



Modeling Annex III

11/16/82
12/3/82
o.k.

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

24 NOV 1982

Steve 12/3
Jan 31/6
All noted corrections have been made

MEMORANDUM

SUBJECT: Rhode Island Guideline for Air Quality Modeling (RI Guideline)

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

TO: Marvin Rosenstein, Regional Air Modeler
Technical Support Branch, Region I

cc: M. Neri
B. Han
W. Huda

In response to your request, the Model Clearinghouse has reviewed the RI Guideline in relationship to the State's Proposed Regulation 8. As we understand it, the use of the RI Guideline is limited by Regulation 8 to SIP revisions involving sources smaller than 250 MMBTU per hour. The comments below document issues we have discussed and agreements reached.

- ✓ 1. The urban/rural wind speed profile exponents for PTPLU listed on page 5 of the RI Guideline are different from those listed in our benchmark model CRSTER. They are not necessarily technically incorrect and in fact they have been suggested by others. However, to ensure consistency and to prevent the occurrence of different model estimates for the same regulatory situation, we recommend that the RI Guideline exponents for both urban and rural situations be replaced by a single set corresponding to those used in CRSTER. My understanding is that you are willing to make this change.
- ✓ 2. For worst-case screening only, we have agreed that Stability Class E may be used in urban areas both for flat terrain and for complex terrain situations with Valley. As you have pointed out, Class E for urban screening is consistent with recommendations for low-level sources/fanning plumes as described in Volume 1OR of the AQMPA guidelines. To maintain close consistency with Volume 1OR, I understand that the RI Guideline will be limited to sources with stacks less than 65 meters.
- ✓ 3. Section VI-D of the RI Guideline deals with worst-case meteorological conditions for a group of sources when the stack separation is taken into account. There is not a rigorous general method for specifying these worst-case conditions and a certain amount of good technical judgment must be employed. We understand that the interactive screening is only used to establish one component of the background, i.e., that associated with other nearby sources. If more than one source (stack) within a facility is subject to a change in emission limits, these stacks will be collocated and the components of background will be added to the maximum concentration estimated for the facility. To minimize the possibility of inconsistencies, the language that you have introduced clarifies the intent and limitations of the interactive screening.

✓ Regarding the problem on how to track increment consumption when interacting sources consume increment, I agree with your suggested changes which state that a more rigorous method than interactive screening may need to be employed.

✓ 4. Regarding the averaging time conversion factor in Section VI-E, we defer to your technical judgment that the listed factors are conservative for Region I climatology. We understand that the appropriateness of these factors has been verified by selected CRSTER runs for Providence, R. I. It is doubtful that the same factors, as limited by stability class and stack heights less than 50 meters, are generally applicable outside of the New England States.

*Jan is
documenting
this*

✓ 5. We have no problem with your documentation for PTMTPA. However, for purposes of the RI Guideline, only the "Plane Displacement" option should be used. I understand that the final RI Guideline will limit the use of PTMTPA in Rhode Island to this option.

cc: L. Deal
R. Rhoads