UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Research Triangle Park, North Carolina 27711

AUG 15 1996

MEMORANDUM

SUBJECT: Application of the Ozone Limiting Method

FROM: Joseph A. Tikvart, Group Leader
Air Quality Modeling Group (MD-14)

TO: Richard L. Daye, Regional Meteorologist
Air Planning and Development Branch--Region VII

In response to your request, the Model Clearinghouse has reviewed your position with respect to the use of the Ozone Limiting Method (OLM) to estimate annual nitrogen dioxide (NO_2) concentrations in the vicinity of KN-Energy Company compressor facility in Nebraska. It is our understanding that the source configuration at the facility is such that there are individual distinguishable NO_x plumes from each stack that can be challenged by the background ozone levels. Given that this is the case, we agree with your position that the technically correct approach in this case is that the individual NOx plumes from each stack should be subjected to the oxidizing potential of the hourly background ozone concentration. Subsequent hourly estimates of NO_2 at each receptor due to emissions from each source can then be combined to produce a total hourly NO_2 concentration due to emissions from all NO_x sources at the facility.

If the situation is such that NO_x plumes from the various emission points at the facility are essentially combined and indistinguishable before they are subjected to the oxidizing potential of the background ozone, then a case could possibly be made to use the OLM in the way that the Company has proposed. Professional judgment should be exercised based on the circumstances of the particular case, as to when groups of source emissions could reasonably be treated as one plume. However, it is our understanding that the Company has not made a case for such a position.

The Company's position that we have changed our guidance with respect to the use of the OLM and that this change lacks regulatory authority is incorrect. For instance, as you are aware Supplement C to the Guideline on Air Quality Models (Revised) (GAQM) now provides the Ambient Ratio Method (ARM) as new guidance for obtaining screening estimates of ambient NO2 concentrations replacing the OLM. This guidance was submitted to formal public review and published in the Federal Register. However, given the generally conservative nature of the

OLM, if the source in question requests to continue the usage of the OLM for their particular analyses, we have agreed that they may do so provided the OLM is applied in a technically sound manner.

The Guideline (prior to Supplement C) referred the reader to the reference by Cole and Summerhays (1979) regarding the procedure and basis for using the OLM. In that reference it is clear that the procedure was derived for a single NOx point source. Your extrapolation of the procedure for a multiple point source scenario, which forms the basis for your recommendation for the KN plant to treat each plume separately, is the correct technical interpretation for their specific situation.

If you have any questions please contact Dennis Doll at 919-541-5693 or Dean Wilson at 919-541-0288.

FY-96 MODEL CLEARINGHOUSE MEMORANDA

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