EPA's 8th Conference on Air Quality Modeling

Comments on a new approach for selection of acceptable refined models

By

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(Peer reviewed by the A&WMA AB-3 Committee)

Comments Regarding Selection of Acceptable Refined Models

- EPA considers a situation that for the same regulatory application, several different *recommended* dispersion models may give different answers, *all of which are valid.*
- Will this lead to extensive arguments over the best model, where industry attempts to find the lowest predicting model, and opponents advocate the highest predicting model? Who is right? How will EPA manage this confusion?

Qualification of Models

- Third-party peer review is needed
- An extensive set of evaluation databases (as large a set as practical) should be set up for testing the models
- A large set will make reduce concerns about “independence” of data sets because the model must perform well across a large variety of data sets (e.g., 17 data sets for AERMOD)

Qualification of Models, cont.

- Model performance should be geared toward avoiding model underpredictions, while making note of the areas where the model performance excels and where it might be inadequate
- Recommendations for use can be qualified based upon model formulation, inherent limitations (including model uncertainty), and evaluation performance

Application of Models

- Each model use needs to have a model protocol that makes the case as to why the selected model is the best for the given application
- EPA may need to have a panel of experts to make judgment calls – could be the role of the EPA Model Clearinghouse, but EPA Regions may want to retain their traditional roles as well

Minimum Requirements for Models to be Approved for Use

- Undergoes peer review and evaluation tests by EPA
- Model documentation is available
- Code may be withheld in proprietary cases, but an independent panel must verify that the code accurately portrays the model formulation, which should be documented
- A model uncertainty analysis is needed to determine model limitations

Requirements to Maintain Model Use

- EPA should periodically review adequacy of models previously accepted for use
- Models should be available to the public at a reasonable cost
- Any model changes after initial acceptance need to be publicly available and documented to be accepted for regulatory review

EPA's Role

- The proposed approach has its merits, but it is ambitious and untested
- Decisions on model selection may be controversial, especially in areas where many models are proposed to be applicable
- Can EPA devote the resources needed to administer such a program?
- How will the EPA Regions and States keep up with a long list of approved dispersion models?