

**ENVIRONMENTAL PROTECTION AGENCY**

[FRL-7554-8]

RIN 2060-AF01

**Availability of Additional Documents Relevant to Anticipated Revisions to Guideline on Air Quality Models Addressing a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Notice of data availability.

**SUMMARY:** We are providing notice that additional information in the form of two documents relevant to revisions of the *Guideline on Air Quality Models*—hereafter, the *Guideline*—have been placed in Docket No. A-99-05. The revisions would enhance the *Guideline* by incorporating a new, general purpose dispersion model called the AMS/EPA Regulatory Model (AERMOD) to replace the existing Industrial Source Complex (ISC3) model in many air quality assessments and incorporate a new downwash algorithm—PRIME. An earlier version of AERMOD was proposed, and we have considered recommendations made both in public comment on that proposal and by beta testers of the model's computer code. The two documents discussed today provide information on the performance of AERMOD when the model is modified in a manner suggested by public comment. We invite comment on these documents.

**DATES:** Comments must be in writing and either postmarked or received at the address below by October 8, 2003.

**ADDRESSES:** Copies of both documents have been placed in Docket No. A-99-05. These new documents are available for inspection at the EPA Docket Center, (EPA/DC) EPA West (MC 6102T), 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room (B102) is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Joseph A. Tikvart, Leader, Air Quality Modeling Group (D243-01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone (919) 541-5562.

**SUPPLEMENTARY INFORMATION:** We have placed the two documents described below in Docket No. A-99-05:

1. USEPA, "AERMOD: Latest Features and Evaluation Results." Office of Air

Quality Planning and Standards, Research Triangle Park, NC 27711; EPA Report No. EPA-454/R-03-003, July 2003.

2. USEPA, "Comparison of Regulatory Design Concentrations: AERMOD vs. ISCST3, CTDMPPLUS, ISD-PRIME." Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711; EPA Report No. EPA-454/R-03-002, July 2003.

These reports are also available on our modeling Web site (<http://www.epa.gov/scram001>) and provide technical details on AERMOD revisions since it was proposed in the **Federal Register** (65 FR 21506) on April 21, 2000. On April 15, 2003 (68 FR 18440), we promulgated proposed changes and additions to the *Guideline* (Appendix W to 40 CFR part 51) that were supported by public comments and that we deemed ready to finalize. Components of the proposal that we did not act on include: (1) Adopting AERMOD to replace ISCST3 in many assessments, (2) revising ISCST3 by incorporating a new downwash algorithm (PRIME) and renaming the model ISC-PRIME, and (3) updating the Emissions and Dispersion Modeling System (EDMS 3.1) in appendix A of the *Guideline*.

Nearly every commenter on the April 2000 proposal urged us to integrate the aerodynamic downwash PRIME algorithm into AERMOD (*i.e.*, not to require two models for some analyses), and no comments were received which contradicted these requests. In response to our request that this comment be addressed, AERMIC (the American Meteorological Society (AMS)/EPA Regulatory Model Improvement Committee) successfully revised AERMOD (version 02222), incorporating the PRIME algorithm and making other incidental modifications to respond to public comments and issues identified by beta testers of the code. Documentation of AERMOD (02222) and its computer code has since been available on our Web site (<http://www.epa.gov/scram001/tt26.htm#aermod>).

Also proposed in April 2000 was an EDMS upgrade to version 3.1. Since that proposal, the model developer—Federal Aviation Administration (FAA)—decided to further upgrade EDMS to incorporate AERMOD in a version 4.0. Performance evaluation and adequate documentation was requested in public comments (A-99-05), and in our April 15, 2003, notice we said that this new information would be forthcoming. Recently, however, FAA has decided to withdraw EDMS from the *Guideline's* appendix A. No new information is therefore provided in this action; we

support this removal from appendix A and will address the details more fully in a future promulgation of the *Guideline*.

The most significant changes made to AERMOD in response to public comments include the following:

- addition of the PRIME downwash algorithms;
- modifications of the complex terrain algorithms to make AERMOD less sensitive to the selection of the domain of the study area;
- modification of (a) urban dispersion for low-level emission sources, such as area sources, to produce more realistic urban dispersion and (b) minimum mixing layer depths used to calculate the effective dispersion parameters for all dispersion settings;
- addition of plume meander to all stable and unstable conditions; and
- upgrades of AERMOD to include all the newest features that exist in the latest version of ISCST3 such as FORTRAN 90 compliance, allocatable arrays, EVENTS processing, and the TOXICS option.

The effect of these changes is now documented in the two reports cited above.

The performance analysis of model accuracy is summarized in: "AERMOD: Latest Features and Evaluation Results." Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, EPA Report No. EPA-454/R-03-003, July 2003. That analysis provides comparisons of model estimates with measured air quality concentrations for a variety of source types and locations. Based on this analysis, we have concluded that (1) the performance of the revised version of AERMOD (02222) is slightly better than the April 2000 proposal and both versions of AERMOD significantly outperform ISCST3 and (2) AERMOD (02222) with PRIME performs slightly better than ISC-PRIME for aerodynamic downwash cases.

The consequence analysis of effects on design concentrations is summarized in: "Comparison of Regulatory Design Concentrations: AERMOD vs. ISCST3, CTDMPPLUS, ISD-PRIME." Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711, EPA Report No. EPA-454/R-03-002, July 2003. That analysis provides comparisons of design concentrations (on which emission control limits might be based) for a wide variety of source configurations and settings. The analysis indicates that:

- for non-downwash settings, the revised version of AERMOD (02222), on average, tends to predict concentrations closer to ISCST3 with somewhat smaller