

**FINAL REPORT:**

**Analysis of EPA Policy Development on the 8-Hour Ozone and PM 2.5 Standards**

**SUBMITTED TO: Houston Advanced Research Center**

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## FINAL REPORT

### **Background:**

During the term of this contract with Houston Advanced Research Center (HARC), Mr. Seitz was to track and report on the activities of the Environmental Protection Agency (EPA) as they developed guidance and rules for the implementation of the new 8-hour ozone standard. Mr. Seitz accomplished this task by attending various EPA meetings such as the Clean Air Act Advisory Committee and meetings of an EPA work group designed to respond to a National Academy of Science Report on the future of air quality management in the United States. In addition, Mr. Seitz routinely contacted EPA staff and offices concerning 8-hour ozone implementation issues. During the period of this portion of contract, Mr. Seitz filed 8 monthly reports summarizing the activities during the previous month. The reports covered the months of December of 2004 through July of 2005. Although the contract mentioned particulate matter (PM) implementation, there were no major PM fine actions taken by EPA during duration of the contract and there are currently no PM nonattainment areas within Texas.

### **EPA 8-Hour Ozone Actions:**

During the period of the reports, the significant actions taken by EPA are discussed below.

#### *Phase I Ozone Rule*

This rule set out the general requirements for classifications, attainment dates, major source levels, anti-backsliding provisions and various other general Clean Air Act (CAA) requirements. Other than attainment dates (Dallas/Fort Worth 2010, Houston 2010 and Beaumont/Fort Arthur 2007), the majority of the material in the rule is information that will be needed by Texas Commission of Environmental Quality (TCEQ) as they put together the general requirements of the attainment SIP. The attainment dates are important to the modeling research because these are the dates that attainment would have to be achieved.

#### *Draft Modeling Guidance*

In March, EPA issued draft model guidance for the 8-hour attainment demonstrations. The guidance made some significant modifications from the 1-hour ozone model guidance in terms of trying to move toward the use of other air quality-related data such as monitoring data to support the attainment demonstrations. In addition, the guidance proposed the use of data that represented average ozone values rather than worse case. The changes in guidance were in response to changes made to the 1-hour ozone weight of evidence guidance and to respond to recommendations made in response to National Academy of Science report on Air Quality Management in the United States. The guidance is expected to be finalized at the same time as the Phase II 8-hour ozone rule.

### *Clean Air Interstate Rule (CAIR)*

The EPA finalized CAIR on March 10, 2005. The rule requires reductions of nitrogen oxide (NO<sub>x</sub>) and sulfur oxide (SO<sub>x</sub>) to address interstate transport of precursors to ozone and PM fine. In connection with the final rule, EPA also published their model results that showed that neither Dallas nor Houston would attain by their attainment date of 2010. The model results for 2015 showed that Dallas would attain the standard and Houston would remain nonattainment. The model results should be of interest to the researchers doing modeling in support of the HARC research agenda as well as TCEQ as they proceed to develop the 8-hour ozone SIPs. The data being generated in support of the HARC research agenda should be used in conjunction with the EPA model results by TCEQ in determining what course of action they may want to pursue in conjunction with the attainment SIPs.

### *Failure to Submit Transport SIPs*

On April 25, 2005, EPA published a Failure to Submit Notice to all states (including Texas) that have attainment areas that may impact a nonattainment area's ability to attain the ozone standard. The Notice requires that the designated state submit a SIP for the attainment area that addresses transport. A state attainment SIP that complies with the provisions of the CAIR rule would be presumed to be approvable by EPA. These SIPs must be approved by 2007.

### *EPA Proposed FIP and Action on North Carolina Section 126 Petition*

On August 1, 2005, EPA proposed a Federal Implementation Plan (FIP) implementing the CAIR rule and also proposed to deny the State of North Carolina's Section 126 Petition. The FIP is intended to ensure that emission reductions of NO<sub>x</sub> in 28 states address the interstate transport of ozone precursors. The rule proposes a cap and trade program for NO<sub>x</sub> similar to the program in place for the CAA acid rain program. States have the option either to allow the FIP to govern the sources in their state or adopt a similar program in the State SIPs and the FIP would be withdrawn. States also have the option to make minor changes to the program in the FIP and EPA would take action to incorporate these adjustments into the FIP.

In addition, EPA proposed to deny North Carolina's petition to obtain further reductions in NO<sub>x</sub> from sources outside of North Carolina. EPA proposed to deny the petition on the grounds that the CAIR adequately addressed the interstate transport of ozone and EPA model results indicated that North Carolina nonattainment areas would attain the standard. As I discussed during the SAC meeting, any new petition under 126 would have to use criteria that are different from the criteria used by EPA in their analysis. For instance, source specific criteria could be considered. There was a public hearing on both of these rules on September 14, 2005 on both of these actions and I hope to attend. Additional information on both of these actions can be found at <http://www.epa.gov/air/oaqps/oaqnew.html>.

### *Proposed Phase II Ozone Rule*

The Phase II ozone rule had not been finalized by EPA at the conclusion of the initial terms of the contract. The Phase II rule was finalized on November 29, 2005 and a copy of the presentation material being used by EPA is attached.

### *AQM Process*

In response to a National Academy of Science report on Air Quality Management in the United States, EPA has established a process to review and make recommendations for enhancements to the current program and make suggestions for the structure of a future program. The Phase I report made a number of recommendations that covered both the current agency regulatory processes and better use of environmental data and risk management. The recommendations and the Phase I report were provided with a monthly report and should be useful to both TCEQ and the HARC researchers.

### **Summary of Findings:**

This summary is based on the information discussed above and the final ozone implementation rule that was issued by EPA on November 29, 2005 (Note: this rule was just issued and was outside of the normal reporting period of the contract; however, I felt that the referenced attachment, based on limited review, serves to support the findings in this section.) The actions taken by EPA during the period of this contract can be broken down into three major areas of interest for HARC. Those areas are:

- A. Transport - How will EPA deal with transport under the 8-hour ozone standard?
- B. Ozone Modeling - How has EPA modified the guidance for attainment demonstrations?
- C. Attainment Demonstrations/SIPs - How is EPA dealing with the nonattainment areas under the 8-hour standard?

Each of these areas is discussed below.

### *Transport*

In conjunction with the NO<sub>x</sub> SIP call, the CAIR rule and the proposed FIP, EPA seems to have signaled that they have addressed ozone transport caused by NO<sub>x</sub> emissions from utility boilers. This conclusion is based on the discussion found in the EPA response to the North Carolina 126 petition which was responded to in the same action where the NO<sub>x</sub> FIP was proposed. The action is discussed above. Any future 126 petition to address interstate transport will have to be based on significant contribution criteria different than the criteria used by EPA in support of the NO<sub>x</sub> SIP call or CAIR. Any modeling data or contribution data generated by HARC research should focus on a different test (perhaps, specific sources) and be closely coordinated with TCEQ. In addition, EPA will consider any intrastate transport (Houston to Dallas) to be under the control of the overall state SIP planning process.

### *Ozone Modeling*

EPA published draft model guidance in March and finalized the guidance in connection with the final ozone rule which was published on November 29, 2005. As discussed above, the

guidance is intended to move toward the use on more supporting data such as monitoring data and the use of meteorological data that is more representative of normal conditions rather than the worse case situation. In cases where the model is showing attainment in all but a few locations, state programs can use other data to address these areas. In addition, I understand that EPA is planning on having a meeting in early 2006 to discuss the results of EPA's most recent model runs and that states will have the option to use EPA model results in their attainment demonstrations. HARC scientists, running model analysis, should continue to track closely these activities within EPA. If EPA does in fact publish updated model analysis, these results may inform the boundary conditions to be used in models runs done in support of HARC workplans. If EPA does publish revised model runs and suggest they can be used by state agencies in their attainment demonstrations, HARC should be prepared to brief TCEQ on the pros and cons of the various model runs produced by TCEQ, EPA and HARC programs. These various models could be very useful to TCEQ in their efforts to produce attainment demonstrations.

#### *Attainment Demonstrations/SIPs*

The Phase I and II ozone implementation rules (Phase II finalized on November 29, 2005) set forth the ozone planning requirements for state and local program SIPs. The final Phase II ozone rule sets forth requirements for such programs as Reasonably Available Control Technology (RACT), Reasonable Further Progress and Fifteen Percent planning. A copy of an EPA presentation summarizing the rule is attached to this report. The Dallas and Houston nonattainment areas will be subject to all of these requirements.

My initial review of the document indicated that there were not many changes between the proposed and final rules. EPA once again, in an effort to support CAIR, declared that compliance with CAIR satisfied the RACT requirements. The major issue for the HARC research agenda will be to provide data to TCEQ that enables them to develop an attainment SIP. If attainment cannot be demonstrated by 2010 - 2012 (assumes 2 one-year extensions), TCEQ will have to request a bump up or build a very strong case as to why a longer extension is appropriate because of federal measures. This will be a very difficult demonstration if the Houston or Dallas inventories indicate emission sources that are reasonable to control. A summary of the model results and inventory analysis may be very helpful to TCEQ.

One major area that TCEQ may wish to consider and where the various model runs produced for HARC may be of assistance, is the development of two alternative attainment scenarios for the new 8-hour ozone standard. The first demonstration would project attainment by the prescribed CAA date and list those measures that would have to be adopted to attain. As in the Houston one hour demonstration, the list of measures probably would not be cost-effective, politically realistic and could present enormous implementation problems. The second demonstration or scenario would project attainment at a later date (presumably the next CAA classification date) and list those measures that would be required to attain. The purpose of these different demonstrations would be to initiate a dialogue between TCEQ, EPA and the other stakeholders to put in place a demonstration that was more cost-effective, had more community support and could be implemented in partnership with EPA. To develop these two

demonstrations and have a successful dialogue with the stakeholders would require the use of the data generated for HARC to demonstrate the scientific creditability of the final demonstration.

In summary, while EPA has relaxed some of their planning requirements, the basic SIP planning process for Dallas and Houston will be very similar to the planning for the previous standard and the data being generated under the various HARC research efforts should be summarized in a manner that is supportive of the SIP process.

**Attachments:**

The following documents were provided during the period of this contract.

- EPA's Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone
- Title 40, Chapter I, of the Code of Federal Regulations
- Clean Air Interstate Rule (CAIR), 3/05 PowerPoint Presentation
- Ozone Modeling Guidance Update, 3/1/05 PowerPoint Presentation
- Draft Vision and Principles, 3/18/05
- CAAAC Matrix 4/05 Meeting
- AQM Subcommittee Meeting Questions, 6/16-17/05