



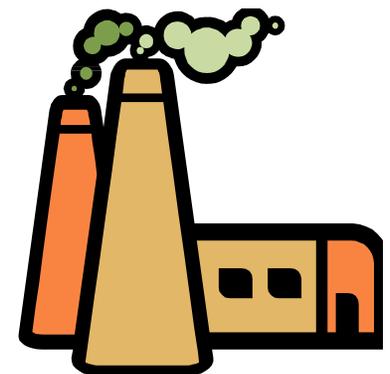
Status of SO₂ Implementation and Modeling Issues

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Briefing Topics

- ✓ Background and Status on the SO₂ SIP Guidance Document.
- ✓ SO₂ SIP Submittals
- ✓ Section 110(a)(1) Maintenance SIP Elements.
- ✓ Control Strategy for Attaining the 1-Hour SO₂ NAAQS
- ✓ SO₂ Threshold Level
- ✓ Criteria for Redesignation to Attainment
- ✓ SO₂ Modeling Guidance

Important Implementation Dates for the 1-Hour SO₂ NAAQS

- **June 2010:** Promulgation of the 1-Hour SO₂ NAAQS
- **June 2012:** Promulgation of Designations
- **August 2012:** Effective Date for Designations
- **June 2013:** SIP Submittals Due for the Section 110(a)(1) Maintenance Plans and the Section 110(a)(2) Infrastructure SIPs
- **February 2014:** Nonattainment Area SIPs Due Date
- **August 2017:** Attainment date for Nonattainment Areas and Unclassifiable Areas Submitting Section 110(a)(1) SIPs

Background

- In the SO₂ NAAQS rulemaking, EPA provided our initial thinking on how states and sources should implement the new 1-hour SO₂ NAAQS.
- EPA indicated that we would provide additional guidance on the section 110(a)(1) maintenance plans and modeling to comply with the 1-hour SO₂ NAAQS, and would take public comment.
- EPA drafted a guidance document to address these issues and are currently taking public comment through a Notice of Availability (NOA) issued on October 3, 2011.
 - The comment period for the NOA will be 30 days. (November 3, 2011)
 - We will revise the guidance as necessary and finalize it this Fall.

SO₂ Rulemaking

- In a parallel effort, we are also drafting a rulemaking on key issues from the SO₂ guidance document. We anticipate proposing the rule in early 2012 and finalizing it by Summer 2012.
- Objectives for the rulemaking:
 - To codify the technical approach for determining the compliance with the 1-hour SO₂ NAAQS.
 - To establish compliance deadlines for the section 110(a)(1) maintenance plans for areas designated as unclassifiable.
 - To establish regulations for the elements that should be included in the section 110(a)(1) SIP submittal.
 - To establish criteria for how areas designated as unclassifiable can be redesignated as attainment.

The SO₂ Nonattainment SIP Submittal

- Once areas are designated nonattainment, states are required to submit SIPs which demonstrate attainment using refined air quality dispersion modeling.
- States are required to submit these SIPs within 18 months of the effective date of designation; under the anticipated schedule, SIPs would be due by February 2014.
- We anticipate the attainment date for nonattainment areas to be by August 2017, no later than 5 years after designation.
- The requirements for nonattainment area SIPs are contained in Part D, Subparts 5 and 1 of the Clean Air Act.

Section 110(a)(1) Maintenance Plans

- For areas designated unclassifiable, we plan to emphasize the use of section 110(a)(1) of the CAA related to the submittal of “maintenance” SIPs.
 - States are to submit these SIPs by June 2013, no later than 3 years after promulgation of the NAAQS.
 - The SIP must demonstrate attainment of the standard as expeditiously as practicable, which should be within 5 years of the effective date of designation, or by August 2017.
 - This is consistent with the attainment dates required for nonattainment areas under Part D, Subpart 5 of the CAA.
 - These submittals must demonstrate attainment using an air quality dispersion model :
 - Any source, or groups of sources, that the Regional Administrator or state determine may be anticipated to cause or contribute to a violation of the NAAQS.
 - However, counties that do not have SO₂ sources, or any large SO₂ sources, may be able to use a non-modeling technical demonstration to show the county or a portion of the county attains the NAAQS.
 - The submittals must also include enforceable emissions limitations, timetables for compliance, and appropriate testing/reporting information to assure compliance of the NAAQS by August 2017.

Section 110(a)(1) Maintenance Plan Elements

- Consistent with providing for “implementation, maintenance, and enforcement of the NAAQS”, we expect these SIPs to demonstrate, through refined modeling:
 - That sources located in these areas that are causing or contributing to a violation will be sufficiently controlled to ensure timely attainment of the NAAQS.
- The SIP submittals should contain the following elements:
 - An attainment demonstration (using air quality dispersion modeling or, in some cases, a non-modeling technical alternative consistent with EPA modeling guidance).
 - An accurate and current emissions inventory
 - An appropriate control strategy for the affected area.
 - A contingency plan
 - A plan for verification of continued attainment.

Control Strategy for Attaining the 1-Hour SO₂ NAAQS

- Several forthcoming national and regional rulemakings will likely result in significant reductions of SO₂ emissions over the next several years.
 - These rules include the Cross-State Air Pollution Rule (CSAPR), the Boiler MACT rule, and the Mercury and Air Toxics Standard (MATS).
- These rules are expected to result in the installation of controls at many of the largest SO₂ sources to meet emissions limits that will help to ensure attainment and maintenance of the 1-hour SO₂ NAAQS.
- States will be able to incorporate these controls into the SIPs for SO₂; however, states will need to adopt emission limits to be consistent with the form of the 1-hour SO₂ NAAQS.

SO₂ Threshold Level

- We are soliciting public comment on establishing a threshold level of some source-related parameters (e.g., emissions) to establish a minimum universe of SO₂ sources to analyze in the attainment demonstration for the SIP.
- We are soliciting comment on whether an emissions threshold level of 100 or more tpy of SO₂ is appropriate to help states better focus their limited modeling resources on sources that are likely to cause or contribute to a 1-hour SO₂ NAAQS violation and impact the most populated areas.
 - Focusing state modeling on point sources emitting 100 tpy or more of SO₂ emissions would account for over 99% of all NEI reported emissions (2008 NEI).
 - Some smaller sources may also cause or contribute to violations of the 1-hour SO₂ NAAQS (i.e., sources with short stacks and/or located in complex terrain). In cases where this is true, the states should add these sources to the attainment demonstration.

Redesignation Criteria for SO₂ Nonattainment Areas and Unclassifiable Areas

- For areas designated as nonattainment or unclassifiable, EPA would apply the redesignation criteria as stated under section 107(d)(3) of the CAA. These criteria are the following:
- EPA has determined that the area has attained the NAAQS:
 - This requirement is satisfied if valid air quality dispersion modeling, and any available monitoring data indicate that the standard is attained.
- The improvement in air quality in the affected area is attributed to permanent and enforceable emissions reductions.
 - All SIP-adopted control measures must be fully implemented to satisfy this requirement.
- For nonattainment areas:
 - EPA has fully approved the part D SO₂ SIP for the affected area.
 - EPA has fully approved a maintenance plan as required under section 175A of the CAA.
- The area has met all other applicable requirements of section 110 of the CAA.

Section 110(a)(2) Infrastructure SIP Elements

- Following the promulgation of any new or revised NAAQS, states must submit a SIP within 3 years which addresses the infrastructure elements A-M of section 110(a)(2).
- We have provided detailed guidance on how states should address the section 110(a)(2) infrastructure elements in their submittal.
- We have developed this guidance in concert with the guidance being developed for the other pollutants (Pb, NO₂, O₃, CO, and PM-2.5) so that the guidance is consistent.

Modeling Guidance for 1-Hour SO₂ NAAQS

- The modeling guidance addresses attainment demonstration modeling for both section 110(a)(1) SIPs and nonattainment areas SIP required under part D, subpart 5 of the CAA
- The modeling guidance includes the following topics:
 - Model selection: AERMOD is EPA's preferred near-field dispersion model.
 - Modeling domain and sources to model:
 - Map sources state-wide to identify potential modeling domains
 - Sources thought to cause or contribute to nonattainment or influence unclassifiable areas.
 - Reasonable initial focus: larger emitters
 - Do not ignore smaller sources especially those with short stacks or located in complex terrain
 - Use of screening modeling to assess smaller and/or relatively isolated sources
 - Use of background concentrations to account for some sources in refined modeling

Modeling Guidance for 1-Hour SO₂ NAAQS

- The modeling guidance includes the following topics:
 - Source input, including use of maximum allowable emissions or federally enforceable permit limits.
 - Accounting for controls from upcoming national rules (CSAPR, MATS and Boiler MACT Rule).
 - Follow guidance in section 8.1 of Appendix W.
 - GEP stack heights
 - Meteorological inputs: 5 years of representative National Weather Service (NWS) data or at least 1 year of site specific meteorology .
 - Inclusion of representative monitored background concentrations and calculation of background concentrations.
 - Monitored design value from most recent 3 years or 99th percentile of hourly concentrations by season, hour of day
 - Use of modeling to determine attainment status for areas.
 - Documentation of requirements.

Modeling webinar

- A modeling webinar has been scheduled for Wednesday Oct. 19, 2011 from 1:00 – 2:00 PM.
- Link: <https://www1.gotomeeting.com/register/355982721>
- Modeling guidance will be discussed in greater detail in webinar

Mapping sources

- Gather state-wide information about SO₂ sources:
 - Emissions, locations, building information.
 - Reasonable to focus on actual emissions and most significant sources of SO₂ (e.g. 100 tons/year).
 - Note that refined dispersion modeling will be based on allowable or permit emissions. Sources may have actual emissions much lower than allowable limits, so it may be prudent to map sources less than 100 tons.
 - States should keep in mind that smaller sources with short stacks or sources located in complex terrain may cause or contribute to a NAAQS violation.
 - States should also use best professional judgment, or act in consultation with Regional Office modelers, to determine emissions threshold for mapping.
- Map sources and SO₂ monitor locations to identify any geographic clusters as potential modeling domains
 - Nonattaining monitors or large sources can be center of potential modeling domain

