M. Koenken

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711
October 11, 1988

MEMORANDUM

SUBJECT: Use of ISC UNAMAP 6, Change 7

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

TO: James Yarbrough, Air Modeling Contact
Region VI (6T-AN)

In response to your request to Dean Wilson, we have reviewed Jim Clary's evaluation regarding some possible errors in the downwash estimates of ISC. We have found that Mr. Clary's analysis and conclusions are essentially correct, i.e., the model can generate erroneous estimates for certain situations and certain receptors. At this time we believe that the errors in ISCST are limited to cases where the model must make a choice between the Schulman-Scire algorithm and the Huber-Snyder algorithm on a directional basis. In situations where the Huber-Snyder algorithm is always used, regardless of direction, or in cases where the Schulman-Scire algorithm is used for all wind directions, there does not appear to be a problem with any of the ISCST estimates.

For most situations where the ISCST model is asked to switch back and forth between the two algorithms as a function of direction, we believe that the model may be making some erroneous estimates but that the design concentration will be estimated correctly. This is because the highest concentration will usually be estimated when the Schulman-Scire algorithm is in effect and we believe that such estimates are correct. In sectors where the Huber-Snyder algorithm is in effect the concentration estimates could be too high but would not be as high as in other sectors where Schulman-Scire is in effect. In some cases where the fence line (ambient air definition) excludes certain high estimates or in cases where there is more than one downwashing stack, the above conclusions may not be valid.

For ISCLT, we are also in agreement with Jim Clary's analysis and conclusions. We have also been contacted by a number of other users who are citing problems with ISCLT. At the present time we have not had an opportunity to pinpoint the problem(s) in order to tell what kind of errors might be occurring, their magnitude or location.

Given these facts and the urgency of your situation with regard to the Ogden-Martin PSD permit, we have no problem if ISC UNAMAP 6 Change 3 is used.

By copy of this letter we are informing the other Regions of the situation with ISC, as well. We are also putting a notice on the ORD electronic bulletin board concerning the situation. Regarding other sources that are/need to use ISC, we suggest that they be treated on a case-by-case basis considering the information in this memorandum. If appropriate, the Clearinghouse will review the need for grandfathering back to UNAMAP 6, Change 3, as was done for a previous set of code problems in Change 5.

If you have any questions, please contact me. Russell Lee (FTS 629-5638) can assist in determining whether the use of ISC in a given situation will likely result in an erroneous design concentration.

Attachments

cc: J. Dicke, SRAB/TSD (MD-14)
    R. Lee, SRAB/TSD (MD-14)
    J. Mersch, SRAB/TSD (MD-14)
    D. Wilson, SRAB/TSD (MD-14)
    Regional Modeling Contact, Regions I-V, VII-X