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

July 5, 1988

MEMORANDUM

SUBJECT: Air Quality Analysis for Prevention of Significant Deterioration (PSD)

FROM: Gerald A. Emison, Director /s/
Office of Air Quality Planning and Standards (MD-10)

TO: Thomas J. Maslany, Director
Air Management Division (3AM00)

Your memorandum of May 9, 1988, pointed out that two different procedures are currently being used by the Regional Offices in certain PSD permit analyses. The inconsistency involves the question of how to interpret dispersion modeling results to determine whether a source will cause or contribute to a new or existing violation of a national ambient air quality standard (NAAQS) or PSD increment. This memorandum serves to resolve the inconsistency by reaffirming previous Office of Air Quality Planning and Standards guidance provided in a December 1980 policy memorandum (attached).

As you know, the regulation for PSD stipulate that approval to construct cannot be granted to a proposed new major source or major modification if it would cause or contribute to a NAAQS or increment violation. Historically, the Environmental Protection Agency's (EPA's) position has been that a PSD source will not be considered to cause or contribute to a predicted NAAQS or increment violation if the source's estimated air quality impact is insignificant (i.e., at or below defined de minimis levels). In recent years, two approaches have been used to determine if a source would "significantly" (40 CFR 51.165(b) defines significant) cause or contribute to a violation. The first is where a proposed source would automatically be considered or contribute to any modeled violation that would occur within its impact area. In this approach, the source's impact is modeled and a closed circle is drawn around the source, with a radius equal to the farthest distance from the source at which a significant impact is projected. If, upon consideration of both proposed and existing emissions contributions, modeling predicts a violation of either a NAAQS or an increment anywhere within this impact area, the source (as proposed) would not be granted a permit. The permit would be denied, even if the source's impact was not significant at the predicted site of the violation during the violation period. You have indicated that this is the approach you currently use.

The second approach similarly projects air quality concentrations throughout the proposed source's impact area, but does not automatically assume that the proposed source would cause or contribute to a predicted NAAQS or increment violation. Instead, the analysis is carried one step further in the event that a modeled violation is predicted. The additional step determines whether the emissions from the proposed source will have a significant ambient impact at the point of the modeled NAAQS or increment

violation when the violation is predicted to occur. If it can be demonstrated that the proposed source's impact is not "significant" in a spatial and temporal sense, then the source may receive a PSD permit. This approach is currently being used by Region V and several other Regional Offices, and is the approach that you recommend as the standard approach for completing the PSD air quality analysis.

In discussing this matter with members of my staff from the Source Receptor Analysis Branch (SRAB) and the Noncriteria Pollutant Programs Branch (NPPB), it appears that different guidance has been provided, resulting in the two separate approaches just summarized. We have examined the history and precedents which have been set concerning this issue. I also understand that this issue was discussed extensively at the May 17-20, 1988 Regional Office/State Modelers Workshop, and that a consensus favored the approach being used by Region V and several other Regions. Based on this input, as well as your own recommendation, I believe the most appropriate course of action to follow is the second approach which considers the significant impact of the source in a way that is spatially and temporally consistent with the predicted violations.

By following the second approach, three possible outcomes could occur:

(a) First, dispersion modeling may show that no violation of a NAAQS or PSD increment will occur in the impact area of the proposed source. In this case, a permit may be issued and no further action is required.

(b) Second, a modeled violation of a NAAQS or PSD increment may be predicted within the impact area, but, upon further analysis, it is determined that the proposed source will not have a significant impact (i.e., will not be above de minimis levels) at the point and time of the modeled violation. When this occurs, the proposed source may be issued a permit (even when a new violation would result from its insignificant impact), but the State must also take the appropriate steps to substantiate the NAAQS or increment violation and begin to correct it through the State implementation plan (SIP). The EPA Regional Offices' role in this process should be to establish with the State agency a timetable for further analysis and/or corrective action leading to a SIP revision, where necessary. Additionally, the Regional Office should seriously consider a notice of SIP deficiency, especially if the State does not provide a schedule in a timely manner.

(c) Finally, the analysis may predict that a NAAQS or increment violation will occur in the impact area and that the proposed source will have a significant impact on the violation. Accordingly, the proposed source is considered to cause, or contribute to, the violation and cannot be issued a permit without further control or offsets. For a new or existing NAAQS violation, offsets sufficient to compensate for the source's significant impact must be obtained pursuant to an approved State offset program consistent with SIP requirements under 40 CFR 51.165(b). Where the source is contributing to an existing violation, the required offsets may not correct the violation. Such existing violations must be addressed in the same manner as described in (b) above. However, for any increment violation (new or existing) for which the proposed source has a significant impact, the permit should not be approved unless the increment violation is corrected prior to operation of the proposed source (see 43 FR p.26401, June 19, 1978; and 45 FR p.52678, August 7, 1980).

Your memorandum also states that other air quality analysis issues exist within the NSR program which need consistent national guidance. You recommend a more coordinated effort between SRAB and NPPB to review outstanding NSR issues. We agree; however, rather than establishing a

formal work group as you propose, we are optimistic that the formal participation of representative of the NSR program in the Modeling Clearinghouse will help resolve coordination problems. Earlier in the year, the Modeling Clearinghouse was officially expanded to include representation from the NPPB to coordinate PSD/NSR issues which have a modeling component.

I trust that this is responsive to the concerns which you have raised. By copy of this memorandum, we are also responding to a Region V request for clarification on the same issue (memorandum from Steve Rothblatt to Joe Tikvart/Ed Lillis, date February 18, 1988).

Should you have any further questions concerning this response, please feel free to contact Gary McCutchen, Chief, New Source Review Section, at FTS 629-5592.

Attachment

cc: Air Division Directors, Regions I-X
Air Branch Chiefs, Regions I-X
D. Clay
J. Calcagni
J. Tikvart
E. Lillis
G. McCutchen
D. deRoeck

United States Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

April 30, 1987

MEMORANDUM

SUBJECT: Ambient Air

FROM: G. T. Helms, Chief /s/
Control Programs Operations Branch (MD-15)

TO: Steve Rothblatt, Chief
Air Branch, Region V

My staff and I have discussed the five ambient air cases which you submitted for our review on January 16, 1987. The following comments are our interpretation of the ambient air policy. However, this memorandum is not a discussion of the technical issues involved in the placement of receptors for modeling.

Our comments on each of the cases follow:

Case 1 (Dakota County, MN): This case involves two noncontiguous pieces of fenced property owned by the same source, divided by a public road. We agree that the road is clearly ambient air and that both fenced pieces of plant property are not.

Case 2 (Warrick County, IN): This case involves two large sources on both sides of the Ohio River. We agree that receptors

should be located over the river since this is a public waterway, not controlled by the sources. We also agree that the river does indeed form a sufficient natural boundary/barrier and that fencing is not necessary, since the policy requires a fence or other physical barrier. However, some conditions must be met. The riverbank must be clearly posted and regularly patrolled by plant security. It must be very clear that the area is not public. Any areas where there is any question--i.e., grassy areas, etc.--should be fenced and marked, even if there is a very remote possibility that the public would attempt to use this property.

However, we also feel that current policy requires that receptors should be placed in ALCOA and SIGECO property for modeling the contribution of each source's emissions to the other's ambient air. Thus, ALCOA's property--regardless of whether it is fenced--is still "ambient air" in relation to SIGECO's emissions and vice-versa.

Case 3 (Wayne County, MI): This case involves the air over the Detroit River, the Rouge River and the Short-cut Canal. We agree that the air over all three of these is ambient air, since none of the companies owns them or controls public access to them. Note, however, that one source's property--regardless of whether it is fenced--is the "ambient air" relative to another source's emissions.

Case 4 (Cuyahoga County, OH): This case involves LTV Steel's iron and steel mill located on both sides of the Cuyahoga River.

We do not feel that LTV Steel "controls" the river traffic in that area sufficiently to exclude the public from the river, whether it be recreational or industrial traffic. The fact that there is little or no recreational traffic in that area is not sufficient to say that all river traffic there is LTV traffic. The public also includes other industrial users of the river that are not associated with LTV.

It is difficult to tell from the map whether the railroad line is a through line or not. If the railroad yard serves only the plant then it would not be ambient but the railroad entrance to the plant would have to be clearly marked and patrolled. However, if the line is a through line then that would be ambient air. We would need additional information to make a final determination.

The unfenced river boundaries should meet the same criteria as in Case 2 above.

Case 5 (involves the placement of receptors on another source's fenced property): As mentioned above in Case 2, we feel that present policy does require that receptors be placed over another source's property to measure the contribution of the outside source to its neighbor's ambient air. To reiterate, Plant A's property is considered "ambient air" in relation to Plant B's emissions.

I hope that these comments are helpful to you and your staff. This memorandum was also reviewed by the Office of General Counsel.

cc: S. Schneeberg
P. Wyckoff
R. Rhoads
D. Stonefield
Air Branch Chiefs, Region I-X

October 17, 1989

MEMORANDUM

SUBJECT: Ambient Air

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

TO: Gerald Fontenot, Chief
Air Programs Branch, Region VI (6T-A)

My staff and I have discussed the ambient air case outlined in the August 24, 1989 memorandum from Jim Yarbrough of your staff to Doug Grano of my staff. Specifically, Region VI and the Texas Air Control Board propose that prevention of significant deterioration (PSD) modeling for Mitsubishi Industries can discount the contribution of a background source to the predicted concentration as follows:

1. Assume Mitsubishi and background plants B and C.

2. Mitsubishi and plants B and C are modeled and total concentrations are estimated.

3. Where a receptor is located on plant B's nonambient air property, the contribution from plant B (only) may be subtracted from the total concentration.

This situation is similar to a case raised to OAQPS's attention in 1987 by Region V. Guidance on this case was provided by OAQPS to Region V in a memorandum dated April 30, 1987 (attached). That guidance is consistent with your proposed approach and, therefore, we agree with your position.

However, the State should be advised that, when modeling Mitsubishi, all receptors off Mitsubishi property are in ambient air and that the ambient air policy does not allow sources to excessively pollute their neighbors. Note that a background source could, in the future, change their operation and make portions of their property accessible to the public. Care should be taken to avoid situations that could result in undue exposure to excessive concentrations and which could result in adverse public health impacts.

In response to your position on issuance of the permit where Mitsubishi makes a significant contribution to predicted violations of either the national ambient air quality standards (NAAQS) or PSD increments, policy contained in the July 5, 1988 memorandum from OAQPS to Region 3 should be applied (attached). For a new or existing NAAQS violation, the permit may be granted under specific conditions. However, for any increment violation for which the proposed source has a significant impact, the permit should not be approved unless the increment violation is corrected prior to operation of

the proposed source.

If you have any questions regarding this memorandum, please call Doug Grano at FTS-629-5255.

Attachments

cc: Air Branch Chief, Regions I-V, VII-X
SO2 Contacts

bcc: John Calcagni
Dan deRoeck
Gary McCutchen
Joe Tikvart
Dean Wilson
Jim Yarbrough
Regional Modeling Contact, Regions I-X

(Attachments may be found in generic/recurring issues section on the BBS as AMA#2 under Ambient Air and SAQ#1 under Significant Air Quality Impacts)