

May 11, 1989

MEMORANDUM

SUBJECT: Issues Associated With Modeling Background Sources

FROM: Joseph A. Tikvart, Chief
Source Receptor Analysis Branch, TSD (MD-14)

TO: Regional Modeling Contact
Regions I-X

As you recall, at the May 1988 Regional Office/State Modelers Workshop we again discussed issues associated with the modeling of background sources. The major issues were:

1. the frequent identification of existing NAAQS problems when such sources are modeled according to current guidance and,
2. a sometimes significant resource burden associated with acquiring model input data for modeling such sources.

As an action item from the 1988 Workshop (see June 23, 1988, SRAB Summary of the Workshop), we agreed to raise these issues to AQMD Management for their consideration from a policy standpoint. This was done on August 29, 1988; see Attachment 1, memorandum from W. Laxton to J. Calcagni. Since that time, there have been numerous internal OAQPS discussions and discussions with the Regional Offices on various options for resolving these issues.

We have now received the final response memorandum from AQMD, which we are forwarding to you as Attachment 2. Questions on interpretation of this Attachment should be directed to Doug Grano at (FTS) 629-5255.

2 Attachments

cc: D. deRoeck, MD-15
D. Grano, MD-15
W. Laxton, MD-14
S. Reinders, MD-14
M. Smith, MD-15
D. Wilson, MD-14
Technical Support Branch, Chief, Region I
State Air Programs Branch, Chief, Region I
Air Program Branch, Chiefs, Regions II-IV and VI-X
Air and Radiation Branch, Chief, Region V

(Attachments Following)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

May 3, 1989

MEMORANDUM

SUBJECT: Identification of New Areas Exceeding the NAAQS

FROM: John Calcagni, Director /s/
Air Quality Management Division (MD-15)

TO: William Laxton, Director (MD-14)
Technical Support Division (MD-14)

This is in response to your earlier request for our consideration of two modeling related State implementation plan (SIP) issues. Specifically, the two issues are: (1) approval of a proposed SIP emission limit for a source under consideration when there are modeled violations of the national ambient air quality standards (NAAQS) due to nearby background sources in the surrounding area, and (2) the resource burden associated with assembling the data necessary for modeling the background sources. This memorandum restates the existing policy developed by the Model Clearinghouse and discusses limited exceptions to the policy.

SIP Approvals

Our general policy may be summarized as follows:

1. Background concentrations are an essential part of the total air quality concentration to be considered in determining source impacts. Nearby sources which are expected to cause a significant concentration gradient in the vicinity of the source under consideration should be explicitly modeled (as "background" sources).

2. Under section 110 of the Clean Air Act, each SIP must provide for attainment and maintenance of the NAAQS. Where background sources are found to cause or contribute to a violation, a SIP revision for the source under consideration generally should not be approved until each violation in the modeled Region is prevented or eliminated through the SIP rules. This policy avoids approval of a SIP revision which does not provide for attainment throughout the modeled area.

I also recognize that section 110 allows for approval of portions of SIPs. Therefore, exceptions to the general policy may be warranted in certain circumstances. Before any exception will be considered, it must be clearly shown that the SIP would be improved as a result of the partial approval. As a minimum, the following factors should be considered in determining exceptions to the general policy:

1. Approval would not interfere with expeditious attainment (i.e., emissions from the source under consideration do not cause or contribute to the modeled violation).

2. There would be an environmental benefit (i.e., the SIP revision would result in an actual emissions decrease and ambient air quality improvement).

3. Enforcement of the SIP would be improved (e.g., without approval there would be no federally enforceable measure for the source under consideration or ambiguities in the previous limit serve to frustrate enforcement efforts).

Where it is found that an exception should be made based on the above factors, we expect the proposed approval notice to specifically identify the background source violations and clearly state that the State retains an obligation to take action expeditiously to correct the background violations. The final approval notice for the source under consideration should not be promulgated before the State acknowledges the background violations and submits an acceptable schedule for corrective action. The schedule would then be included in the final notice as the State's response to EPA's identification of violations. A SIP call pursuant to section 110 (a)(2)(H) should be issued where a State fails to acknowledge its obligation and submit a schedule for resolution of violations during the comment period.

Resources

The resource burden associated with assembling the necessary data and modeling the background sources has been extensively discussed through the Model Clearinghouse and annual modelers' workshops. I believe that the resource burden associated with modeling background sources using current modeling guidance need not be as great as it potentially appears.

The Guideline on Air Quality Models (Guideline) states that the nearby (background) source inventory should be determined in consultation with the local air pollution control agency. Specifically, the Guideline states that "The number of (background) sources is expected to be small except in usual situations." In this and in other areas, the Guideline necessarily provides flexibility and requires judgment to be exercised by the reviewing agency. The resource burden may be mitigated somewhat by application of this judgement.

In investigating whether more explicit guidance is needed, my staff has coordinated with the Model Clearinghouse and the modeling and SO2 contacts in each Regional Office. Given the flexibility that is provided by existing guidance and the tendency for more explicit policy to reduce this flexibility, no further guidance was judged necessary. The Regional Offices generally have been able to work with their States to collect sufficient data to support the necessary modeling. Consequently, there was little support for the suggestion to revise the current policy to more explicitly limit the number of sources that should be modeled for downwash.

Conclusion

I believe that an exception to the general policy regarding processing of SIP revisions may be warranted where it is in the best interests of air quality to approve certain SIP revisions notwithstanding the existence of violations due to background sources. However, the affected State retains an obligation to take corrective action in response to any properly conducted analyses which demonstrate a violation. This policy is consistent with the Guideline and Model Clearinghouse actions. My staff is available to assist in application of this policy on a case-by-case basis.

If you would like to discuss these issues further, please call me or have your staff contact Doug Grano at extension 5265.

cc: R. Bauman
R. Campbell
P. Embrey (OGC)
E. Ginsburg
D. Grano
J. Silvasi
D. Stonefield
J. Tikvart
D. Wilson
Air Division Directors, Regions I-X