

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

JUL 5 1988

MEMORANDUM

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

From: Gerald A. Emison, Director  
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 regulations 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 to cause 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 representatives 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, dated 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

Attachment

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

Date: December 16, 1980

Subject: Interpretation of "Significant Contribution"

From: Richard G. Rhoads, Director  
Control Programs Development Division (MD-15)

To: Alexandra Smith, Director  
Air & Hazardous Materials Division, Region X

We have received your memo of October 27, 1980 regarding the applicability of PSD and the Emission Offset Interpretative Ruling when the proposed sources (such as Northern Tier) would be locating in a PSD area and would cause or contribute to a new or existing violation of the National Ambient Air Quality Standards (NAAQS). You asked for clarification of existing policy in two areas. This memo is intended to finalize the draft transmittals we have exchanged since receiving your request. Your first question asked whether EPA is using the concept of significant contribution within the PSD regulations when assessing whether a proposed source, locating in a PSD area, would "contribute to air pollution in violation of the NAAQS." As discussed in the PSD workshops and the PSD workshop manual, EPA continues to apply the significant impact concept using the values defined in the 1978 preamble, 43 FR 26398, and in 40 CFR Part 51 Appendix S. If the proposed source or modification has no significant contribution to the nonattainment problem, then the proposed project does not contribute to this violation. Provided that it would not cause any new NAAQS violations, such a source is not subject to the requirements of 40 CFR 51.18(k) or 40 CFR Part 51 Appendix S; the proposed project must, however, still demonstrate that it will not cause or contribute to air pollution in violation of the PSD increments. See 40 CFR 52.21(k)(2).

Your second question asked about the need for a significant impact by the proposed source to occur simultaneously with the actual violation at a particular nonattainment site. In general, a PSD source with significant new emissions of the applicable pollutant which constructs in an area adjacent to a nonattainment area should be presumed to contribute to the violation if it would have a significant impact at any point in the nonattainment area. However, if the proposed PSD source can demonstrate that its new emissions would not have a significant impact at the point of the violation when that violation is actually occurring, then the proposed source would meet the requirements of 40 CFR 52.2 (k)(1) provided that it

would not cause any new violations of the NAAQS. This answer would apply whether the nonattainment area was newly discovered or was formally designated nonattainment under Section 107. I should like to add that, while such a demonstration is allowed, it will be extremely difficult to prove an insignificant contribution, especially in the short term.

Several examples will clarify this response. For instance, a proposed new major stationary source may locate near a designated nonattainment area for SO<sub>2</sub>. Suppose that the source owner has shown in his PSD application that his SO<sub>2</sub> impacts are significant only on the edge of the Section 107 area which is demonstrated to actually be in attainment of standards. The source owner also demonstrated that his impacts are not significant in the area of actual violation of the SO<sub>2</sub> standards. A second scenario is the case where the owner demonstrates that on the days when the 24-hour SO<sub>2</sub> standard violation is actually occurring, the proposed source's 24-hour averaged impacts are not significant. The owner has also shown that on other days when the air quality meets the 24-hour SO<sub>2</sub> standard, his impacts are significant but do not cause the air quality to exceed the 24-hour standard. The third example is where the area was only nonattainment for the SO<sub>2</sub> annual standard. The source owner shows his impacts on the nonattainment area are significant for the 24-hour averaging time and insignificant on an annual basis. For all three scenarios, the source owner has demonstrated that he will not contribute to air pollution in violation of the NAAQS and has met the PSD review requirements of 40 CFR 52.21(k)(1) for SO<sub>2</sub>, providing that he will not cause any new violations. This source would also not be subject to nonattainment NSR requirements under 40 CFR 51.18(k).

If you have further questions, please contact Mike Trutna (FTS 629- 5291) for more information.

cc: D. Hawkins  
W. Barber  
Director, Air & Hazardous Materials Division, Regions I - X  
Director, Enforcement Division, Regions I - X  
NSR, PSD Regional Contact, Regions I - X