

US EPA ARCHIVE DOCUMENT

EMISSION INVENTORY
DRAFT CONCEPT/ISSUE PAPER

9/16/98

REVISED OUTLINE FOR:

EMISSION INVENTORY GUIDANCE FOR IMPLEMENTATION OF OZONE AND PARTICULATE MATTER NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) AND REGIONAL HAZE REGULATIONS

Disclaimer

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Acronyms and Abbreviations

1.0 Overview of Document

- 1.1 Purpose: To define required elements of an emission inventory necessary to meet State Implementation Plan (SIP) requirements for complying with the new ozone and particulate matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Regulations. Also to define requirements for compiling and reporting the emission inventories to EPA. In addition, explain that this guidance document replaces all previous guidance prepared to support SIP inventory development for ozone and PM. Emphasize the importance for preparing a single inventory for both pollutants.
- 1.2 Relationship to Emission Inventory Improvement Program (EIIP) Guidance: This section will briefly discuss the difference in the purposes of this guidance document (i.e., this is a requirements document for SIP inventories for the new ozone and PM NAAQS), versus EIIP which functions to standardize emission inventory development approaches through the selection of preferred or alternative emission estimation methods. EIIP compliments the requirements document.
- 1.3 Relationship to the Consolidated Emissions Reporting (CER) Rule: This section will briefly acknowledge the CER rule and its purpose. This section will also explain that this guidance document and the CER rule were developed in parallel, and that the guidance document is being released before the CER rule is published in its final form. Consequently, there is some redundancy between this guidance document and the CER rule. It should be noted that if there are conflicts between this guidance and the rule, that the rule will take precedence.
- 1.4 The point will be made that this guidance does not call for implementation of the PM_{2.5} NAAQS by requiring the submittal of a PM_{2.5} inventory prior to review of the PM_{2.5} NAAQS in 2002. The guidance will encourage states to get an early start on identifying and characterizing their sources of PM_{2.5} by considering PM_{2.5} as they develop their required ozone inventories.

- 1.5 Summary of Document Contents

- 2.0 Regulatory Requirements, Definitions, and Submittal Dates
 - 2.1 Regulatory Requirements: This section will cite SIP regulatory requirements for SIP emission inventories for the new ozone and PM-2.5 NAAQS. The citations will be based on the Clean Air Act (CAA) citations provided in section 51.323(a)(1) and (2) of the Consolidated Emissions Inventory (CER) rule. Pechan will also review the CAA SIP requirements for the NAAQS to make sure that all of the citations for emission inventories are covered. Pechan will also investigate FACA references citing FACA recommendations for preparing ozone and PM-2.5 inventories together to improve accuracy, planning, and modeling.
 - 2.2 Types of Inventories: This section will briefly explain the different types of inventories, and their relationship to each other, discussed in more detail under Chapter 3 (i.e., base year, 3-year cycle, and projection-year attainment demonstration modeling inventories).
 - 2.3 Submittal Dates: This section will explain the SIP submittal dates as specified in the new ozone and PM-2.5 NAAQS. For ozone, the base year will be 1999 (to be submitted in 2000), and every 3 years thereafter. For PM-2.5, will explain that the new PM-2.5 NAAQS cannot be implemented until the CAASAC review of the standard is completed in 2002. Will emphasize the importance of planning for compiling and preparing the PM-2.5 inventory in conjunction with the ozone inventory.
 - 2.4 Inventory Preparation Plan (IPP): This section will explain the purpose of the IPP. Also, it will explain that the States will negotiate the contents of their inventory preparation plans (IPP's) with the EPA Regional Offices, as well as the criteria for approving the plans.
 - 2.5 Inventory Approval: This section will explain the process for EPA's approval (if required) of the state's emission inventory. In general, an inventory will require EPA's approval if it is deemed to be "regulatory significant". The states will negotiate the inventory approval process with the EPA Regional Offices.

- 3.0 Emission Inventory Requirements: A paragraph or two will be included as an introduction to this chapter before Section 3.1 to provide an overview of the purpose of the chapter, which is to identify and explain the key requirements for ozone and PM SIP emission inventories.
 - 3.1 Identification of Inventory Uses

- 3.2 Identification of Inventory Base Year and Periodic Inventories
- 3.3 Pollutants and Pollutant Precursors to be Inventoried: This section will identify the pollutants and their precursors to be included in the emission inventory for ozone (VOC, NO_x, and CO) and PM (PM-10 and PM-2.5 primary, condensable, and secondary [SO₂, NO_x, NH₃, and VOC]). This section will also provide pollutant definitions (e.g., make the point that reactivity will not be considered in developing the inventory, the inventory will be defined by what the measurement methods measure, reactivity will be applied as appropriate in the air quality model; definitions for primary, condensable, and secondary PM). The importance for developing a single, Statewide inventory for both ozone and PM-2.5 will be emphasized.
- 3.4 Identification of Sources and Source Categories to be Inventoried
- 3.5 Geographic Coverage: This discussion will explain the importance for defining the domain for which ozone and PM-2.5 inventories should cover, and the justification for preparing Statewide inventories for both pollutants (e.g., evaluate local versus regional transport effects of pollutants on air quality). The importance for developing a single, Statewide inventory for both ozone and PM-2.5 will be emphasized.
- 3.6 Temporal Basis of Emissions: This section will explain the temporal basis for emissions needed to support modeling and control strategy development. For ozone inventories, peak ozone season and typical operating day emissions will be discussed. For PM inventories, 24-hour and annual PM-2.5 and PM-10 emissions will be discussed. The importance for developing a single, Statewide inventory for both ozone and PM-2.5 will be emphasized.
- 3.7 Rule Effectiveness and Rule Penetration: This section will explain the current policy for applying rule effectiveness and rule penetration (RE/RP) to the development of emission inventories. For ozone inventories the application of RE/RP will be negotiated between each EPA Regional Office and their states. For PM_{2.5} inventories, there is insufficient evidence to draw broad conclusions on the application of RE/RP, therefore, RE/RP will not be applied to PM_{2.5} inventories.
- 3.8 RFP Inventories: This section will be consistent with the RFP guidance currently under development. The section will be eliminated if there is not an inventory option for RFP.
- 3.9 Modeling Inventories: The three sections below will provide guidance to States on how temporal and spatial allocation and chemical speciation of emissions is currently done within the emission preprocessing software and how the States may provide more precise allocation or speciation estimates.

- 3.9.1 Temporal Allocation Procedures
 - 3.9.2 Spatial Allocation Procedures
 - 3.9.3 Chemical Speciation of Emissions
- 4.0 Data Reporting Requirements: The purpose of Sections 4.1 through 4.5 are to document the pollutant reporting thresholds, reporting frequencies, and data elements to comply with the annual, 3-year cycle, and nonattainment area inventories as specified in the CER rule.
 - 4.1 Point Sources
 - 4.1.1 Definition (Type A and B Sources)
 - 4.1.2 Data Elements
 - 4.2 Area Source Data Elements
 - 4.2.1 Definition
 - 4.2.2 Data Elements
 - 4.3 Nonroad Mobile Source Data Elements
 - 4.3.1 Definition
 - 4.3.2 Data Elements
 - 4.4 On-road Mobile Source Data Elements
 - 4.4.1 Definition
 - 4.4.2 Data Elements
 - 4.5 Biogenic and Geogenic Source Data Elements
 - 4.5.1 Definition
 - 4.5.2 Data Elements
 - 4.6 Development of Comprehensive Emission Data Base
 - 4.7 Electronic Data Reporting Requirements: This section will cross-reference EIIP guidance and, if applicable, address other issues identified by EPA not addressed in EIIP guidance
 - 4.8 Summary Data Reporting
- 5.0 Emission Inventory Development: This chapter will cross-reference EIIP guidance where available, and previous emission inventory guidance documents will be referenced where appropriate. For area and mobile sources, this chapter will stress the importance for States to develop the best activity data possible for their 1999 Statewide inventories, and the reasons why (i.e., activity data can be used with future improvements in emission factors, particularly PM-2.5 and NH₃, to revise emission estimates at a later date). The chapter will identify the most important (best) activity data sources, cite the sources, and

explain the timing when each activity data set is typically available. Duplication of EIIP guidance will be avoided.

- 5.1 Point Sources
- 5.2 Area Sources
 - 5.2.1 Non-Fugitive Sources
 - 5.2.2 Fugitive Sources
- 5.3 Nonroad Mobile Sources: EPA's Nonroad Model will be discussed here.
- 5.4 On-road Mobile Sources: Explain that MOBIL6.0 will be used for ozone precursor emissions, and PART5 will be used for PM direct and precursor emissions. Explain when MOBILE6.0 and revised PART5 models will be available.
- 5.5 Biogenic Sources
- 5.6 Geogenic Sources
- 6.0 Quality Assurance/Documentation of the Inventory: This chapter will be brief and cross-reference EIIP guidance for inventory documentation and data handling requirements.
- 7.0 References