

# EPA 11<sup>th</sup> Conference on Air Quality Modeling August 12-13, 2015



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## **A&WMA ATMOSPHERIC MODELING AND METEOROLOGY (APM) COMMITTEE:**

**Comments**

**David Long, Chair**

**Justin Walters, Vice-Chair**

**Michael Hammer, CCM, Secretary**

# Atmospheric Modeling and Meteorology (APM) Committee



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- Technical coordinating committee for air quality modeling and meteorology issues at A&WMA
- Approximately 100 committee members
- Committee objectives:
  - Provide technical support for annual meeting,
  - Support specialty conferences and workshops,
  - Contribute to technical programs,
  - Provide comments and review on regulatory and technical issues related to modeling in a constructive manner to agencies.

# Ad Hoc Review Committee



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- George Schewe, CCM – Trinity – Ad Hoc Review Chair
- David Long – AEP – APM Chair
- Justin Walters – Southern Company – APM Vice-Chair
- Michael Hammer, CCM – Lakes – APM Secretary
- Pete Catizone, CCM – TRC
- Bob Paine, CCM – AECOM
- Gale Hoffnagle, CCM – TRC
- Ron Petersen, CCM – CPP
- Ralph Morris – Ramboll Environ
- Mark Garrison – ERM
- Tony Schroeder, CCM – Trinity
- Abhishek Bhat – Trinity
- All APM Members solicited for comments



1. General Comments
2. AERMOD
  - Enhancements
  - New Algorithms
  - Applications
3. Single-Source Modeling for Ozone and PM<sub>2.5</sub>
4. Long Range Transport Modeling



- EPA has produced a lot of useful information to address challenging tasks.
- However, our review of the current record suggests that some of the guidance documents placed in the docket are not complete or appear to be “works in progress” that do not yet support final rulemaking.
- Incomplete modeling procedures are proposed:
  - Ozone/PM<sub>2.5</sub> guidance is incomplete,
  - Tier 1 emission rate (MERP) guidance is essential but unavailable,
  - Long-range modeling procedures are not defined,
  - Promulgation of these issues could occur with future rulemaking with more complete procedures defined.



- **More time consuming due to incompletely defined modeling approaches**
  - Our experience is that protocols often take a long time to be approved. With more uncertainty and more focus upon Model Clearinghouse review, this timing will only get worse.
  - Regulatory review for protocols should be accomplished in a limited time (e.g., 90 days). Potentially 4 agencies or more in each review.
- **More expensive**
  - More work to prepare protocol and usher it through review.
  - Significantly greater cost and uncertainty for ozone and PM<sub>2.5</sub> evaluation and modeling.
  - Greater effort in defending permit due to undefined approved procedures.



- **Less consistent**
  - Each modeling exercise, because of its case-by-case nature, will be different than most others.
  - Consistency was the hallmark of past Guidelines.
  - The lack of consistency will lead to greater opportunity for permit challenges and a greater chance of litigation.
- **More likely to be avoided**
  - Increasing the time, expense and vulnerability for obtaining a permit will lead to further efforts to avoid permits.
  - As it is now getting a PSD/NSR permit is a long complex process. Making it longer and much more complex is not in the best interests of the agencies, industry or the profession.



- We recommend that EPA not take the positions that:
  - Cause special approvals to be restricted to single sources and not reachable for any other use.
  - Would require special approvals by the Model Clearinghouse for all but very basic modeling demonstrations.
    - ✦ Retain the current system where permitting authority discretion is sufficient to approve a modeling protocol in most cases.



- We suggest the formation of an independent expert “Modeling Science Advisory” panel.
  - Purpose: To advise EPA in its planning and review of model component changes and guidance on how models are applied.
- Focus of model evaluations/changes should be on scientific justifications rather than simply on sensitivity studies.
  - However, EPA should demonstrate that model formulation and guidance changes result in improved model performance.
- EPA should move to a tiered approach for model changes and updates to allow new and improved modeling formulations to move into use in a more expeditious and better reviewed manner.

# Possible 3-Tiered Approach to Degree of Review



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- **Tier 1: Changes to Models in Appendix W (Major Change)**
  - This requires a formal public comment process with Federal Register notice and a public hearing.
  - 90-day comment period.
  - Recommend 1-year period of testing and debugging of new modeling procedures; additional comments limited to this activity.
  - Final implementation after 1 year (reviewing 90-day comments and results of testing/debugging activities).
  - New techniques can be used immediately but are subject to change due to testing/debugging and public comment.

# Possible 3-Tiered Approach to Degree of Review



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- **Tier 2: Formulation Updates to Appendix W Models**
  - Examples: Low wind options, change to downwash that affects stacks at or above GEP height, CALPUFF MDISP option set to 3.
  - These are more substantial than “bug fixes” and deserve public comment.
  - Does NOT require Federal Register notice / public hearing.
  - 90-day comment period; Appendix W not re-opened.
  - 1-year period of testing and debugging of new modeling procedures; additional comments limited to this activity.
  - Final implementation after 1 year (reviewing 90-day comments and results of testing/debugging activities).
  - New techniques can be used immediately, but subject to change due to testing/debugging and public comment.

# Possible 3-Tiered Approach to Degree of Review



- **Tier 3: Bug Fixes or Procedure Clarifications to Appendix W Models**
  - 90-day comment period; Appendix W not re-opened.
  - Period of testing not required, but EPA should always be open to model testing issues that are discovered.
  - New techniques can be used immediately, but subject to change after public comment.
- EPA should allow for the review of alternate modeling approaches via the Clearinghouse without requiring such requests be tied to a permit application.
- Collaborative field experiments with EPA input are encouraged.



- **Modeling Specialty Conference Planned for 2016**
  - Sixth Specialty Conference Sponsored by A&WMA APM
  - April 12-14, 2016
  - Sheraton Chapel Hill in Chapel Hill, NC
- Conference information and Call for Abstracts available at <http://aqmodels.awma.org/>