



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711
February 22, 1990

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Air & Radiation Branch
U.S. EPA Region V

MEMORANDUM

SUBJECT: Approval of Equivalence Demonstration Plan
Integrated Intermediate Terrain Model

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

TO: Alan J. Cimorelli, Lead Meteorologist
Region III (3AM12)

In response to your request the Model Clearinghouse has reviewed the UE&C protocol for demonstrating equivalence of the IGM with ISCST and COMPLEX I, for application of this nonguideline model to a new source in the Clover VA area. Our understanding is that the IGM is designed to not only reproduce ISCST and COMPLEX I estimates at receptors where these models are applicable, but to also make the appropriate choice between estimates of these two models in intermediate terrain (between stack height and plume height). This "appropriate choice" would be consistent with the hour-by-hour choice described in your memorandum to me dated March 9, 1989 (which we subsequently concurred on).

It is our understanding that the equivalency demonstration proposed by UE&C will consist of three parts: 1) the submission of evidence that care was taken in the development of IGM to ensure that it indeed reproduces the guideline model estimates and makes the proper choice in intermediate terrain situations; 2) the submission of an equivalency demonstration between the models (demonstrating that estimates are within 2%) for an undefined subset of receptors for the Clover VA source and, 3) the submission of evidence that the IGM made the appropriate choice between ISC and COMPLEX I estimates for a very limited subset of sources, receptors and time periods involved in the Clover analysis.

The Model Clearinghouse agrees in principle with the protocol submitted by UE&C. While we advise that more data points should be included in the demonstration, especially in Part 3, we do understand that the manual comparison practically limits this aspect. We leave it to you, when reviewing the data submitted pursuant to this protocol, to decide whether enough data are included to provide confidence that proper estimates are being made for the Clover source. For other sources where UE&C wishes to use the IGM, we

believe that Parts 2 and 3 of the equivalency demonstration should be repeated, at least until confidence and familiarity with IGM can be established.

If you have any questions, please contact Dean Wilson at 629-5683.

cc: D. Grano
D. deRoeck

bcc: Regional Modeling Contact, Regions I, II, IV-X (with copy of incoming memorandum and list of FY-90 Clearinghouse memoranda)

FY 90 MODEL CLEARINGHOUSE MEMORANDA

<u>Date</u>	<u>Region</u>	<u>Subject</u>
10/17/89	VI	Ambient Air
11/7/89	II	Interpretation of On-site Meteorological Data Requirements and the Use of RTDM for a PSD Source
11/28/89	VIII	Utah PM-10 Secondary Sulfate and Nitrate Calculations
01/02/90	IV	Effect of Changing Stack Heights on Prevention of Significant Deterioration (PSD) Modeling and Monitoring
01/10/90	VIII	Utah PM-10, Secondary Sulfate and Projections
01/10/90	VIII	Review of The Utah County PM-10 Draft SIP
01/11/90	VI	Alternative Emission Reduction (Bubble) SIP Revision Authorizing Operation of a New Sulfur Recovery Plant at the Conoco Inc. Ponca City Refinery
01/16/90	VI	Recent Texas Air Control Board (TACB) Evaluation of the ISC Area Source Algorithm
01/16/90	V	Refined Metals Lead Modeling Analysis
02/22/90	III	Approval of Equivalence Demonstration Plan Integrated Intermediate Terrain Model