UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: AUG 0 1 1985

REGION IV - ATLANTA, GEORGIA

SUBJECT: Modeling Issues Raised at the Region IV PSD Workshop (June 11-12, 1985)

FROM: Regional Meteorologist, Air Programs Branch

TO: Mr. Dean Wilson (MD-14)
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thru: Bruce Miller, Acting Chief (BPM)
Air Programs Branch

SUMMARY

A number of modeling issues were raised during this year's Region IV PSD workshop which I promised the workshop participants I would forward to the Model Clearinghouse for their concurrence. Below are the issues raised during the workshop. The regional position given to the workshop attendees for each issue is listed below. Please let us know whether you concur with the regional position. In addition, there are a few questions that do not involve agency policy, but we do request guidance from the "Clearinghouse". The issues were:

1a. The State of Florida has asked, "Whether the return period of similar worst case meteorology should be considered in setting an emission limit?"

The regional position is that it would help to define the worst case situation, but there are no EPA meteorological data base requirements for setting an emission limit through modeling other than with the use of five years of meteorological data.

1b. Has any research into this area been done by EPA? We at the region were not aware of any research. Assistance from the "Clearinghouse" would be appreciated in this area.

2a. Do downwash calculated values using the ISC model carry the same weight as non-downwash regulatory modeling? Both the "Regional Workshops on Air Quality Modeling", April 1981 (page B-3), and the Draft Guideline on Air Quality Models (page 8-7) indicate an air quality analysis is necessary where stack heights are less than GEP. It is not clear to the states that it also follows that the downwash calculated numbers are given the same weight as non-downwash numbers for establishing an emission limit.

The regional position is yes. A downwash analysis when required does carry the same weight as downwash numbers for establishing an emission limit.

2b. If a PSD application has a modeling analysis which shows exceedance of one or more of the PSD increments, can a permit be issued on the condition that post construction monitoring be required?

The regional position is that there may be situations where post construction monitoring will better define the ambient impact, but presently, there is no clear guidance that would enable us to ignore the modeled values and to base the emission limit on the collection of future data.

Therefore, unless we have written guidance that would allow post construction monitoring in lieu of downwash modeling which shows exceedances of the PSD increments(s), we believe we must base our permitting decision on the modeled results.

3a. All the workshop participants expressed concern about the requirement to model fugitive emissions, even where the emissions can be quantified. Even though no one at the workshop doubted the requirement to model fugitive emissions there was a very vocal concern that the modeling results are not realistic, especially when compared to urban monitoring data.

The regional position is that fugitive emissions must be modeled. If the analysis shows exceedances of the standard or increment, then a more indepth review may be needed which could include the use of the "CALMPRO" processor, deposition and the wind scaling of emissions. If remodeling continues to show exceedances, then site specific emission factors or similar source emission factors using monitoring data may be necessary.

3b. Another concern was to what extent, if any, has the ISC model been validated for ground level sources, and what affect does extrapolating from 7 or 10 meters down to ground level have on wind speed, and therefore on the calculated value?

3c. A third concern was that if the ISC model is modified to allow for source calculations to be made at receptors closer than 100 meters, then there needs to be a model evaluation to support this change. There is concern that this change will complicate the fugitive modeling issue and lead to even higher calculated values that cannot now be supported based on the

limited monitoring data available. We would appreciate any comments you may have concerning items 3b and 3c above.

4. What are the significant impact numbers for Class I areas? Table A-3 on page A-8 of the 1980 Ambient Monitoring Guidelines for PSD give as a footnote an 1 ug/m^3 value on a 24-hour basis for TSP and SO_2. Our office believes this number is in error and refers only to sources locating within 10 kilometers of a Class I area.

   The regional position is that there are no significant impact numbers and any impact (modeling) is significant.

ACTION

We would appreciate your concurrence on the regional positions above, and provide additional assistance for the issues not answered. We also request that you consider drafting a policy letter with wider discretion to use post construction monitoring where there are significant uncertainties about the projected impact of a new source based on fugitive emissions or downwash. Page 4 of the 1980 Ambient Monitoring Guidelines for PSD indicates that post construction monitoring is a viable alternative to modeling that can be used.

BACKGROUND

Region IV PSD Workshop, June 11-12, 1985.

Lewis Nagler