A Quality Assurance Protocol for Emissions Modeling

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Recent interest in particulate matter (PM) modeling, climate-air quality interactions, and long-range pollutant transport have shifted the application of atmospheric models from episodic to progressively longer time periods. Systematic quality assurance procedures are critical for reviewing the expanding data surrounding these long-term simulations. This presentation defines a framework for performing emissions modeling quality assurance (QA) for large data sets through detailing procedures and the presentation of an organizational infrastructure for checking and documenting emissions modeling. A series of QA classifications cover modeling accuracy and problem identification, software and data accounting, outside review, and documentation. The QA framework begins with the installation of the software and concludes with compiling QA summaries and notes into a final report. This presentation presents details on the types of information required for performing effective QA, specific QA products, and how to archive and document information about the QA process. An electronic docket is associated with this presentation that provides a series of worksheets and checklists for tracking and documenting the QA procedures. Written in the context of SMOKE modeling, the protocol is general enough that it can be extended to any emissions processor.