposing VOC rules before the need for the rules are verified in the SIP. This is an arbitrary and capricious decision since the Commission is predetermining the outcome of its assessment. It further commented that the commission states that,

“Industry is expected to provide a better point source chlorine emissions inventory than exists currently.” The commission does not have assurances that the inventory will be accurate.

The commission disagrees with the comment. The data generated in the TxAQS 2000 study gave a directional indication that HRVOCs contribute to ozone formation and supported the June proposal. As a result of further analysis, the commission has adopted rules which will significantly reduce ozone concentrations in the HGA.

The commission contracted with a peer reviewer who provided written comments asking whether the commission had evaluated the impact of adding chlorine reaction mechanisms into the CB4 chemistry. Nine chlorine papers from studies already contracted by the Commission are posted on its web site www.tnrcc.state.tx.us/air/aqp/airquality_contracts.html#other02. In total, the present work suggests that the incorporation of chlorine chemistry into the photochemical modeling is likely to modestly improve model performance by allowing the model to replicate very rapid ozone formation near chlorine sources. However, chlorine chemistry is unlikely to have a major effect on the modeled peak one-hour ozone concentration, which is the regulatory standard. If the commission incorporates chlorine chemistry in the mid-course review modeling, both in hope of modestly improving model performance, and to further evaluate the impact of improving chlorine emissions inventories, the chemistry must be accepted by peer reviewers as being a valid representation based on smog chamber results.

Sierra-Houston and two individuals commented that the commission should determine who falsely provided data and what legal recourse there is regarding emissions inventory. Sierra-Houston further commented that this is a clear circumvention violation under 30 TAC section 101.3.

The commission works closely with companies to assure the best possible data is submitted. When inaccuracies are suspected, staff contacts the companies to discuss the issue. If appropriate, corrections are submitted by the company, and in some cases, enforcement action may be initiated.

One individual commented that there is no basis on the technical report to include trimethylbenzene, xylene, and ethyltoluenes and that these materials are not reactive VOCs. Adding these to the list of reactive VOC has a significant technical and economic impact. They are major components of gasoline and diesel fuels.

The commission has withdrawn the proposed general VOC monitoring rules in Subchapter B, Divisions 7 and 8. In lieu of requiring this monitoring of all VOCs from individual flares, cooling towers and process vents to obtain emissions data for use in SIP planning, the commission is relying on data from not only the commission’s monitoring network, but also data from additional ambient monitors that will be strategically located in HGA. This monitoring is expected to not only be a more efficient use of resources for this data gathering, but will also provide information more quickly. As described more fully in the narrative to the SIP revision and Technical Support Document (TSD) that accompany these rule amendments, the commission is committed to developing the best science possible to understand the causes of high ozone in the HGA. For the mid-course review, the commission plans to perform an in-depth analysis of the contributions of the less-reactive compounds and to perform top-down analyses similar to those used for the HRVOCs. If warranted, appropriate adjustment factors will be developed for less-reactive VOCs. As explained more fully in the SIP and TSD, the current modeling analysis indicates that emission reductions in the HRVOC alone can compensate for the change of industrial NO_x controls to 80%

reductions, but additional controls on VOC sources are likely to be necessary to reach attainment. The commission will continue to study VOC data available now and in upcoming years to determine whether additional compounds should be added. To accomplish this task, the commission needs the support of and expects owners and operators of facilities in HGA which emit VOCs to participate in the ambient monitoring efforts which are scheduled to begin no later than June 1, 2003. If the ambient monitoring network is not fully and timely developed and operated such that the commission has received sufficient data for mid-course review, the commission may reconsider site-specific monitoring controls of VOC sources.

As stated at in the proposal, the purpose of this revision was to determine if a certain level of reduction in HRVOCs could attain the same air quality benefit with an 80% NO_x reduction strategy as was demonstrated with the approved 90% NO_x reduction strategy. The commission believes it has met that determination with this revised strategy. Much analysis needs to be conducted between now and the mid-course review, particularly with regard to the contribution of other VOCs to ozone formation in HGA nonattainment area, in order to develop the most cost effective strategy to attain the standard. This effort will consist of continued evaluation of data already collected, the collection of additional ambient data through an expanded auto gas chromatograph network, and additional inventory analysis as well as additional modeling analysis. As a full analysis of what is ultimately necessary to fully demonstrate attainment is conducted at the mid-course review, the commission will be evaluating a number of issues that may change the HRVOC rules, such as: which, if any, additional chemicals need to be addressed, and the sources of these chemicals; what is the appropriate geographic scope for the regulations; what are appropriate averaging times for the chemicals of concern; and what, if any, changes need to be made to the allocation process. By establishing a compliance date approximately 18 months after the conclusion of the mid-course review process, the commission believes it will have ample time to make necessary adjustments and still allow industry adequate time to fully comply.

The commission disagrees with the commenter. The TCEQ will continue to analyze all available data, including auto-GC and canister samples collected in 2002 and 2003 in order to identify the VOCs that play important roles in the ozone formation process, and may propose additional rules to control those compounds at the mid-course review or in future SIPs.

The TCEQ has determined which highly reactive VOCs to regulate based upon the full record of automated gas chromatography data at all available sites, on the aircraft VOC data collected during the TexAQS 2000 study and in 2001, and upon photochemical modeling results. These analyses have shown that some highly reactive VOCs, including ethylene, propylene, 1,3-butadiene, and butenes, frequently dominate total OH and total MIR concentration-weighted reactivity in auto-gc and aircraft canister samples collected in the Houston area. In addition, other highly reactive VOCs (e.g., pentenes, xylenes, trimethyl- benzenes, hexenes) are occasionally important contributors to total OH and total MIR reactivity. Finally, some VOCs with low reactivity (e.g., butanes, toluene) are occasionally important contributors to both OH and MIR concentration-weighted reactivity. The Technical Support document presents the results of these analyses.

Initial analysis from TexAQS researchers indicate that xylenes and trimethylbenzenes are among the reactive VOCs important to ozone formation in the Houston/Galveston area. The commission notes that gasoline sources are a major source of ambient xylenes and trimethylbenzenes, but it is not clear whether these gasoline sources are point, area or mobile sources, or a combination of all three. Another possibility is that the manufacture of gasoline is the primary source of xylenes and

trimethylbenzenes, not emissions from the finished gasoline product. The commission will complete additional analysis of the reactivity of xylenes and trimethylbenzenes and the sources of these compounds in the inventory. At this time xylenes and trimethylbenzenes will not be included in the SIP rulemaking for point sources.

Ethyltoluenes are highly reactive VOCs, but analyses thus far have not observed ethyltoluenes present in high enough concentrations to cause high OH or MIR concentration-weighted reactivity. Future analyses will continue to study ethyltoluenes to ensure that they are not present in significant concentrations in Houston's ambient air.

NO_x

Blue Skies and Downwinders commented that there is a slim margin for reaching attainment in the DFW area with the current SIP and DFW attainment is dependant on Houston's success therefore no additional sources of pollution are acceptable, particularly relaxing NO_x point source rules. Blues Skies also commented that the issue is also exacerbated by industrial sources in Ellis County and by the lack of TERP funding.

Downwinders commented that ozone alerts in the DFW area have been attributed to Houston area emissions.

The commission agrees that under certain meteorological conditions, ozone and ozone precursors are transported from the HGA to the DFW area. The adopted HRVOC rules coupled with the NO_x rules will reduce ozone concentrations in the HGA and therefore lower transported ozone and ozone precursors and reduce background ozone levels in the DFW area. In April of 2000, the commission finalized rules reducing emissions from power plants, other industrial sources, and fuel quality which have been modeled to show a measurable and real air quality improvement for East and Central Texas. In addition, the current SIP contains some measures that apply statewide, and will provide air quality benefits for the entire state.

EPA commented that the commission should document by source category the NO_x emission rates used in the modeling and show how these emission rates relate to the NO_x rules. This information will be used to confirm that the rules will achieve emission rates included in the Technical Support Document (TSD).

The TSD summarizes, in tabular format, the emissions modeled for the 1993 episode and projected to 2007, by the emissions source categories: on-road mobile, area and nonroad mobile, point (both unadjusted and olefin-adjusted), and biogenic sources. These tables are intended to be an overall summary of the modeled NO_x and VOC emissions, and a demonstration of the percentages of emissions attributable to each source category.

The details about the development of the 1993 episode, and 2007 projections from the 1993 episode, are included in previous SIPs, e.g., Chapter 3 and Appendices of the December 2000 submittal. As stated in Chapter 4 of the TSD, the details of the emissions development for the 2000 episode, and the projections of this episode to 2007, are provided in Attachment 6 to the TSD.

The commenter does not specifically address an issue about Source Classification Codes (SCCs) or Area Source Categories (ASCs), but if the commenter was making a vague reference to these , then the Commission has prepared the following response. The modeling attachments address some specifically-identified category types, such as locomotive engine controls in the area/nonroad mobile

sections of Attachment 6. For point sources, it is not always reasonable to specifically identify all SCCs, such as those included in the point source NO_x Cap of HGA. The NO_x rules are not identified by SCC, so the modeling of NO_x controls is not done by SCC. The NO_x Cap in HGA affects almost all combustion sources (certainly all large sources of NO_x), yet the NO_x Cap and Trading rules are based on collective categories, rather than specific SCCs. Additionally, trading occurs among all of the combustion SCCs, so it is impractical to try to model limitations based on SCCs; hence, modelers applied separate controls to two broad categories: Electric Generating Facilities (EGFs) and non-EGFs. Another argument against SCC usage is that it has been the commission experience that SCC usage is not always consistent among the regulated community. Therefore, emissions have not been tabulated by SCC or ASC.

MfCA, GHASP, and TCE oppose the proposed changes to Chapter 117 to allow 67 tpd more NO_x emissions in the air.

The commission is committed to demonstrating attainment of the 1-hour ozone standard with the most cost effective approach and controlling HRVOC and NO_x emissions is the most efficient means to reduce ozone formation in the HGA. As stated at the outset of this proposal, the purpose of this revision was to determine if a certain level of reduction in HRVOCs could attain the same air quality benefit with an 80% NO_x reduction strategy as was demonstrated with the approved 90% NO_x reduction strategy. The commission believes it has met that determination with this revised strategy. There is still a lot of analysis that needs to be conducted between now and the MCR, particularly with regards to the contribution of other VOCs to ozone formation in HGA nonattainment area, in order to develop the most cost effective strategy to attain the standard. This effort will consist of continued evaluation of data already collected, the collection of additional ambient data through an expanded auto GC network, additional inventory analysis as well as additional modeling analysis. As a full analysis of what is ultimately necessary to fully demonstrate attainment is conducted at the mid-course review, the commission will be evaluating a number of issues that may change the highly reactive VOC rules, such as: which, if any, additional chemicals need to be addressed; what is the appropriate geographic scope for the regulations; what are appropriate averaging times for the chemicals of concern; and what, if any, changes need to be made to the allocation process. By establishing a compliance date approximately 18 months after the conclusion of the mid-course review process, the commission believes it will have ample time to make necessary adjustments and still allow industry adequate time to fully comply.

The current SIP adoption includes additional analysis to provide directional guidance by indicating multiple pathways based upon across the board cuts in the percentage of HRVOC and NO_x emission reductions which may be explored to reach 124 ppb. Based upon this analysis it is evident that a strategy based solely on NO_x may not be necessary to attain the ozone standard. In consultation with EPA it was agreed that prior to revising the NO_x rules the Commission would 1) model all currently adopted rules, 2) determine the ozone differential between 80% and 90% NO_x, 3) determine the VOC levels necessary to equal that differential, 4) calculate the relative design value to determine how close to 124ppb this strategy is, 5) if higher than 124ppb conduct across the board VOC and NO_x reduction sensitivities to determine if attainment can be reached with a mix of VOC/NO_x strategies. This SIP revision or the TSD includes all of these components.

EPA also commented that its approval of the December 2000 and September 2001 SIP revision was based upon the premise that all practicable NO_x reduction strategies have been adopted and now it appears that NO_x reductions are being relaxed while there is a NO_x shortfall.

ED stated that EPA's reliance on enforceable commitments to approve the SIP would no longer be valid if the adopted NOx controls were rolled back. Therefore, EPA must disapprove the SIP. Circumstances warranted the use of enforceable commitments in the HGA, however, this would no longer be valid if the Commission removed a portion of the 90% point source NOx strategy. If the 90% NOx reductions are relaxed the following would happen:

- NOx controls would no longer be as tight as or tighter than any other case (part of EPA's argument to allow Enforceable Commitments)
- EPA will find that additional controls are available, invalidating one of EPA's key justifications for Enforceable Commitments
- The excuse that the state needs additional time to consider other technologies that were still under developed would be invalid.

The December 2000 and September 2001 SIP revisions were focused entirely on NOx reductions. However, recent scientific evidence indicates that a combination of aggressive point source NOx and HRVOC controls is the most effective means to reduce ozone concentrations in the HGA. Although a shortfall still exists in the SIP, there are alternatives to addressing it other than a NOx based strategy. The shortfall can be closed with an approach that couples NOx and VOC emission reductions. Houston's industrial base is unique and there are several categories that are regulated by the Commission that are not regulated elsewhere in the country. Therefore, the controls for the variety of industrial source categories of NOx emissions in the HGA are, in the aggregate, the most stringent controls implemented in the United States. The commission will continue to evaluate new technologies and control strategies for NOx emissions primarily from on and off road sources. The TERP program has already been very successful in identifying emerging technologies and the commission will continue to evaluate their benefit as part of the MCR.

SIP

GHASP commented that the revision fails to honor the commitments made in the adopted SIP.

The commission disagrees. The commission made the appropriate modeling and emissions inventory enhancements and adopted strategies to reduce the shortfall by 25%; thereby meeting its commitments as outlined in Chapter 7 of the December 2000 and the September 2001 SIP revisions.

ED stated that the commission focuses on the BCCA-AG consent order rather than moves toward SIP attainment. The SIP revision is driven by the BCCA consent order rather than the development of an attainment plan.

It is the commission's intent to demonstrate attainment based on the best scientific evidence available regarding ozone formation with consideration given to economic impact issues. As stated at in the proposal, the purpose of this revision was to determine if a certain level of reduction in HRVOCs could attain the same air quality benefit with an 80% NO_x reduction strategy as was demonstrated with the approved 90% NO_x reduction strategy. The commission believes it has met that determination with this revised strategy. Much analysis needs to be conducted between now and the mid-course review, particularly with regard to the contribution of other VOCs to ozone formation in HGA nonattainment area, in order to develop the most cost effective strategy to attain the standard. This effort will consist of continued evaluation of data already collected, the collection of additional ambient data through an expanded auto gas chromatograph network, and additional inventory analysis as well as additional modeling analysis. As a full analysis of what is

ultimately necessary to fully demonstrate attainment is conducted at the mid-course review, the commission will be evaluating a number of issues that may change the HRVOC rules, such as: which, if any, additional chemicals need to be addressed, and the sources of these chemicals; what is the appropriate geographic scope for the regulations; what are appropriate averaging times for the chemicals of concern; and what, if any, changes need to be made to the allocation process. By establishing a compliance date approximately 18 months after the conclusion of the mid-course review process, the commission believes it will have ample time to make necessary adjustments and still allow industry adequate time to fully comply.

ED commented that the HGA SIP lacks sufficient adopted control measures to provide for attainment. EPA rules and regulations require that the attainment SIP “must demonstrate that the measures, rules, and regulations contained in it are adequate to provide for a timely attainment” and that the measures submitted in the SIP must be adequate to “achieve the aggregate reduction of emissions necessary for attainment”. EPA’s long standing position has been to require that an attainment demonstration contain adopted, enforceable control measures that achieve the total amount of emission reductions needed for attainment. Over the years, EPA has confirmed these regulatory policies by rejecting SIPs that fail to comply.

Sierra-Houston commented that the SIP is incomplete and does not meet the FCAA requirements and therefore should be rejected by EPA. Sierra-Houston further comments that the SIP documents that the Commission has not filled the gap and that total emission reductions have not been found so that attainment of the ozone standard cannot occur. Sierra-Houston also stated that the SIP is fatally deficient; control measures that will be implemented are not spelled out; there is no commitment that certain control measures will be implemented; and the EI is not complete so filling the gap in emission reductions and the control measure effectiveness is unrealistic.

The commission disagrees, and believes that the SIP does provide for attainment of the ozone standard by 2007. Regulations and other measures adopted with this SIP submission will provide significant reductions in total NO_x and VOC. Additional measures, submitted in the SIP as enforceable commitments, will provide the further reductions needed for attainment. The commission notes that, based on trend analyses, the number and severity of ozone exceedances have decreased over the years. Implementing the SIP control strategy will substantially reduce emissions in the HGA airshed.

As stated in Section 7.1 of the SIP, “EPA has recognized that in some limited circumstances, it may be appropriate to issue a full approval for a submission that consists, in part, of an enforceable commitment. Unlike the commitment for conditional approval, such an enforceable commitment can be enforced in court by EPA or citizens. In addition, this type of commitment may extend beyond one year following EPA’s approval action. Thus, EPA may accept such an enforceable commitment where it is infeasible for the state to accomplish the necessary action in the short term.” EPA disagreed with similar comments in its approval of the HGA SIP, and stated that its position is both consistent with past practice and that the Act allows approval of enforceable commitments that are limited in scope where circumstances exist that warrant the use of such commitments in place of adopted measures.

Furthermore, as described in Chapter 7 of the SIP, the mid-course review process will ensure that the HGA demonstrates attainment by 2007. This review will enable the commission to incorporate advanced photochemical modeling and to further improve the science behind the SIP inventory

data and other tools and assumptions used to develop the SIP. Enhancements to the photochemical modeling will include state of the science meteorological modeling, updated emissions inventories, improved ozone chemistry, and a new mobile source modeling utilizing MOBILE6. The MCR will also reevaluate control measures, the transportation conformity budget, and the shortfall. Moreover, the MCR will assess to-be-considered control measures listed in Chapter 7 of the SIP. It will also include an ongoing assessment of new technologies and innovative ideas. The commission will continue to evaluate new approaches to photochemical modeling, and will strive to make improvements to existing models and input data in a timely manner. This plan in its totality, including the control measures identified in Chapter 6 of the SIP plus the process described as part of the MCR will achieve attainment. The commission is committed to working with other entities concerned with air quality and transportation issues in the HGA as part of the MCR process.

The commission has also acknowledged in Chapter 7 of the SIP that if, during the mid-course review process, it is determined that more or fewer reductions are necessary, the commission will submit the revised reduction calculation to EPA for approval. The SIP revision submitted by May 2004 will also account for any additional reductions, should they be necessary.

The commission asserts that the reductions embodied in the plan are necessary for attaining the standard.

Sierra-Houston stated that the commission admits that it does not have an approvable SIP when it states that “The commission is committed to developing an approvable attainment demonstration that achieves the significant reductions necessary to ensure attainment of the ozone standard in the HGA by 2007 and yet still maintains a robust economic growth.

The commission disagrees. The HGA SIP has been federally approved as explained in the November 14, 2001 Federal Register Notice V. 66 No. 220 pg. 57159-57196. The quoted statement discussed is not an admission that the HGA SIP is not an attainment demonstration, but rather, as stated on page 7-1 of the December 2000 HGA SIP revision, the Commission is committed to performing a MCR in 2004 that demonstrates attainment. “In order to ensure that the HGA is in attainment by 2007 and that the controls to get there are the most cost effective technology-based solutions possible, the commission has committed to performing a mid course review. The mid-course review process has already begun and will continue, ultimately resulting in a SIP revision by May 1, 2004. There are planned opportunities throughout the process, as described in the following pages, to incorporate the latest information and make decisions. This effort will involve a thorough evaluation of all modeling, inventory data, and other tools and assumptions used to develop the attainment demonstration. It will also include the ongoing assessment of new technologies and innovative ideas to incorporate into the plan. Furthermore, the commission asserts that the science today supports that the reductions embodied in this plan to occur by 2005 are a necessary step towards attaining the standard. Beyond that, the commission believes it must perform the full mid-course review analysis to determine the extent to which additional reductions must occur. The commission commits to adopting any additional measures necessary to achieve these reductions no later than May 2004.”

Gap

EPA commented that the shortfall in the SIP should be evaluated.

HGAC encourages the commission to resolve the remaining gap issues as expeditiously as possible utilizing the best technologies and to assure that there is not double counting among the SIP measures.

The commission agrees and has continued to address the remaining shortfall in this SIP. While, the December 2000 and September 2001 SIP revisions were focused entirely on NO_x reductions, recent scientific evidence indicates that a combination of aggressive point source NO_x and HRVOC controls is the most effective means to reduce ozone concentrations in the HGA. Although a shortfall still exists in the SIP, there are alternatives to addressing it other than a NO_x based strategy. The shortfall can be closed with an approach that couples NO_x and VOC emission reductions. The commission, as stated in the December 2000 and September 2001 SIP revisions, commits to fulfilling any remaining shortfall in the SIP during the MCR.

The commission recognizes that several measures have been identified to reduce emissions from similar sources and that there is the potential for overlap with the emission reductions from some of these sources. The commission is developing the proper protocol to assure that no double counting of reductions occurs and that these emission reductions are accounted for appropriately. Furthermore, the commission will demonstrate a complete accounting of these emissions at the MCR.

GHASP commented that it estimates that the gap has grown to about 97tpd from the commission's prior estimate of 56tpd, based on information from the commission and other agencies. It also believes the "gap" in general is being addressed in an unsatisfactory manner and that the commission must recognize that the "gap" has grown and is not being effectively filled. GHASP also commented that it and others (notably the Regional Air Quality Planning Committee) have repeatedly asked for updates on the commission's progress on the "gap" measures and the commission has not provided a direct response.

The commission disagrees that the gap has increased. The commission believes that the shortfall, as currently calculated, represents a reasonable approximation of the amount of additional NO_x reductions required to reach attainment. The commission is unable to address estimates from other sources without specific information being submitted with comment. Furthermore, the commission frequently reviews emissions information from outside sources and makes recalculations as appropriate. The commission disagrees that it has not provided updates on the gap measures. The commission staff regularly participates in the Regional Air Quality Planning Committee (RAQPC) meetings and its various subcommittees. These meetings are attended by state and local government staff, environmental representatives, representatives of industry, and individuals interested in the subject matter. The commission coordinates with HGAC on these efforts because local involvement has always been an extremely valuable asset to the ability to accurately characterize conditions throughout the area, and the commission plans to continue working closely with local groups in the future.

ED commented that EPA has neither determined, within the meaning of the CAA, or identified any basis in the record for finding that its gap calculation is "at least as effective as" Texas photochemical models for the purpose of describing the relationship between emissions and ambient ozone.

ED commented that EPA has not been able to test the validity of the gap calculation against monitored data because it is derived entirely from future predictions that can't be tested against reality. The Texas modeling demonstration must be vacated as arbitrary and capricious.

EPA has approved the HGA attainment demonstration with the use of the gap calculation, and support's the commission's modeling portion of the SIP.

ED, MfCA, and eleven individuals suggest that the commission use HRVOC point source controls to fill the gap.

The commission has committed to submit a formal mid-course review to EPA by May 1, 2004 to include a thorough evaluation of the gap. This review will allow the commission to incorporate advanced photochemical modeling and to further improve the science behind the SIP inventory data and other tools and assumptions used to develop the SIP. Enhancements to the photochemical modeling will include state of the science meteorological modeling, updated emissions inventories, improved ozone chemistry and new mobile source modeling utilizing MOBILE6. The MCR review will also reevaluate control measures, the transportation conformity budget, and the shortfall. Moreover, the MCR will assess to-be-considered control measures listed in Chapter 7 of the SIP. It will also include an ongoing assessment of new technologies and innovative ideas. The commission will continue to evaluate new approaches to photochemical modeling, and will strive to make improvements to existing models and input data in a timely manner. This plan in its totality, including the control measures identified in Chapter 6 of the SIP plus the process described as part of the MCR will achieve attainment.

Lawn and Garden Restriction

The City of Houston and one individual opposed this measure because it has disproportionate impacts on low income and minority workers and it will be difficult to enforce. Therefore, the City of Houston urges the Commission to determine if additional targeted VOC reductions from point sources could be used to eliminate the need for the lawn and garden rule. Houston recommends the repeal of the lawn and garden rule in favor of additional VOC reductions by the industrial sector in the 2004 MCR.

GHASP commented that the lawn care equipment operating restrictions are not likely to have the expected pollution reduction benefits, and suggest the removal of this technically unjustified measure from the plan.

GHASP and one individual oppose this "unhealthy" measure and continues to find that it has no merit as an ozone reduction strategy.

One individual opposed this strategy because it would force people subjected to the rule to work in the heat of the day. He suggests a fuel for carbureted engines.

The commission adopted the lawn equipment operating restrictions on December 6, 2000. No changes to this strategy were proposed as part of this revision to the SIP, therefore the commission is not able to act on any revisions to that strategy at this time. However, the commission has initiated the rulemaking process to delay the deadline for submitting alternative plans, in order to ensure it has adequate time to evaluate the strategy as part of the 2004 MCR.

Moreover, the emission reductions from this strategy remain necessary to demonstrate attainment in the HGA. The commission cannot remove this strategy unless it can be replaced with another strategy which obtains the equivalent reductions.

The commission has no authority to regulate the efficiency requirements of vehicles. However, the commission has adopted regulations requiring cleaner fuels in all of the ozone nonattainment areas as well as throughout the east/central portion of the state.

RACM

ED commented that non-attainment areas must consider all available controls measures and must adopt and implement, as expeditiously as practicable, all readily available strategies for implementation as part of the attainment demonstration.

The commission disagrees that all available control measures must be adopted by non-attainment areas. Those strategies which will not advance the attainment date are not considered RACM. The federal circuit courts of appeal have upheld this interpretation by EPA of the RACM requirement in the FCAA. The Act, on its face, neither elaborates upon which control measures shall be deemed "reasonably available," nor compels a state to consider whether any measure is "reasonably available" without regard to whether it would expedite attainment in the relevant area. Further, the when EPA reasonably concludes that because the Act "use[s] the same terminology in conjunction with the RACM requirement" as it does in requiring timely attainment, compare 42 U.S.C. § 7502(c)(1) (requiring implementation of RACM "as expeditiously as practicable but no later than" the applicable attainment deadline), with id. § 7511(a)(1) (requiring attainment under same constraints), the RACM requirement is to be understood as a means of meeting the deadline for attainment, Because the statutory provision is ambiguous and the EPA's construction of the term "RACM" is reasonable, we defer to the Agency. See Chevron, U. S. A., Inc. v. NRDC, 467 U.S. at 843, 104 S. Ct. at 2781-82.

ED commented that the commission has indicated that both 90% NO_x controls and VOC controls are technically and economically feasible. However, the commission has not determined if the combination of the two is RACM. Moreover, ED commented that as long as there is a gap every feasible measure that reduces VOCs or NO_x is de facto RACM.

ED also commented that the commission should evaluate as RACM the model rules developed by the Ozone Transport Commission including:

- Commercial and Consumer Products (26tpd)
- Architectural and Industrial Coatings (42tpd)
- Solvent Cleaning Operations (7tpd)
- Mobile Equipment Repairs and Refinishing Operations (20tpd)
- Portable Fuel Containers (25tpd)

The commission has always been fully committed to a RACM analysis that reviews all previously final control strategies at the mid-course review. The purpose of this current revision was to determine if a certain level of reduction in HRVOCs could attain the same air quality benefit with an 80% NO_x reduction strategy as was demonstrated with the approved 90% NO_x reduction strategy. As a part of the analysis being conducted to inform the mid-course review process, there has been modeling analysis of retaining the 90% strategy with the HRVOC rules as described in the TSD. Based upon that analysis, the commission has determined that retaining the 90% NO_x reduction strategy in conjunction with the HRVOC rules does not meet the RACM criteria of advancing the attainment date. Therefore, the last 10% of NO_x emission reductions is not needed and as a result, no further RACM analysis is needed at this time. The commission disagrees that it must identify specific controls above and beyond what is already identified in the existing gap list.

This SIP revision will strengthen the SIP with a combination of aggressive VOC and NOx emission controls. The commission expects that additional strategies will need to be adopted as part of the MCR in order to fulfill the enforceable commitments. The inclusion of MOBILE6 also may impact the attainment demonstration. Therefore, a new RACM analysis will be necessary and performed as part of the MCR.

ED commented that the SIP is not being implemented as expeditiously as practicable. For example, the point source control schedule could be accelerated. The commission has rendered meaningless the RACM requirements of the CAA by delaying the implementation schedule of key measures until the last minute.

The commission disagrees that the SIP is not being implemented as expeditiously as practicable. With regard to the point source control schedule, the commission addressed comments regarding this in its adoption of the schedule. See 26 Tex. Reg. 524 (January 12, 2001) and 26 Tex. Reg. 8110 (October 12, 2001). In addition, this same comment was addressed by EPA in its approval of the HGA SIP, stating that the compliance requirements in the phased-in (year by year) approach are as expeditious as practicable. See 66 Fed. Reg. 57236-57237 (November 14, 2001). In addition, in EPA's full approval of the Texas one-hour ozone attainment demonstration for the HGA severe nonattainment area EPA approved the SIP for HGA as meeting the reasonably available control measures (RACM) requirement. 66 Fed. Reg. 57160 (November 14, 2001). It is not clear which key measures the commenter understands are being delayed, and therefore cannot specifically reply to the statement that the commission has rendered the RACM requirements meaningless.

ROP

ED stated that any reductions required by 2007 ROP can not be replaced by measures that achieve the overall reductions by the same dates. EPA ROP guidance requires that ROP reductions achieve the overall reductions needed by attainment. Therefore, the SIP must contain measures sufficient to attainment before replacement measures can be made.

The commission disagrees that the SIP lacks the required ROP to attainment by 2007. The federally approved HGA SIP includes enforceable commitments, emission limitations, compliance schedules for the purpose of demonstrating attainment.

The commission echos EPA's position which recognizes that Texas needed time to develop and evaluate cutting-edge technologies and to adopt the appropriate measures to meet the enforceable commitment. EPA properly found that the schedule contained in the enforceable commitment is expeditious and consistent with both the statutory attainment deadline and rate-of-progress requirements in the Act. 66 Fed. Reg. 57, 178/2-3. The schedule in the enforceable commitments specifically provides that Texas will adopt controls to fill 25 percent of the reductions covered by the commitment by December 2002, and the remaining 75% by May 1, 2004. Such schedule properly accounts for the fact that some of the technologies that Texas is evaluating are further along in the development process than others.

Furthermore, the commission asserts that the reductions embodied in the plan are necessary for attaining the standard. This plan in its totality includes adopted measures identified in Chapter 6, plus the process described as part of the MCR will achieve attainment.

25% Gap Measures

Sierra-Houston and ED commented that this proposal does not provide a demonstration that energy efficiency and TERP will provide additional NO_x reductions.

ED, GHASP, and ten individuals commented that the proposal is not a good faith effort to satisfy the September 2001 SIP comment. Both groups commented that the development of these protocols is in no way the same as adopting the specific control measures that will reduce emissions by 14tpd. ED further commented that the commission offers nothing more than 2 protocols for programs that could reduce emissions in the HGA.

GHASP commented that the proposed revision fails to evaluate the Phase I control measures identified in section 7.6 of the current plan and fails to meet its enforceable commitment to close the gap by at least 14 tpd of NO_x emission reductions.

ED commented that the SIP should not be approved by EPA because it does not demonstrate attainment nor measurably reduce the shortfall, much less achieve 14 tpd for the 25% commitment.

ED recommends that the proposed VOC rules be used as a starting point to fulfilling this commitment. ED urges the commission to review and consider measures previously identified by ED in SIP comments.

Based upon discussions with EPA and evaluation of EPA's Economic Incentive Guidance, the TERP protocol described in this adoption meets the commission's commitment to achieve 25% of the shortfall. The commission acknowledges that many issues regarding the energy efficiency program remain unresolved. As a result, no specific SIP credit will be taken for the program at this time. However, the commission intends to adopt the methodology by which energy efficiency measures can be quantified. The remainder of the shortfall and additional control strategies will also be evaluated as part of the MCR.

Modeled Attainment

ED and GHASP commented that the SIP does not demonstrate attainment and it does not include photochemical modeling of attainment or adopted controls that provide for attainment. ED further commented that for these reasons the SIP can not be approved by the EPA. GHASP commented that neither the December 2000 revision nor the proposed plan meet the standard.

ED commented that using weight of evidence to avoid demonstrating attainment with photochemical modeling is inconsistent with EPA's regulatory requirements. It is not as effective as statutorily required models and it is arbitrary and capricious because it does not consider uncertainties.

ED further commented that weight of evidence as applied was arbitrary and capricious because EPA substitutes weight of evidence instead of performing model runs that would demonstrate the effectiveness of the missing control strategies. It is undoubtedly arbitrary when EPA's long-standing regulatory guidance requires the iterative application of the model to determine whether those additional reductions will provide for attainment. Weight of evidence cannot provide a rational justification for perpetuating the uncertainty that exists primarily because the model has not been applied to answer the question it is best designed to answer.

ED also commented that a SIP revision must consider development of an overall plan to meet attainment. The commission has not considered VOC controls in addition to point source NO_x controls. The fact that

the commission failed to evaluate whether combined 90% NO_x reductions and VOC strategy will lead to attainment is ironic because enforceable commitments were needed to a “shortage of readily available control measures.” Failure to consider whether a combined 90% point source NO_x control combined with a HRVOC control strategy could lead to attainment interference under 42 USC 7410 (1).

ED commented that EPA unlawfully determined that the modeling analysis performed by Texas satisfies the statutory requirements for a modeled attainment demonstration because two required regulatory guidelines had not been met. First, Texas’ modeling analysis doesn’t show “no predicted daily maximum ozone concentrations greater than .12ppm”. Secondly, Texas has not performed model simulations for emission control measures that demonstrate attainment.

ED commented that it is not sufficient that this proposed SIP revision merely maintains the integrity of the SIP. The commission is urged to defer any action on point source NO_x controls until attainment can be reached without them because it violates 42 U.S.C 7410 (1). TCEQ’s sole objective is to maintain the integrity of the SIP and not achieve attainment. Maintaining integrity is not the standard that a SIP revision needs to be measured against. Even if a SIP revision does not exacerbate the previously adopted SIP or maintains the integrity of the SIP it may still be found to interfere under section 7410 (1) of the CAA. The provision requires the EPA to evaluate whether the plan as revised will achieve National Ambient Air Quality Standards under the Act, and mere absence or exacerbation of the existing situation does not assure achievement of the NAAQS. ED commented that interferes identified by ED are the analysis of whether HRVOCs can replace the 10% of industrial NO_x controls only because the BCCA-AG consent order required the evaluation.

GHASP commented that the failure of the commission to expeditiously attempt a full attainment demonstration is of concern because of its impact on transportation issues. It agrees that the ongoing scientific research suggests that the commission will be best positioned to complete a revised attainment demonstration in late 2003. However, it sees no reason why the commission could not expedite a revised attainment demonstration by early 2003. The commission would probably need to admit certain correctable flaws in an early 2003 demonstration, but it could essentially reset the baseline to incorporate the current adopted attainment strategy and the key elements of the latest scientific findings.

Sierra-Lone Star emphasizes the need for improving the proposed Regulation V revisions considering the fact that there is no complete industrial emissions inventory, SIP or attainment demonstration.

The HGA SIP is federally approved (See November 14, 2001 Federal Register Notice V. 66 No. 220 pg. 57160-57196). The EPA approved SIP demonstrates how the area will attain the 1-hour ozone standard. Additionally, the commission has committed to submit a formal mid-course review to EPA by May 1, 2004 to include a thorough evaluation of the modeling. This review will allow the commission to incorporate advanced photochemical modeling and to further improve the science behind the SIP inventory data and other tools and assumptions used to develop the SIP. Enhancements to the photochemical modeling will include state of the science meteorological modeling, updated emissions inventories, improved ozone chemistry and new mobile source utilizing MOBILE6. The MCR review will also reevaluate control measures, the transportation conformity budget, and the shortfall. The commission will continue to evaluate new approaches to photochemical modeling, and will strive to make improvements to existing models and input data in a timely manner. Moreover, the MCR will assess to-be-considered control measures listed in Chapter 7 of the SIP. It will also include an ongoing assessment of new technologies and innovative ideas. This plan in its totality, including the control measures identified in Chapter 6 of the SIP

plus the process described as part of the MCR, will achieve attainment. The commission is committed to working with other entities concerned with air quality and transportation issues in the HGA as part of the MCR process.

This SIP revision in no way weakens the attainment demonstration, but rather strengthens the plan through a combination of HRVOC and NO_x controls. The prior dependence on enforceable commitments and a lack for readily available control measures may diminish to the extent that this SIP is no longer solely a NO_x based strategy. The commission disagrees that this action interferes with any applicable requirements.

The commission has conducted additional sensitivity analysis beyond the current industrial strategy to determine if there are other means of achieving attainment besides a NO_x only strategy. The commission has always been fully committed to a full analysis at the mid-course review. As a part of the analysis being conducted to inform the mid-course review process, there has been modeling analysis of retaining the 90% strategy with the HRVOC rules as described in the TSD. The commission disagrees that it must identify specific controls above and beyond what is already identified in the existing gap list. This SIP revision will move to strengthen the SIP with a combination of aggressive VOC and NO_x emission controls. The commission asserts that equivalency has been determined. In consultation with EPA to clarify the intent of their comment regarding further analysis, it was agreed that prior to revising the NO_x rules the Commission would 1) model all currently adopted rules, 2) determine the ozone differential between 80% and 90% NO_x, 3) determine the VOC levels necessary to equal that differential, 4) calculate the relative design value to determine how close to 124ppb this strategy is, 5) if higher than 124ppb conduct across the board VOC and NO_x reduction sensitivities to determine if attainment can be reached with a mix of VOC/NO_x strategies. Therefore, this SIP revision includes a full analysis of the SIP where all adopted control measures are modeled.

Furthermore, the reductions embodied in the plan are necessary toward attaining the standard.

The commission always compares the base-case model with observational data to assure that the model replicates historical ozone episodes within an acceptable degree of accuracy (this comparison is documented in the December 6, 2000 SIP revision). However, in the future case, the base-case model prediction accuracy is further complicated by uncertainties in the predictions of emissions growth and the effectiveness of various types of controls.

The commission notes that the EPA has allowed Weight of Evidence (WoE) to be used in attainment demonstrations across the United States for areas which have had difficulty showing attainment via the deterministic test. The reason for this allowance is that the deterministic test is in reality much more stringent than the actual standard, which allows occasional exceedances of the standard. In 1999 EPA published guidance for demonstrating attainment by calculating a shortfall (gap) based on two linear extrapolation methods. Neither method was found appropriate for the HGA, where the ozone response to reductions of NO_x is nonlinear. Thus EPA Region 6 developed a nonlinear method which could be applied in the HGA, and this method was used in the proposed SIP revision. Finally, WoE can consist of a wide variety of analyses which can be used to augment the modeling demonstration. While some methods involve averaging measured and/or modeled peak ozone concentrations, the method used in the current SIP proposal to calculate the gap does not.

Sierra-Houston commented that the Commission continues to use an ozone episode that occurred in 1993 for modeling. Newer episodes must be used in modeling so current and not past conditions are modeled.

The commission concurs and performed photochemical modeling using the 2000 episode for the purposes of the December 2002 adoption.

TERP

EPA expressed concern that the state is relying on SB5 to achieve its 25% commitment due to a lack of sufficient funding. Without sufficient funding the TERP commitment cannot be counted on to achieve the 25% commitment.

The commission agrees that it is relying on SB5 to achieve significant emission reductions. EPA's proposed finding of failure to implement the HGA SIP based on the current lack of sufficient funding can allow for necessary action should TERP funding not be restored. Necessary action could potentially include alternative control measures to achieve the tonnage associated with the 25% commitment.

ED and GHASP commented that the SIP contains nothing more than a description of a protocol for the TERP program. ED further commented that the Commission, at a minimum, must explicitly state the amount of SIP credit that is being allocated to the TERP and provide a reasonable assurance that the TERP program will deliver the promised tons of emission reductions. GHASP further commented that nowhere in Section 6.4.2 does the commission state that TERP will achieve any specific level of emission reductions. The commission has failed to clearly adopt any NOx control measure in this proposal. GHASP also commented that the commission must reevaluate whether TERP can meet its obligation to replace the construction restrictions (6.7 tpd) and the diesel equipment purchase rules (12.2 tpd) at current funding levels.

ED urges the commission to affirmatively demonstrate that the overall reductions attributed to TERP in the SIP can be achieved in 2007 and maintained until a maintenance plan is approved for the region. The demonstration should include the amount of funding needed based upon cost effectiveness, projected participation levels, duration of funding, and load profiles. The commission must show that these reductions will be distinct from diesel emission reductions counted elsewhere in the SIP, in particular VMEP and potentially replacement of the environmental speed limit.

Based upon discussions with EPA and evaluation of EPA's Economic Incentive Guidance, the TERP protocol described in this proposal meets the commission's commitment to achieve 25% of the shortfall. Additionally, TERP and every other control measure included in the SIP will be evaluated as part of the MCR to ensure that they will achieve the necessary emission reductions to reach attainment.

Since the 1990s, the EPA has been phasing in stricter emission standards for both on-highway and off-highway diesel engines. The next phase of ever-tightening emission standards occurs in 2004 when new on-highway engines will be required to emit no more than 2.5 g/bhp-hr of NOx. In 2007, these standards drop by 90% to 0.2 g/bhp-hr NOx for on-highway diesel engines. However, diesel engines have a slow turnover rate due to their robustness and longevity and at any given time the fleet mix will include much older, dirtier engines. The TERP program aims to help the transition to cleaner diesel engines by targeting older, dirtier engines for retrofits, conversions, or repowers. The Commission expects a diminishing role for the TERP program over the years as the oldest and

dirty engines are phased out and replaced by newer, cleaner engines. It is also a fact that a number of contracts for emission reduction projects will be in place beyond 2007. Therefore, for the purposes of this attainment demonstration, emission reductions associated with TERP must only be demonstrated until 2007, to help facilitate the natural turnover of the fleet to cleaner engine standards.

The commission acknowledges that there are a number of programs all with the goal of reducing emissions from diesel engines. The commission is developing the proper protocol to assure that no double counting of reductions occurs and that these emission reductions are accounted for appropriately. Furthermore, the commission will demonstrate a complete accounting of these emissions at the MCR.

The City of Houston further urges the commission to clearly and consistently highlight its reliance on SB5 to state leaders and the Texas Legislature and assess what specific actions and strategies are necessary to facilitate the construction sectors' full participation in programs funded by SB5.

HGAC urges the commission to work with the Texas Legislature and other stakeholders to assure that full funding of SB5 be restored.

TCE commented that the failure to adequately fund SB5 has resulted in further shortfalls.

The Partnership supports using NOx reductions from TERP to replace the repealed construction related rules and be applied to the gap. The partnership will work actively with the Commission and the 78th Legislature for restoration of full funding.

The commission acknowledges that a large portion of the emission reductions in the SIP rely on TERP funding and the commission has every intention to continue to convey that message. The commission appreciates the support of the commenters who support the restoration of full funding.

The HCIC strongly supports the implementation of TERP and believes that TERP is a cost effective way to stimulate technology development.

The commission appreciates the support and agrees that TERP is a cost effective program that will assist in bringing emerging technologies to the marketplace.

Sierra-Houston commented that TERP is not enforceable. And because it is voluntary therefore it can not be considered a control strategy. It also stated that the commission does not require the repayment of dollars if a contract is not met and that the commission states that it can require repayment at its own discretion. Sierra-Houston commented that there is no recognition that the vehicles and other units that are part of TERP will get older and will emit more emissions. It also said that their additional lifelong emissions must be accounted for and eliminated during the program operation. Sierra-Houston commented that the commission admits the Legislature must address program uncertainties and that the commission never states after each grant runs out whether there will be requirements that emission reduction controls stay in place for the lifetime of the emissions unit or whether the controls can be dismantled.

To receive credit in the SIP for TERP as a control strategy, the commission will use the Economic Incentive Program (EIP) guidance to verify the validity of the programs. Of the EIPs identified, the

commission is utilizing the Financial Mechanism option, which is described as subsidies targeted at promoting pollution-reducing activities or products. The commission has produced guidelines, protocols, and criteria for eligible projects. Criteria from that guidance has been incorporated into the verification process. The program includes provisions to ensure that the reductions are surplus, quantifiable, and enforceable (through contract provisions). However, it is the program itself, including the related rules and guidance, which are enforceable against the state for purposes of SIP strategy approval.

The contract provisions require the repayment of dollars if the contract is not met. The contract gives the commission the discretion of determining when repayment must occur and how much of the funding must be returned. This second provision allows the Commission to evaluate each situation individually, to determine how much of the funds must be returned and when to invoke this requirement.

The emissions reductions under the program are calculated according to a defined project life. The project life used must not exceed the expected life of the use of the emissions reduction equipment, and in many cases, it will be less than the actual use life. The emissions factors used are based on the certification or verification by EPA or CARB of the emissions reductions that can be attributed to the use of that technology. The certification or verification by EPA or CARB include consideration of the durability of the technology and expected degradation of the effectiveness of that technology.

For projects where the technology has not been certified or verified by EPA or CARB, the commission's protocol requires submission and acceptance of test results conducted in accordance with applicable Federal Test Procedures, and agreement to conduct annual in-use testing of the technology over the project life, or until the technology is certified or verified, to show that the emission reductions used for the grant are being achieved.

This response pertains to the retrofit of an engine or add-on of equipment or vehicles to install an emissions control device. The contractual commitment by a grant recipient is to use the emission reduction device for the period of time used to determine the emissions reductions that can be attributable to the project. The reductions over that period of time will be permanently retired, and will be applied to the SIP. In many cases, the project life used for the calculations is the same as the life of the engine being retrofitted. In the cases where the project life is shorter than the useful life of the equipment, the contracts do not typically require continuing use of the emission reducing equipment past the project life. However, in many instances discontinuing use of the emission control or new engine would be difficult and in some cases legally prohibited by vehicle anti-tampering requirements, and therefore the lack of contractual obligation after the end of the project should not raise concerns.

ENERGY EFFICIENCY

Public Citizen commented that the program does not encourage the use of additional energy efficiency measures by establishing a series of deemed NOx credits that can be obtained by the end user or by cities that could serve to encourage the installation of energy efficiency equipment.

The commission believes that incentives are important in encouraging additional energy efficiency measures, but has not developed the types of programs mentioned by Public Citizen. There are issues that need to be considered to determine the feasibility of such programs before design and

implementation can take place.

Public Citizen commented that the commission should develop a geographically adjusted deemed NO_x savings program for valuing the reductions and giving NO_x credits for a variety of energy saving measures and review them annually. The EPA has recently developed such a methodology for calculating emissions reductions by county resulting from each Mwh of energy used reduced in each of the power control areas. This county by county data can be aggregated by non attainment area but in order to truly reflect the magnitude of the reduction, the Commission should develop a formula that accounts for the impact of transported NO_x from sources located outside the non-attainment counties.

The commission continues to work with EPA and other agencies to ensure that the best available methodology is applied to estimate energy efficiency savings and their associated NO_x reductions. If these savings result in less NO_x transport from sources outside the nonattainment area, it is possible that this factor can be included in the calculation methodology.

Public Citizen commented that the program should distinguish between the time that energy savings occur. If it does not it may give incentives for the wrong types of efficiency programs thus reducing its potential as an effective emissions reduction tool. The proposal underestimates savings on peak or at the time when NO_x is produced because the methodology does not distinguish between types of energy efficiency programs, the time emissions are reduced and the season. In the methodology used, the average daily emissions are simply divided by 365. The EPA has developed a much more sophisticated system called the ADER system that gives divides the various efficiency options into 10 types depending on the generating hours they displace. There are some efficiency programs that are most effective on peak such as A/C, windows or insulation. There are others such as energy codes, refrigeration, programmable thermostats, and other appliances that are most effective at reducing energy use in the key early morning hours. EPA guidance would suggest this program should be revised to assure that credit is given for emissions reduced coincident with the ozone season not a full year. A review in 2005 will help assure a much more geographically refined emissions reduction profile that should assure even greater credits for the non-attainment and near non-attainment areas.

The commission agrees that more refined techniques and better data will greatly improve the accuracy and the usefulness of the estimates of energy savings and emissions reductions. The commission is aware of the ADER model, and believes that it contains some improved features compared to E-GRID, another EPA-developed model which was used for the current SIP revision. The commission will continue to work with EPA and other interested parties, including Public Citizen, to ensure that the greatest possible benefit is derived from an energy efficiency program.

Reliant also commented that the methodology used in Appendix K significantly overestimates emission impacts. Installation of emission controls required by the HGA SIP will substantially reduce emission impacts of the SB5 and SB7 programs.

In estimating the emission impacts of energy efficiency measures, the commission used the tools that were available, considering the short time frame for developing the information. The data included in this SIP revision represent a first pass at a program which will be more comprehensive and more accurate as better tools and data inputs become available. At that time, the impact of emission controls required by the HGA SIP with relation to the and SB7 programs will be reevaluated.

ESL submitted its draft annual report on SB5 activities as commentary on the proposed SIP revision.

ESL noted that its report contains preliminary estimates of the impact of adopted energy codes for residential new construction, which will be a placeholder for the impacts of codes for commercial new construction and for residential and commercial retrofits. ESL stated that the report includes a discussion of methodologies for estimating, measuring, and verifying energy efficiency savings and renewable energy applications in the buildings sector. ESL pointed out the need to address E-GRID's method of using average tons per day for air conditioning loads, for example, instead of specific ozone season tons per day underestimates the potential energy savings.

The commission commends the caliber of work and thoroughness of presentation by ESL. The studies currently being performed by ESL will form the foundation of future energy efficiency programs implemented in the state, which will become an integral part of the ozone attainment plans for HGA and other areas. The commission looks forward to working with ESL and other interested parties in developing a sound methodology and plan for carrying out energy efficiency measures.

Dow commented that Commission does not explain how electricity growth through 2007 was determined. It also states that changes in the economy, fuel pricing, or population growth may change electricity demand. The assumption that the flow of power among regions will not change needs to be reviewed. Market deregulation has led to more variable dispatch and price sensitivity than in 1998. If growth rates vary among regions more than expected, the power flow among regions may be affected more than the model predicts.

The commission used data contained in several ERCOT (Electric Reliability Council of Texas, Inc.) reports: Energy Information Administration (EIA-411) Projected energy and peak demand for the first ten years (2001-2011); ERCOT New and commercial generation projects (to April 1, 2005), and ERCOT retirements (through 2006), and information developed in cooperation with Public Utility Commission of Texas (PUCT) to project electricity growth through 2007. The commission agrees that numerous variables must be taken into account to accurately evaluate the entire scope of energy issues, and will continue to work with EPA, PUCT, and other organizations to refine this information.

Public Citizen commented that the methodology uses 1998 data, which predates the onset of, deregulation and thus does not reflect current contracts or dispatch orders. The Commission should plan to revise the emission credits based on reanalysis of post-deregulation generating data and load flows in 2005.

The E-GRID model used by the commission to estimate energy efficiency savings and the associated NO_x reductions is based on data for 1996 through 1998. As stated in the response to the previous comment, the most recent available information was used in projecting electric demand and electric generation to 2007. The commission plans to update the initial work contained in this SIP revision, taking into account deregulation and other factors.

ADDITIONAL ENERGY EFFICIENCY COMMENTS

The following were additional general energy efficiency comments received. The commission acknowledges that many issues regarding the energy efficiency program remain unresolved. As a result, no specific SIP credit will be taken for the program at this time. Therefore, comments unrelated to the energy efficiency quantification methodology are beyond the scope of this SIP submittal. However, the commission intends to adopt the methodology by which energy efficiency

measures can be quantified. As part of the MCR, this program will be further assessed to determine its feasibility and reviewed in its entirety including those issues outlined below by concerned parties. The commission is committed to working with interested parties to resolve the outstanding energy efficiency issues.

An individual commented that consideration should be given to developing programs that industrial users and generators can participate in. The power consumed by electric motors driving pumps, blowers, and compressors used by of the chemical, refining, and petrochemical industries in Houston-Galveston nonattainment area is a significant portion of the total electrical power demand in the area. More efficient electric motors and devices such as variable frequency controllers that are on the market today that can reduce the amount of power required for these energy intensive uses. A program should be implemented that would allow NO_x emission reduction credits for installing these energy saving devices as it would provide further incentives over the cost savings for reducing electrical power consumption. Such an emissions credit program would need to be compatible with the existing NO_x Cap and Trade Program.

The individual also suggested that by lowering NO_x emissions in the morning, benefit may arise by using off-peak generating processes such as the Northwind centralized refrigeration systems that not only shift the time of NO_x emissions, but also use more efficient generating systems that are the base load units that are operated at the off-peak times further lowering the NO_x emissions.

BCCA-AG, Lyondell, Reliant, and one individual strongly objected to the concept of deducting approximately 1.5 tpd from the point source emissions cap and crediting these reductions to the “energy efficiency” category.

BCCA-AG, Lyondell, and Reliant further stated that the 80% option, incorporation of the alternative ESADs, is premised on point source NO_x reduction that represents a fixed commitment, in the event that the science reviews shows the required level of benefit. Credit for other SIP categories, including energy efficiency, must come from any “additional NO_x reduction benefits” of the new reductions in HRVOCs.

One individual noted that electricity used in one area of the ERCOT grid may be generated in another area. He also commented that with in the existing cap and trade program the energy efficiency program will not result in long term overall reduction of NO_x emissions, but will allow for some future economic growth within the region with out excluding the current NO_x emissions cap. He commented that the program only reduces the growth of electric power generation consumption. Overall electric power consumption is expected to increase. Furthermore, the proposal does not address energy reductions resulting from adoption of the building energy efficiency performance standards in Senate Bill 5. The individual stated that it is unfortunate that political subdivisions do not directly benefit from these avoided NO_x emissions for the energy efficiency measures that they are required by SB5 to implement, however, these energy efficiency measures will provide long term financial benefits to the political subdivisions through decreased energy consumption. Further, the energy efficiency measures will allow management of continued economic growth in the region within the existing NO_x emissions cap. Therefore, the costs of implementing these energy efficiency measures should be considered to be a service to the public.

Reliant commented that the energy efficiency program does not produce SIP emission reductions. SB5 and SB7 are effective for slowing the growth of electric generation, however, it does not eliminate electric generation growth and does not reduce the SIP emission baseline. Furthermore, energy usage reductions cited in SB5 are goals and there is no certainty these energy savings will be achieved.

ED, EPA, Houston and Public Citizen support the inclusion of an energy efficient program into the SIP.

EPA and Public Citizen suggested removing the emission reductions associated with energy efficiency measures from the area point source cap.

GHASP commented that Appendix A specifically indicated that none of the emission reductions may be relied upon. It awaits the commission's proposal to retire NOx allowances to implement this measure, or to identify alternative means of ensuring that NOx reductions are actually achieved. The public must have an opportunity to comment on such a proposal. Furthermore, GHASP commented that the same conclusion reached with regard to the SB5 and SB7 energy efficiency programs must apply to the 3.57 tpd credit given for federal energy efficiency measures in Table 6.1-2. Any portion of this credit that relates to electric grid or other sources covered under the cap and trade program should be withdrawn and unenforceable since the allowances would be traded rather than retired.

Public Citizen suggest that the program be statewide and include improvements to meet the criteria for granting credits established by EPA.

Public Citizen commented that the proposal undercounts savings. It fails to count all efficiency reductions required by state law and it does not include building code savings. It estimates building code savings in Houston to be .53 tpd-Year 1, 1.20 tpd-Year 2, 2.00 tpd-Year 3, 2.88 tpd-Year 4, 3.6 tpd-Year 5, 4.32 tpd-Year 6, 5.04 tpd, Year-7. The proposal only includes emission reductions from 8 of 4,000 political subdivisions and it does not include state agency savings. Further, it does not include displaced emissions from renewable energy. It underestimates savings because the methodology does not capture the time when the emissions are reduced. There are some energy efficiency programs that are most effective on peak and other appliances that are most effective at reducing energy consumption in the key early morning hours.

Houston recommended that an assessment be completed to determine if additional SIP credit can be earned from the implementation of additional energy efficiency measures.

Sierra-Houston commented that the energy efficiency measures cannot be enforced or monitored, and therefore cannot be used as a control strategy.

ED commented that the Commission must explicitly state the amount of credit that is being allocated to energy efficiency measures. The Commission should clarify that 1.49tpd is the estimates emission reduction from the implementation of SB5 and SB7, whether this is the amount of emission reduction credit that has been assigned to energy efficiency measures in the SIP.

ED suggested that the surplus generating capacity created by reduced demand locally could be used to generate power to be sold outside the HGA while complying with its emission cap.

Public Citizen suggested that the commission adopt a rule requiring cities statewide or in the East Texas region to require new buildings to go beyond current codes. Public Citizen also commented that the Commission should require 14 non-regulated appliances to meet tougher energy standards. It also stated that Houston could save 11% of its energy consumed annually through urban heat island measures.

Public Citizen commented that under EPA guidance this program should be revised to assure that credit is given for emissions reduced coincident with the ozone season, not a full year. A review in 2005 will help

assure a much more geographically refined emissions reduction profile that should assure even greater credits for the non-attainment and near non-attainment areas.

Public Citizen commented that the program does not give the owner of the building the right to sell a credit to the person installing the energy device nor provide for a method of aggregating the credits in quantities large enough to be traded. The program should specifically state that the owner of the building or facility retains the credit for NOx reductions and they should also allow for the aggregation of these credits by installers or ESCOs or utilities and allow aggregation so that the NOx reductions can add up to the 1 ton minimum size the EPA requires. Initially these values could be determined by measured savings or by reliance on EPA's estimates or other published data, and adjusted prospectively after analyzing two years of program data. Deemed NOx savings should be published and limited to those efficiency measures not otherwise required by state or federal law. So, credit would not be offered for any SB 7 or SB 5 funded programs, but could be granted for homes built to with savings measures beyond the code-such as energy star appliances or solar roofs. Cities might be able to get credit for Urban Heat Island requirements for new subdivisions. Posting these deemed credits and allowing aggregation will encourage the use of this as an emissions reduction tool. In order to be effective, permanent and real we think that the commission must reduce the allowable NOx credits for the utility sector for each MW of efficiency installed. The EPA's guidance seems to allow for up to 3% of the total allowances for the utility sector to be reduced in this manner.

Public Citizen commented that the plan does not set up a mechanism to account for consequential reduction in other areas or of other pollutants such as SO₂, PM, HG, and CO₂. The program should be modified to have statewide effect, in the 39 county East Texas airshed or to at least be used by near nonattainment areas and nonattainment areas. Additionally it makes sense to promulgate rules that enable the commission to keep track of the resulting emission reductions since the utilities are required to report them by law, especially in light of the forthcoming 8-hour ozone standard.

Public Citizen commented that the proposed program gives credit only for installation of energy efficient appliances, but not for renewables or other types of distributed generation that may be more effective in reducing NOx. This program should be modified to include deemed savings for the installation of renewable energy devices and actual emissions displaced by other types of D.G. units. In order to reduce emissions from utilities the legislature required the development of renewable energy and allowed the development of a "greenpower" market as part of SB7, the electric deregulation bill. The Commission should expand their proposal to give credit to consumers who purchase volunteer to purchase renewable energy. Perhaps the greatest potential NOx reductions could come from the use of distributed generation such as cogeneration, combined heat and power or the use of fuel cells.

MVEB

HGAC and ED support updating the MVEB. ED commented that the attainment MVEB for the HGA should be adjusted to reflect on-road motor vehicle emission reductions expected to occur from implementation of TERP. By approving the MVEB, EPA ignored its own policy of requiring new budgets "if any adopted measures would change the budget". As a result of not revisiting the MVEB, HGAC's task of demonstrating conformity could be artificially simplified. HGAC could take credit for TERP on-road measures, but would not have to comply with a more stringent MVEB. This has the potential to allow short-term road building, which may increase VMT operation.

GHASP commented that a revised attainment demonstration would enable the commission to establish new motor vehicle emission budgets (MVEBs). A new MVEB is needed to address conformity issues

relating to the proposed revision or repeal of the 55 mph speed limit, and the potential for a proposed high capacity transit system expansion by the Metropolitan Transit Authority. Without a revised MVEB, it is our understanding that it would be difficult to move forward on these issues prior to 2004. However, there may be legal problems with taking such steps that we have not explored. GHASP encourages the commission to proactively address the concerns related to providing the Houston region with a MVEB based on Mobile 6 in the context of a full attainment demonstration as expeditiously as possible.

The commission disagrees with the conjecture that it has included inaccurate budgets in the SIP. However, as stated in Chapter 7, if during the mid-course review process the commission adopts any additional control measures which will affect the budgets, it will concurrently adjust the budgets and submit them to EPA as a revision to the SIP. Reductions achieved through the TERP program will be assessed during the MCR process when the projects are incorporated into the SIP and the appropriate revisions to the motor vehicle emission budgets will be made at that time. The commission points out that any increase in VMT due to “short-term road building” would have to be built into the following conformity demonstration so there is little incentive for such activity.

HGAC urges the Commission to include HGAC in the development of the on-road motor vehicle inventory and other components used to develop the MVEB using the latest planning assumptions. HGAC urges the Commission to submit a revised MVEB using MOBILE6 by March 2003.

TCEQ recognizes that a revised MVEB is important to HGAC for development of transportation plans and associated transportation projects. However, due to time and other resource constraints the TCEQ is unable to submit a revised MVEB budget using MOBILE6 by early 2003. Though discussions with HGAC, the understanding has been reached that the TCEQ will revise the MVEB as part of the MCR process. The commission is committed to working with HGAC on air quality and transportation issues.

VMEP

GHASP commented that while it supports many of the Voluntary Mobile Source Emissions Reduction Program (VMEP) measures, these measures are not being implemented in a manner that is likely to result in the promised emission reductions. The VMEPs have not necessarily been assigned (as a commitment with a deadline) to a particular agency; it is not clear that the agencies that are expected to implement these VMEPs possess the legal authority to implement the measures; and the state’s commitment to the full implementation is so general and vague that it can’t be relied upon for any specific action by any date.

GHASP also commented that the lead state agency merely commits, in five of the measures, to “monitor that the control technology is operating effectively and is properly maintained.” In six of the measures, there is no mention of any organ of the state checking to ensure that any aspect or component of the measure is “operating effectively.” In no measure do the commitments add up to a definite, unequivocal and enforceable commitment by the state to ensure that the measure is actually implemented. It further expects that some VMEPs will be implemented and result in emission reductions because many of the agencies have demonstrated good faith in the past, it is uncertain which will actually succeed, how the commission will evaluate success, and how the commission will be accountable or hold other agencies accountable for the success and failure of VMEPs.

The commission has complied with EPA’s extensive and specific guidance regarding the VMEP program. The *Guidance on Incorporating Voluntary Mobile Emission Reduction Programs in State*

Implementation Plans (SIPs) was submitted to all EPA Regional Administrators from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, via memorandum on October 24, 1997.

The commission appreciates the commenter's concern regarding the certainty of emission reductions associated with VMEPs. However, the commission also agrees with, and supports, the EPA's commitment to innovative approaches to achieving air quality goals in the promotion of viable voluntary mobile source air quality programs. The EPA guidance document regarding the use of VMEPs eligibility for SIP credit notes that a state must "submit a SIP which 1) identifies and describes a VMEP; 2) contains projections of emission reductions attributable to the program, along with relevant technical support documentation; 3) commits to monitor, evaluate, and report the resulting emissions effect of the voluntary measure; and 4) commits to remedy in a timely manner any SIP credit shortfall if the VMEP program does not achieve projected emission reductions." The EPA guidance document provides all necessary assurances regarding enforceability appropriate to SIP submissions. The HGA SIP contains all appropriate and required information relating to VMEPs. The local area has worked hard to identify voluntary programs and is committed to the success of the VMEP program. The commission does not agree that there are concerns regarding agency legal authority to implement VMEPs. All of the strategies included in the VMEP category are, of course, voluntary in nature, and rely upon commitments at the local governmental level to initiate, coordinate, structure, and manage.

On September 25, 2002 the commission adopted a SIP revision that included a clarification to its commitment to remedy any shortfall in the VMEP program, thereby further assuring that reductions accounted for under this program are realized.

Double Counting

GHASP commented that the plan includes a number of financial incentives, voluntary measures, and regulatory programs to reduce emissions from diesel sources. It asks the commission to undertake a comprehensive assessment of these activities to determine whether there is significant overlap in the expected emission reductions, resulting in a degree of double-counting.

ED commented that based on its own analysis, it appears that the technical feasibility studies estimate that NO_x emissions from diesel-fueled sources could be reduced by as much as 62 tpd. However, the same analysis suggests that the current plan calls for approximately 67 tpd in reduced NO_x emissions from these sources. The commission should assign a team to this issue with the responsibility of coordinating all the diesel programs and assuring their success.

The commission acknowledges that there are a number of programs with the goal of reducing emissions from diesel engines. The commission is developing the proper protocol to assure that no double counting of reductions occurs and that these emission reductions are accounted for appropriately. Furthermore, the commission will demonstrate a complete accounting of these emissions at the MCR.

The commission is unable to address estimates from other sources without specific information being submitted with the comment. Furthermore, the commission frequently reviews emissions information from outside sources and makes recalculations as appropriate.

Conformity

GHASP commented that the US Army Corps of Engineers is currently considering two proposals to build large container ports. The air quality implications of these facilities are significant – a total of 5 tpd of NOx emissions in 2007 and 19.6 tpd in 2025. The commission has set a target for regional NOx emissions of 305 tpd; NOx emissions from this facility would exceed 6% of this regional target, which seems to be an unreasonable share of total emissions. These data are from Robert D. Lawrence, “Detailed Comments on the Port of Houston Authority’s Proposed Bayport Container/Cruise Terminal Draft Environmental Impact Statement: (March 27, 2002), in which the EPA expressed concern about the conformity of the proposed container ports.

GHASP also commented that these operating emissions do not include the increased train and truck emissions that would also increase as a result of the port activity. Although the commission and the H-GAC claim that these activities are included in regional growth projections, it is unclear whether these growth projections account for one, two, or perhaps even more container port facilities.

The ultimate impact of these facilities on the region’s air quality is of such a great magnitude that it should not be addressed along with other incremental growth projections – construction of these facilities are clearly major decisions reached only with the agreement of local sponsors and the U.S. Army Corps of Engineers. If the region’s air quality cannot afford this type of growth (with the consequential restraint it would require of other economic development options), then the commission should speak clearly on this point. Otherwise, it should adjust its allocation of NOx emissions to accommodate the intentions of the Corps.

GHASP further commented that the draft environmental impact statements for each facility claim that the projects conform to the SIP because the SIP contains emission growth projections that account for port expansion. However, these emission growth projections allow for only one new container port facility – should both be permitted, the resulting emissions would significantly increase projected emissions in 2007 and beyond.

The EPA commented that the use of low emission equipment should be addressed as well, since these facilities propose to add significant amounts of diesel equipment, as well as use large amounts of electricity.

Natalie O’Neill, Mayor of the City of Taylor Lake Village, stated that the 55mph realizes 12 tpd in the SIP and the Bayport Facility will emit 13.6tpd and the Shoal Point Facility will emit an additional 2.4tpd. **The port projects that are the subject of these comments have been evaluated through the General Conformity process and are outside the scope of the current SIP revision.**

The Federal General Conformity (41 CFR Part 51) rule was created to ensure that actions by the Federal government will neither cause/aggravate a violation in air quality standards, nor delay timely attainment of national ambient air quality standards. This federal rule was then incorporated for the most part into a state rule (30 Texas Administrative Code § 101.30). Any project involving federal funds or requiring federal approval may be subject to the general conformity rules. The rules apply in areas where federal air quality standards are being violated (nonattainment areas) or which have a history of violating standards but are not currently in violation (maintenance areas).

The General Conformity rule establishes annual de minimus emissions levels based on the classified severity of an area's air quality problem. The Houston/Galveston area has a de minimus level of 25

tons per year for VOC or NOx. In quantifying the emissions associated with a project, both direct and indirect emissions are included, but only emissions which are within the scope of the federal agency's authority are considered. If emissions exceed de minimus levels, three options are available for demonstrating conformity (with the SIP). (1) Specifically identifying and accounting for the emissions in the latest approved SIP, (2) Providing written assurance from the state that it will revise the SIP to include the project's emissions, or (3) Offsetting emissions exceeding de minimus levels, through a SIP revision, purchase of emission reduction credits, or other means, in the same time frame and nonattainment area.

Contingency

ED commented that the HGA attainment demonstration fails to include contingency measures as required by the CAA and would therefore have to be disapproved by EPA. ED recommends that the commission add contingency measures to the SIP to comply with the law.

The requirements for contingency measures applicable to nonattainment areas, FCAA §§172(c)(9) and 182(c)(9), relate to the requirement for reasonable further progress (RFP) or any applicable milestone. EPA has stated in the general preamble (57 Fed. Reg. 13498, 13511) that these measures only apply when areas fail to meet the RFP requirement or fail to attain the standard. Texas adopted and EPA approved the required contingency measures in the November 1994 SIP revision, and those contingency measures were further discussed in the July 1996 SIP revision. Furthermore as stated on page 7-4 of the September 2001 SIP revision, “ The commission commits to adopt measures necessary to achieve at least 56 tpd of NO_x emission reductions in the HGA above and beyond those reductions already identified by the control measures listed in Chapter 6, Table 6.1-2. Additionally, as the commission completes the mid-course review process, as outlined in Section 7.2, it may show that the HGA needs more or fewer tpd of NO_x emission reductions for attainment by November 15, 2007. Should the mid-course review show that more or fewer reductions are necessary, the commission will submit the revised reduction calculation to EPA for approval. The SIP revision submitted in May 2004 will account for those additional reductions above and beyond the 56 tpd commitment if the mid-course review shows they are necessary for attainment.”

NOx Emission Inventory

ED stated its concern about the use of a VMT mix that understates emissions from the LDGT2 and HDGV categories in MOBILE5. The commission assumes the current vehicle age will not change between now and 2007. The commission should account for the higher VMT from LDGT2 in the real world and a LDGT2 fleet that will surely age between 2001 and 2007.

ED commented that the commission should clarify the difference between the NOx emissions attributed to oil and gas production as an area source and the oil and gas component of the non-road emissions inventory.

ED suggested that the commission check the amount of NOx emissions assigned to locomotives because Figure 2 of the TSD indicates 42.7 tpd in 2007, which appears to be much higher than previous SIPs.

The commission disagrees with the commenter. The commission is, in fact, addressing this category with a new contract. The new number is indeed a significant increase, but is derived from recent credible data. Alternative estimation techniques, like freight ton-miles vs. fuel consumption

methods, will be analyzed and compared. An improved estimate should result and be incorporated into all future modeling.

The emission changes described in the proposed SIP revision were all based on scientifically valid survey methods and reviewed by EPA Region 6. No emissions were changed arbitrarily. The proposed SIP revision cites ambient VOC/NO_x ratios to provide independent evidence that the model changes were valid. During the course of developing the HGA SIP, the commission has made numerous improvements to the modeling inventory, several of which have increased emissions.

Suggested Measures to Fill the Gap

Good Company asked the commission to consider additional emission reductions strategies such as Green Plus. Green Plus is a non-metallic and non-mutagenic fuel combustion catalyst available that may have the potential to reduce NO_x emissions by more than emulsified diesel, at less expense and improved diesel engine performance. Emission test should be completed by fall of 2002. The combustion catalyst will also be compatible with other emission control technologies and has demonstrated dual emission reducing effects in gasoline powered vehicles.

Good Company suggest that the commission consider supporting low cost emission control retrofit devices that reduce NO_x, HC, and CO by 15-30 percent in gasoline and diesel engines produced Emission Technology. These devices will be compatible with other control devices and potentially offer further reductions. One such technology was recommended by the Texas Council for Environmental Technology technical review committee for funding to pay for FTP testing in gasoline engines.

The commission appreciates the comments and continues to evaluate emerging technologies as part of the MCR. The commission intends to adopt technologically feasible emission reduction strategies approved by EPA as needed.

The City of Houston commented that EPA had concluded that the HGA may earn up to 3tpd in NO_x equivalents through sound urban heat island measures. The City of Houston urges the commission to incorporate this initiative into the SIP.

One individual commented that the commission should consider prohibiting the demolition of forests because foliage helps clean the air and cool the earth.

Heat island reduction measures are fundamentally different from other kinds of control strategies. In the past, anthropogenic emissions were singled out as the only factors affecting ozone that could be controlled. The heat island reduction strategy hypothesizes that ozone can be controlled by changing the physical characteristics of the city. It is likely that the ambient temperatures in a city can be decreased by altering the reflectiveness of urban surfaces, and by planting many trees. By lowering temperatures, a decrease in electricity consumption may be expected during the ozone season.

When an area is urbanized, the ambient temperatures go up. Researchers at Lawrence Berkeley National Laboratory have shown that urban temperatures can be reduced by changing the reflectivity of roofs, pavements, and other surfaces, and by planting trees on a large scale. Trees affect the ozone concentration in several ways. The shade provided by trees cools urban surfaces, and can reduce the need for air conditioning, which could reduce electricity consumption. By intercepting sunlight with their leafy canopy, trees absorb solar energy that would otherwise heat

up surfaces. The trees use the solar energy in photosynthesis, and also in evaporating water from their leaves, thus further cooling the air. The reduced urban temperatures can in turn decrease emissions that are temperature-dependent, such as evaporative organic compound emissions from sources such as automobile gasoline tanks, and biogenic emissions from trees themselves. Lower temperatures may also slow down the chemical reactions that create ozone. Leafy canopies also directly absorb ozone and nitrogen oxides in a process called dry deposition. All of these processes could decrease ozone concentrations.

However, there are a few other effects of tree-planting that must be considered as well. For example, reducing the urban temperatures may decrease the mixing height in the lower levels of the atmosphere, and may decrease wind speeds by decreasing the differences in temperature between urban and rural areas, and between land surfaces and bodies of water. These meteorological effects could counteract the beneficial effects of temperature reduction. Another possible problem may arise from planting certain species of trees which emit large amounts of reactive organic compounds. A few genera of trees (oaks, sycamore, sweetgum, cottonwood, willows) have been found to emit 10-100 times more VOCs than lower-emitting species such as pecan, magnolia, pine, or hickory.

The overall result of heat island reduction measures must be determined by considering all of the individual effects. Each effect must be quantified, and interactions between the many effects must also be considered. Unfortunately, it is exceedingly difficult to quantify the impact of measures such as large-scale tree planting, converting traditional lawns to native vegetation, and other measures that alter the land surfaces of the city. Some of the efforts to quantify the air quality effects of heat island reduction measures (HIRM) (specifically, increasing the albedo of urban surfaces and tree-planting) are discussed below.

In the most recent state-of-the-science modeling study, Nowak et al. (2000) found that increasing tree cover from 20% to 40% in urban areas of the Mid-Atlantic states resulted in an average of only 1 ppb decrease in hourly ozone concentrations. Taha (2000), in a study for EPA, found that modeled air quality benefits for Baton Rouge, Salt Lake City, and Sacramento varied greatly by city, with Baton Rouge and Salt Lake City showing little benefit, and Sacramento showing large benefits and disbenefits in different parts of the city. Hudeschewskyi and Douglas (2000), in another study for EPA, also showed both modeled benefits and disbenefits in their study of the New England states. Although Cardelino and Chameides (1990) found ozone benefits for a study they performed for Atlanta, these researchers used modeling tools that are no longer state-of-the-science. For example, they used a simple box model, OZIP, instead of a more realistic photochemical transport model such as UAM, CAMx, or MAQSIP. To calculate biogenic VOC emissions, they used the Tingey algorithms instead of the Guenther algorithms; the latter have been generally recognized as more accurate since the mid-1990s. Likewise, Taha (1996) showed ozone benefits in Los Angeles from applying HIRM, but used UAM-IV, a photochemical model that is no longer state-of-the-science. SCAQMD recently commissioned Environ International to perform a modeling study to evaluate the possible air quality benefits of HIRM in Los Angeles. Environ found that the benefits modeled for Los Angeles were so slight that no recommendations could be made regarding the effectiveness of HIRM as an air quality improvement measure. The results from these studies are quite mixed, and do not consistently show that large-scale tree-planting would be an effective control strategy. However, it is also clear that

1. **Modeling results from one city probably cannot be applied to other cities, due to the uniqueness of each city's physical form and climatology; and**
2. **The current state-of-the-science modeling tools have been used in only one published study so far.**

Based on the discussion above, the commission believes that although tree-planting programs are beneficial to a community in many ways, their effectiveness as a strategy for reducing ozone has not yet been proven. The commission will continue to work with local government and non-profit organizations to educate the public about which tree species and planting strategies are most likely to benefit local air quality.

PAC and two individuals support a rail system for Houston and its surrounding counties.

Effective mass transit systems are an essential component of transportation planning for the HGA nonattainment area. However, the ultimate decisions regarding the most appropriate mix of transit alternatives lies with those local entities. Mass transit planning is a component of the commute solutions measures implemented by HGAC, and included in the VMEP portion of this SIP.

One individual commented that the commission should consider eliminating drive through windows at liquor stores, fast food restaurants, and banks.

The commission appreciates the commenters' suggestion; however, because of the many issues related to this strategy's potential air quality benefits, the commission has chosen not to include this strategy at this time.

One individual suggested that the commission ban all burning in Harris County.

Chapter 111 of the commission's rules specifies the conditions under which outdoor burning can take place in the state. Outdoor burning for land-clearing or maintenance purposes may be allowed, provided that these conditions are met. Coastal salt-marsh management burning may also be allowed in specified counties, under the restrictions contained in the rule. Commission rules generally prohibit outdoor burning, with very limited exceptions. If citizens observe outdoor burning they believe is not properly authorized, they are encouraged to call the commission's regional office for their area, or the commission's state-wide toll free complaint line at 1-888-777-3186 to report the event. Commission policy is to investigate complaints based on a priority system. The commission has considered the emissions from the limited amount of outdoor burning that is authorized in the area emissions inventory and the modeling of the HGA.

One individual suggested that emissions from ships entering and existing the port should be controlled. City of Houston Council Member Sekula-Gibbs commented that emissions from diesel engines need to be addressed and one individual suggest that emissions from 18 wheeler trucks be controlled. Three individuals suggested that emissions from airplanes be addressed. One individual suggest that emissions from the construction equipment building the light rail be considered.

The commission is preempted by the federal government from requiring emission controls on vessels and airplanes and establishing engine standards. However, the Commission has worked with local entities to develop voluntary strategies via agreements that target emission reductions from these sources. In addition, TERP was designed to reduce emission from existing diesel engines

and other equipment through financial incentives. Therefore, it is possible for the state to achieve emission reductions from airplanes, vessels, construction equipment and other diesel sources.

One individual suggested addressing poorly maintained vehicles.

The vehicle inspection maintenance program is designed to identify high emitting vehicles and require the appropriate repairs.

Two individuals suggested a rebate program for cleaner lawn equipment.

Under the current SIP, commercial lawn/garden operators can submit an alternative plan to the commission exempting themselves from the commercial lawn and garden restriction. These alternative plans may utilize cleaner lawn equipment to achieve equivalent emission reductions. An explicit rebate program for using clean lawn equipment would most likely be best managed at the local level.

One individual commented that tax incentives should be offered for hybrid vehicles.

The Commission has no authority to establish tax incentives through the SIP. Those types of measures are under the purview of the Legislature. It should also be noted that the use of a hybrid vehicle does not automatically mean that there is an emission reduction available that could be attributed to the SIP. Manufacturers of hybrid vehicles have not obtained EPA certification of those vehicles at lower emission levels.

One individual suggested the following strategies: 1) Reduce NOx particulates for nonroad construction equipment by using cleaner burning fuels and retrofitting existing engines. Require TxDOT to specify in contracts that cleaner fuels and engines have to be utilized. 2) Require annual electric lawnmower programs that have a retirement component for gas-powered lawnmowers. 3) Adopt a smoking marine engine program and fine violators. 4) Require marine vapor recovery and a program that would limit marine engine idling. 5) Adopt a program that reduces or at least reduce future increase of vehicle miles traveled by major employers. 6) Require truck stop electrification and other cost-effective measures that will reduce idling of onroad, heavy-duty diesel trucks. 7) Require paint and body shops to use paints with lower VOC contents.

The commission appreciates the valuable suggestions offered by the commenter and will continue to evaluate potential control measures as part of the MCR.

Regarding #1, the TERP program was designed to reduce emissions from construction equipment through voluntary financial incentives. TxDOT is currently evaluating the use of PuriNOx as an alternative fuel and its air quality impact. For additional information on TxDOT environmental initiatives, please contact Bill Jordan of the Environmental Affairs Division at (512) 416-2690.

Regarding # 2, under the current SIP, commercial lawn/garden operators can submit an alternative plan to the commission exempting themselves from the commercial lawn and garden restriction. These alternative plans may utilize cleaner lawn equipment to achieve equivalent emission reductions. An explicit rebate program for using clean lawn equipment would most likely be best managed at the local level.

Regarding #3 and #4, the state is federally preempted from regulating emission standards on marine vessels. However, the commission already requires marine vapor recovery and is continuing to work with local entities to develop voluntary agreements to reduce marine vessel emissions.

Regarding #5, the HGA SIP includes the Voluntary Mobile Emission Reduction program, which aims to reduce emissions through a variety of measures. One such strategy is Commute Solutions which seeks to promote alternative modes of travel to work thereby reducing vehicle miles traveled.

Regarding #6, the state has adopted a heavy duty vehicle idling restriction, but intends to explore truck stop electrification as a means of further reducing emissions from idling trucks.

Regarding #7, the commission has already adopted rules as part of the HGA SIP that require paint and body shops to use paints with low VOC contents.

One individual commented that the commission should consider eliminating day light savings time, because it contributes to smog.

The United States Department of Transportation has jurisdiction over DST in this country. DST was established nationwide by the Uniform Time Act of 1966. States or portions of states may be exempted from the federal requirement only by legislative vote in those states. Currently, the entire state of Texas observes DST, and any changes to this program would require action by the State Legislature.

Enforceable Commitments

Sierra-Houston commented that the commission has proposed to back end load the emission reductions associated with the 56tpd shortfall so they do not become effective until 8 months prior to the attainment deadline and two months before the summer ozone season begins.

The commission maintains that it committed to submit to EPA adopted rules as a SIP revision, achieving at least the 56tpd gap of the NO_x emission reductions, as expeditiously as practicable but no later than May 2004. The implementation of these measures will be as expeditious as practicable *but no later than 2007*. The majority of NO_x emission reduction strategies currently adopted in the SIP are scheduled to be implemented by 2005. As part of this SIP revision, the commission is adopting the TERP to achieve 14tpd of the 56tpd gap. Funding of TERP projects has begun and the associated emissions benefits are being realized.

Sierra-Houston commented that enforceable commitments are illegal and not allowed under the FCAA and that the FCAA requires all emission controls be in the SIP and that they be enforceable and implemented. Sierra-Houston also commented that the controls listed as enforceable commitments do not exist and there are no rules proposed. Therefore, this SIP is deficient by FCAA standards and the SIP must be rejected and sanctions must be applied.

The commission disagrees with the comments. As stated in Section 7.1 of the SIP, “EPA has recognized that in some limited circumstances, it may be appropriate to issue a full approval for a submission that consists, in part, of an enforceable commitment. Unlike the commitment for conditional approval, such an enforceable commitment can be enforced in court by EPA or citizens.

In addition, this type of commitment may extend beyond one year following EPA's approval action. Thus, EPA may accept such an enforceable commitment where it is infeasible for the state to accomplish the necessary action in the short term." EPA, in its approval of the HGA SIP stated that its position is both consistent with past practice and that the Act allows approval of enforceable commitments that are limited in scope where circumstances exist that warrant the use of such commitments in place of adopted measures.

Sierra-Houston commented that the SIP states "The low range of the estimated reductions." This statement is incorrect because there is no range. Adequate modeling, analysis, assessment and evaluation have not been conducted to provide for accurate emission reductions or a range of possible reductions. The enforceable commitments make no firm commitment to promulgate rules stating that emission reductions should be expected. This is not sufficient for an attainment demonstration and should be rejected by EPA.

Sierra-Houston opposes the use of Voluntary Stationary Emission Reductions being listed as control measures because they are voluntary and not enforceable.

Sierra-Houston agrees with the Commission that VMT must be reduced, however no rules for implementing such a strategy have been implemented.

Sierra-Houston commented that the fuel cell strategy will not result in emission reductions. A rule that requires fuel cell use and quantification of the emission reductions achieved through this measure are needed.

GHASP acknowledges that some limited progress has been made on fuel cells.

GHASP commented that RAQPC has assessed the prospects of the commercial and residential air conditioning ozone reduction system and is likely to report that it has no prospect of reducing ozone in the near future. This measure should be removed from the plan.

The commission has committed to submit a formal mid-course review to EPA by May 1, 2004 to include a thorough evaluation of the modeling. This review will allow the commission to incorporate advanced photochemical modeling and to further improve the science behind the SIP inventory data and other tools and assumptions used to develop the SIP. Enhancements to the photochemical modeling will include state of the science meteorological modeling, updated emissions inventories, improved ozone chemistry and new mobile source utilizing MOBILE6. The MCR review will also reevaluate control measures, the transportation conformity budget, and the shortfall. The commission will continue to evaluate new approaches to photochemical modeling, and will strive to make improvements to existing models and input data in a timely manner. Moreover, the MCR will assess to-be-considered control measures listed in Chapter 7 of the SIP. It will also include an ongoing assessment of new technologies and innovative ideas. This plan in its totality, including the control measures identified in Chapter 6 of the SIP plus the process described as part of the MCR will achieve attainment. The commission is committed to working with other entities concerned with air quality and transportation issues in the HGA as part of the MCR process.

GHASP commented that based on available information, the commission appears to have done little or no work on the potential control measures list in Chapter 7. It stated that some of these measures are partly

addressed through the TERP. GHASP commented that there appear to overlap with the VMEP. Progress on these strategies through these programs is acknowledged (to a limited extent) but should not be double-counted as a separate measure. GHASP urges the commission to update the public on its progress (if any) towards implementing these gap measures as committed. It also commented that it is uncertain whether progress has been made on the episodic control gap measure. GHASP had understood it to mean exactly the sort of controls that are being proposed for Chapter 117 by the commission. It urged the commission to clarify the distinction and to update the public on its progress (if any) towards implementing the episodic control gap measure.

The commission disagrees with comments. The commission has participated in the HGA RAQPC Policy subcommittee meetings where the enforceable commitments are discussed. Additionally staff evaluates the feasibility of potential strategies on an on going bases. Moreover, the MCR will include an assessment of the to-be-considered control measures listed in Chapter 7 of the SIP. The commission recognizes that several measures have been identified to reduce emission from similar sources and that there is the potential for overlap with the emission reductions from some of these sources. The commission is developing the proper protocol to assure that no double counting of reductions occurs and that these emission reductions are accounted for appropriately. As part of this equivalency determination, the commission is exchanging point source NOx emissions for HRVOC point source emissions to address high ozone events. However, as part of the MCR, the commission will consider additional HRVOC controls if additional emission reductions are necessary and the best scientific evidence indicates that HRVOC reductions are the most effective means to reduce ozone concentrations.

One individual commented that annual vehicle registration should be tied to the amount of pollution the vehicle emits, possibly even the number of miles driven.

The commission agrees that this may be one way to get cleaner vehicles into the fleet. However, the commission does not have the authority to regulate vehicle registration fees. The local planning organization is facilitating programs to reduce vehicle mile traveled through VMEP programs.

Two individuals supported transportation related control measures.

The commission has adopted transportation control measures and a voluntary emission reduction program. Both of these strategies aim to reduce emissions attributed to vehicular traffic.

Enforcement

MfCA and Sierra-Houston commented that proper enforcement is necessary and should be included in the plan along with appropriate funding.

Sierra-Houston further commented that there is already a shortage of enforcement personnel and that is an issue not discussed in the SIP and there are no resources to implement the SIP.

GHASP also noted that although the diesel idling rule is in effect, there is apparently no enforcement. If the commission does not intend to have this rule enforced, it should revise the plan accordingly and withdraw the 0.48 tpd credit for NOx emission reductions.

Five individuals asked the Commission to enforce the existing rule.

One individual commented that the current regulations should be enforced more effectively.

The commission rules are enforced by staff in the commission's regional offices, as well as local air pollution control programs. Local governments have the same power and are subject to the same restrictions as the commission under TCAA, §382.015, Power to Enter Property, to inspect the air and to enter public or private property in its territorial jurisdiction to determine if the level of air contaminants in an area in its territorial jurisdiction meet levels set by the commission. Local governments are not required to enforce commission rules, but may sign cooperative agreements with the commission to enforce the rules under TCAA, §382.115, Cooperative Agreements. Local programs can also enforce commission rules without signing a cooperative agreement. The authority of local governments to enforce air pollution requirements is specified in detail in TCAA, §§382.111 - 382.115, and local governments can institute civil actions in the same manner as the commission pursuant to Texas Water Code, §7.351.

The commission will work with local officials to ensure enforcement of the SIP and associated rules. The commission has existing relationships with pollution control authorities in the City of Houston, Harris County, and Galveston County for enforcement of other commission rules. The agency will continue enforcement relationships with these entities and develop relationships with other local officials as needed to create effective enforcement mechanisms for the SIP and SIP rules.

In order for the SIP to be effective and to receive EPA approval, the control measures contained in the SIP must be enforceable. Adequate enforcement authority and measures exist to satisfy this requirement. As part of each rule proposal and adoption, the commission reviews its statutory authority to adopt such a rule, and believes that all measures contained in the HGA attainment demonstration SIP are within the commission's authority.

8-Hour Ozone Standard and PM 2.5

MfCA urges the commission to consider the long term consequences of this proposal. This area will need to attain the 8-hour ozone standard in the future and may need to address the PM 2.5 standard.

This SIP, which will demonstrate attainment with the one-hour NAAQS, will achieve significant progress toward meeting the eight-hour ozone standard and fine particulate matter standard.

Other

EPA also commented that care should be taken to provide an adequate notice and comment period because the proposal states that additional refinements and improvements may be included in the SIP revision.

The proposed SIP and associated rules explained the commission's intent to further refine the photochemical model and expand upon the supporting analysis. For the past 6 months, staff have analyzed various compounds and their impact on ozone formation in the HGA to determine if a NOx to VOC switch was viable. This intent was stated as part of the proposal and now the scientific evidence indicates that this will be an effective ozone reduction strategy. Nothing being considered for adoption by the commission in any way contradicts what was proposed in June 2002 nor does it affect additional segments of the regulated community. Additionally, the model performance process and input improvements were continually updated and available publicly on the agency web site.

GHASP and one individual commented that the commission should consider what effect the diesel defeat device settlement and recent reports that the rebuild program is not achieving expected results is likely to have on area emissions and whether any local programs could help address the resulting emission reduction shortfall.

Effectiveness of the diesel defeat device rebuild program is beyond the scope of this SIP revision. However, the commission continues to evaluate the potential for local initiatives to support the defeat device rebuild program. This issues will be addressed as part of the MCR.

GHASP commented that the commission's adopted plan claims 5.7 tpd of NO_x reductions based on a VOC equivalency argument. As discussed elsewhere in these comments, the technical basis for such a calculation is questionable. These calculations were done prior to the availability of reactivity and production based VOC data drawn from air monitoring in Houston, and simply reflect a generic VOC to NO_x equivalency argument. This generic calculation is now technically outdated, and the commission should revise this calculation based on an appropriate VOC speciation profile, or withdraw the calculation.

The commission assumes that GHASP is referring to 1.14 tpd of NO_x credit calculated from general VOC reductions and the 4.6tpd of NO_x equivalents associated with the lawn and garden restriction. This SIP revision was developed primarily to prove that HRVOC emission reductions can be substituted for a portion of point source NO_x emissions. At this time, the commission has not completed an assessment to determine if exchanging generic VOC emission reductions for NO_x emission reductions will be permitted. It is the commission's intent to demonstrate attainment based on the best scientific evidence available regarding ozone formation. As part of the MCR, all control strategies included in the SIP will be evaluated.

One individual commented that pollutants from industrial sources also contribute to global warming.

The commission agrees that pollutants from industrial sources can potentially contribute to global warming. However, such regulation is beyond the scope of this SIP revision since global warming is not being address as part of the Houston attainment demonstration SIP.

One individual commented that the commission should create a contest where people/companies submit ideas for how to reduce pollution and to recognize participation in the contest.

The commission sponsors the Environmental Excellence Awards which recognizes companies, governments, individuals, and other entities that initiate unique environmental solutions.