UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Air Quality Analysis for PSD

DATE: MAY 09 1988

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

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

I would like to bring to your attention, for immediate resolution, a very basic inconsistency within the New Source Review Program. As a result of discussions that we have had with the Source Receptor Analysis Branch (SRAB) and Region V, it has come to our attention that the calculation of increment consumption and NAAQS impact is being performed in a fundamentally different manner in the two Regions. This difference is such that if we in Region III were to have used the method being used in Region V, a number of previous situations in which the proposed source was unable to build would have been avoided. At the present time there are three pending and two upcoming permit actions within Region III whose disposition will most likely depend on which method is used. We have instructed the affected states (Pennsylvania & West Virginia) to hold off any action until this issue can be resolved nationally. It is important to note that this issue is not unique to Regions III and V. We have recently been informed that a number of the other Regions are equally divided between the two approaches.

The specific method being used in Region V is an outgrowth from a method known as "CORSTAR" which the Agency had considered a number of years ago. Although similar, the method presently being used by Region V is different from the original "CORSTAR" technique. The similarity in the two approaches relate to how the predicted impacts on NAAQS and PSD increment within the area of significant impact of the proposed source are considered in determining permit approval. The PSD program policy states that an air quality analysis is required within the area of significant impact of the proposed source or 50 kms whichever is less. This has historically been interpreted as a closed circle of radius "x" about the source within which the analyst would perform the evaluation for all time periods. It has been our understanding that if a violation was predicted within this area, whether or not the proposed source's impact was significant at that time and place of the violation, a permit could not be granted. In contrast to this, the Region V approach allows a permit to be issued to a proposed source, even if a violation of NAAQS or increment is predicted within the source's area of significant impact, as long as

the impact from the proposed source is insignificant at the specific location and time of the violation. The logic in this approach is that the uncovered violation is entirely unrelated to the emissions from the proposed plant, and therefore, whether or not the applicant builds will neither prevent nor help resolve the issue.

When this concept was being considered by the Agency, relative to CORSTAR, Region III was among its strongest supporters. We argued vigorously for the use of this approach in our permitting process. However, the decision made and documented within the modeling program disallowed the use of this approach. For discussion, I would direct your attention to two memoranda:

1. An Untitled summary of the Regional/State Modelers Workshop - May 30,1985 - To: Participants - From: J. Tikvart,

2. June 29, 1984 Model Clearinghouse response to Region X.

The reasoning behind this decision is primarily based on the fact that research has shown that models have difficulty accurately predicting concentrations at a specific place and time. The Region V approach heavily relies on accurate event by event predictions. The policy, as we understand it, requires that, in order for an applicant source to obtain a PSD permit, the air quality analysis performed must indicate that violations of the increment and NAAQS will not occur at any time or place within the applicant's area of significant impact. This area must be a regular circle centered on the applicant source with a radius that extends to the farthest point at which the impact drops off to just below significant. It is this policy that we and our States have been consistently implementing.

It is our understanding that Region V has always implemented this approach within the context of their PSD program. In fact, there have been written communications from Region V to its States directing the use of the technique. In talking with Region V we have been told that the policy which they are following has been reviewed and sanctioned by the new source group, i.e., Non-Criteria Pollutant Programs Branch (NCPPB). Whereas, the primary guidance under which Region III has been operating has come from SRAB. However, as recently as three months ago in discussions with personnel from NCPPB, guidance disallowing use of a Region V type approach was clearly articulated. As a result of the policy which we received, a particular applicant source had to agree to install certain additional controls such that its proposed impact was below significance everywhere; having the Region V approach available would have obviated the need for these controls. It is imperative that consistent policy relative to ambient impact analysis for new sources be developed.

Although a change from what we understand to be present policy would put us in the unenviable position of having to reconcile with our States the precedents which have been established, we are still of the opinion that this technique is a rational and pratical approach to the air quality evaluation aspects of PSD permitting. Therefore, it is our recommendation that an approach similar to one being used by Region V be instituted as policy throughout the Agency. It would be our intent that this technique apply only to the PSD permitting process. The use of this technique within the SIP process is clearly inappropriate since the program does not provide for planning through the use of significant impacts. In support of this recommendation, let me offer the following comments:

1. Assuming for the moment that our models have the accuracy to implement the Region V technique, it is clear that the approach is consistent with the philosophy inherent in permitting a source as long as its impact does not cause or exacerbate a NAAQS or increment violation. This technique is a logical extension of the way in which we construct and evaluate impacts in "areas of significant impact."

2. The use of this technique provides us the ability to avoid having to disapprove an applicant's permit based entirely on a problem created by other sources.

3. Although it is true that certain model performance studies have indicated that models do not predict well at a specific location and time, we do in fact use our models in this manner whenever we evaluate a multi-source situation; i.e., predictions from each source are added consistent in space and time. Certainly one would find little support within the scientific community for not performing multi-source modeling based on the above-mentioned poor model performance.

4. Finally, there is in my opinion ample support for the notion that a model for good or bad, is used as an objective scheme through which air quality can be consistently and equitably managed. An example of this is seen in how we interpret model predictions relative to specific numerical criteria. That is, present models are capable but certainly not accurate enough to distinguish between impacts slightly below and slightly above the NAAQS; however, we choose to accept the prediction as the "best estimate" and as such ignore the models possible inaccuracy in the decision-making process. From this perspective, use of the Region V approach in the consistent application of the PSD program is, in my opinion, very desirable.

In addition to the above issue, it is our opinion that there exist other issues, within the New Source Review Program, which as well need consistent national guidance. Included are issues such as: increment tracking, construction of increment consuming inventory for modeling (what emissions do we model?), and others. As is the case with the above ambient impact analysis issue, for such guidance to be developed coordination must occur between NCPPB and SRAB. It is our recommendation that a work group be formed co-chaired by a representative from both Branches. The charter of the work group would be to review the entire New Source Review Program in order to recommend appropriate guidance for performing air quality analyses.

Again, I would like to emphasize that an immediate decision is needed so that we can properly advise our states. Pennsylvania has recently requested a decision on this matter so that they can proceed with the evaluation of two pending co-generation facilities in the State which otherwise would be disapproved. Pennsylvania has taken the position that the Region V approach (which they have termed modified CORSTAR) should be considered an acceptable approach. Attached is the letter from Pennsylvania which outlines their recommendation. Region III strongly agrees with the particulars of this recommendation.

This matter has been discussed at length with both Region V and SRAB. A memo from Region V to both NCPPB and SRAB was sent some time ago indicating the same inconsistency and recommending a similar solution. Action on the Region V memorandum has been placed on hold in anticipation of this writing. In closing, let me say that although we feel strongly about our position, we can live with either decision since a "single" policy, consistently implemented in all Regions, is of greatest importance.

Attachment

cc: E. Lillis (MD-15)
J. Tikvart (MD-14)
J. Calcagni (MD-15)
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