

M. Koerber



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

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Air & Radiation Branch
U.S. EPA Region V

SUBJECT: Region IV Modeling Survey

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

Robert D. Bauman, Chief *Bob Bauman*
SO₂/Particulate Matter Programs Branch (MD-15)

TO: Bruce P. Miller, Chief
Air Programs Branch, Region IV

We have studied the responses from the other Regional Offices and your States to the several questions you posed, concerning modeling for downwash and background sources. Our general reaction is that the Regions/States, with some minor variations, are following current guidance and the interpretation of that guidance described in my May 29, 1987 memorandum to you on the subject. Your proposals for dealing with the issues, as described in Table I, Part I of your November 12, 1987 memorandum, are, for the most part, a restatement of this current guidance. The comments which follow reflect our reaction to aspects of your proposals which deviate from or attempt to refine the guidance.

Question 1. No Issue. All Regions are following current guidance.

Question 2. Region IV proposes that "SRAB issue a policy statement stating that concentrations from point sources less than 100 meters from the source being modeled should not be used to establish emission limits until such time as the accuracy of these calculations can be verified through field studies." We do not believe that this proposal is appropriate. Prior to revising the guideline models in 1986, EPA received many requests to make the regulatory models consistent among themselves. Since the models developed by ORD, i.e. RAM, CDM and MPTER, had no restriction on location of receptors from the source, we were asked to similarly allow estimates within the 100m limit stated in ISC. When ORD did not recommend inserting this restriction in the other models, the elimination of the 100m restriction in ISC and CRSTER was part of the resolution of consistency issues. No adverse public comments were received on this matter and now all the EPA models are consistent in this aspect. Although our confidence in closein estimates may not be as high as in other situations, we do not believe there is sufficient justification to reverse our action. The limit of "3H_b" on receptor distance from a building should be sufficient indication of our confidence in close-in estimates.

Question 3. No Issue. All Regions are following current guidance.

Question 4. Part of the issue here is what is meant by all sources. Consistent with the resolution of the general issue at the 1987 Regional/State Modelers Workshop, all sources within the significant impact area that are explicitly modeled should be modeled for downwash if their stacks are below GEP height. Current guidance leaves selecting exact locations of receptors to identify critical concentrations to professional judgment; consistent with the modeling guideline, it is unwise to restrict that process. With the statement on receptor placement removed, your proposal becomes a restatement of current guidance.

Question 5. Consistent with the May 29, 1987 memorandum, such sources should only be modeled for downwash if they would cause a significant concentration gradient in the chosen receptor grid. Assuming that the chosen receptor grid is limited to the significant impact area, there would be no need to model such sources for downwash unless they were located in very close proximity to this area. While it is not clear in your proposal what "case-by-case" means, there is nothing in our guidance to preclude exercising the downwash option in other appropriate circumstances.

Question 6. The resolution of this issue should be consistent with Questions 4 and 5. If the source is selected for modeling and if it lies within the receptor grid area, then it should be modeled for downwash, as appropriate. This reflects current guidance. It is unclear whether your proposal is a restatement of this policy.

Question 7. For SO₂, PM, and Pb, the Regional Offices' response pertaining to SIP implementation and SIP deficiency calls under Section 110 of the Clean Air Act for newly discovered nonattainment problems appears consistent with the EPA's guidance document for the Correction of Part D SIPs for Nonattainment Areas, dated January 27, 1984. This document as well as other policy and guidance envisions that EPA's reference dispersion models are adequate to identify air quality problems and the need for corrective action. It should also be noted that, under Section 107 of the Act, a State can request that EPA redesignate the area experiencing ambient attainment problems to nonattainment of the appropriate NAAQS.

Question 8. This question is confusing to us and the other Regional Offices in that it is not clear what is meant by the "modeling area." This term could apply to either the receptor grid area or to the emission inventory area. In either case we do not believe is wise to establish rigid numerical limits on the area as stated in the proposal. We believe the guidance that does exist is adequate in that regard. The October 1980 PSD Workshop Manual states that sources to be considered for modeling can generally be limited to the significant impact area, plus 50 km.

However, not all sources within this distance would be explicitly modeled as indicated in the Workshop Manual on page I-C-18. The guidance on page 9-8 of the Guideline on Air Quality Models can be applied to decide which sources are to be explicitly modeled: "All sources expected to cause a significant concentration gradient in the vicinity of the source or sources under consideration for emission limit(s) should be explicitly modeled."

cc: G. McCutchen
S. Reinders