



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

August 19, 1986

MEMORANDUM

SUBJECT: Comments on the Kammer Wind Tunnel Study Report

FROM: Joseph A. Tikvart, Chief *J. Tikvart*  
Source Receptor Analysis Branch (MD-14)

TO: James E. Sydnor, Chief  
Air Programs Branch (3AM10)

At your request we have reviewed the information you submitted on August 5, 1986, and the position of Region III on the Kammer power plant wind tunnel study. We realize much effort has gone into the project and that the circumstances surrounding the study are unique. Certainly all parties have learned a great deal about how to and how not to conduct such studies and the allowances for past guidance should not set any precedents for ongoing or future studies. Thus we concur with Region III's position/conclusions while offering the following comments.

One comment concerns the fact that C-D stability was not maintained throughout the wind tunnel but became D-E stability before the last sampling traverse. Thus it is not known whether the critical concentrations could have been measured in the tunnel, obviating the need for the mathematical calculations for C, D and E stability. However, since the 900 ft stack height corresponds to a 90% ratio and a taller stack could likely have been justified, this concern is minimized as long as mathematical modeling is not substituted for fluid modeling in the future. The question does remain as to whether wind tunnel or mathematical modeling results are being scaled; credibility will be further strained if they are mixed.

Our other comment relates to the factor for converting one-hour wind tunnel estimates to 3- and 24-hour concentrations. The thought behind the guidance is that the Volume 10R factors are defaults and that the on-site wind records should be examined for persistence. It was envisioned that the actual factors would be 1.0, 0.67 or 0.33 for the 3-hour conversion, based on examining the on-site running hourly wind record. The 24-hour factor would be similarly determined according to Step 6 in Appendix E of EPA's Stack Height Workshop Manual. We believe the Volume 10R factors should be used only in the absence of hourly on-site or representative wind

data, e.g. only a statistical summary is available from which the 98th percentile wind speed is selected. Otherwise, we have no problem with Region III using the lower range of the Volume 10R factors as an initial screen but we suggest that the reviewing authority establish/concur with a site-specific factor whenever possible.

We have discussed our first comment in general with Alan Huber who shares our view. However, this does not detract from our overall concurrence.

If you have further questions, please contact Jim Dicke of my staff at 629-5681.

cc: J. Dicke  
A. Huber  
D. Wilson