Air Quality Actions
Update for Subcommittee on Permits/NSR/Toxics

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Washington, D.C.
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Overview

• NAAQS Update
  – Ozone
  – PM
  – SO₂
  – NO₂

• Transport Rules

• NSR Rule Reconsiderations

• GHG Permitting Update

• Power Plant Mercury and Air Toxics Standards
# Current Schedule for Ongoing NAAQS Reviews

<table>
<thead>
<tr>
<th>MILESTONE</th>
<th>NO₂ Primary</th>
<th>SO₂ Primary</th>
<th>Ozone Reconsideration</th>
<th>CO</th>
<th>PM</th>
<th>NO₂/SO₂ Secondary</th>
<th>Lead</th>
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</thead>
</table>

**NOTE:**

Underlined dates indicate court-ordered or settlement agreement deadlines

### Anticipated NAAQS Implementation Milestones

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>NAAQS Promulgation Date</th>
<th>Designations Effective</th>
<th>110(a) SIPs due (3 yrs after NAAQS promulgation)</th>
<th>Attainment Demonstration Due</th>
<th>Attainment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_2$ (primary)</td>
<td>Jan 2010</td>
<td>No later than Feb 2012</td>
<td>Jan 2013</td>
<td>Aug 2013</td>
<td>Feb 2017</td>
</tr>
<tr>
<td>SO$_2$ (primary)</td>
<td>June 2010</td>
<td>July 2012</td>
<td>June 2013</td>
<td>Jan 2014</td>
<td>July 2017</td>
</tr>
<tr>
<td>Ozone (all dates tentative)</td>
<td>July 2011</td>
<td>No later than Summer 2013</td>
<td>July 2014</td>
<td>No later than Summer 2016</td>
<td>No later than 2019 (moderate)</td>
</tr>
<tr>
<td>CO</td>
<td>August 2011</td>
<td>September 2013</td>
<td>August 2014</td>
<td>September 2015</td>
<td>September 2018</td>
</tr>
<tr>
<td>PM$_{2.5}$ (current review)</td>
<td>TBD</td>
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8-hr Ozone NAAQS Reconsideration

- A final decision in the 2008 reconsideration is scheduled for the end of July 2011
  - CASAC supplemented advice regarding the level of the primary standard as requested
  - Will include final decision on deadline for state designation recommendations
  - Plan to propose Implementation Rule in conjunction with final reconsidered NAAQS

- Designations assistance
  - Guidance memo
  - Source apportionment modeling results
  - Other data relevant to 5-factor analysis
Revisions to Implementation Rule for 1997 8-hr Ozone NAAQS

• RFP credit for emissions reductions outside nonattainment areas
  – Proposed rule December 2010
• Anti-backsliding on 1-hr NAAQS nonattainment NSR major source definitions and offset requirements
  – Proposed rule August 2010
• Classification of former subpart 1 areas under subpart 2
  – Final rule Summer 2011
Draft 2011 Ozone NAAQS Implementation Rule

• Proposed approaches to classifying ozone nonattainment areas
  – Air quality thresholds for Marginal, Moderate, Serious, Severe, and Extreme
  – Impact of options will be illustrated using 2008-2010 air quality data
• Attainment deadlines for each classification
• State Implementation Plan (SIP) schedule and requirements for primary standard nonattainment areas
  – Planning and control requirements currently required for the 1997 NAAQS that must continue to be implemented (i.e., “anti-backsliding” requirements)
• Implementation approach for first-ever separate secondary standard, including classifications and SIP requirements
• Widespread Use of Onboard Refueling Vapor Recovery and Stage II Waiver to be proposed separate from implementation rule
  – Will address waiver of Serious and above area requirements for Stage II vapor recovery systems at gasoline refueling stations
  – Separate guidance memo will address technical aspects of removing existing Stage II from SIPs
**PM$_{2.5}$ NAAQS – 2006 Standard**

- Nonattainment areas established effective December 2009
  - Attainment demonstration SIPs due December 2012

- Working on guidance memo to clarify several issues (preliminary):
  - RFP policy on crediting reductions from outside the nonattainment area
  - Appropriate base year emissions inventory and RFP milestone year inventory (i.e., 2014 and, where applicable, 2017)
  - Reminder that beginning January 1, 2011, PM$_{2.5}$ attainment planning and control strategies must account for condensable PM$_{2.5}$ emissions.
  - Clarify current requirements for what it means to model attainment "throughout the nonattainment area"
  - Which 3 years of AQ monitoring data EPA anticipates using to determine whether an area attains by its attainment deadline and how to qualify for a 1-year attainment date extension

- PSD Program SIP revisions due May 16, 2011
  - Sunset of 1997 PM$_{10}$ Surrogate Policy
For the PM$_{2.5}$ health standards:
- Revising the level of the annual health standard within a range of 11 to 13 µg/m$^3$
  - Staff concludes evidence most strongly supports range from 11-12 µg/m$^3$
  - Retaining the daily standard at 35 µg/m$^3$ would be appropriate if the annual standard were set at 11 to 12 µg/m$^3$; if annual set at 13 µg/m$^3$, consider revising to 30 µg/m$^3$

For the PM$_{2.5}$ welfare standards:
- Concludes it is appropriate to consider setting a distinct secondary PM$_{2.5}$ standard to address visibility impairment primarily in urban areas

For the PM$_{10}$ standards:
- Staff concludes scientific evidence and associated uncertainties could provide support for either retaining or revising the current primary 24-hour PM$_{10}$ standard
  - To the extent consideration is given to revising the standard, staff concludes it would be appropriate to consider a 98th percentile form in conjunction with a level within a range of 85 to 65 µg/m$^3$
  - CASAC recommends revising form to a 98th percentile form in conjunction with a level within a range of 75 to 65 µg/m$^3$

If current review results in new/revised standards, revisions to implementation guidance/rule likely to be proposed in conjunction with the final NAAQS
## Progress on Ozone and PM$_{2.5}$ Attainment

<table>
<thead>
<tr>
<th></th>
<th>8-hr Ozone 2003 designations</th>
<th>1997 PM$_{2.5}$ 2004 designations</th>
<th>2006 PM$_{2.5}$ 2009 designations</th>
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<tbody>
<tr>
<td>Initial Nonattainment Areas</td>
<td>113</td>
<td>39</td>
<td>31</td>
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<tr>
<td>Current Nonattainment Areas</td>
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<td>39</td>
<td>31</td>
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<tr>
<td>Clean Data Determinations</td>
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<tr>
<td>Redesignations Approved</td>
<td>69</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pending Redesignations Requests</td>
<td>6</td>
<td>6</td>
<td>1</td>
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SO$_2$ NAAQS Implementation

- SO$_2$ NAAQS revised June 2010
- SO$_2$ designations guidance issued March 24, 2011

- EPA anticipates an analytic approach that uses both air quality monitoring and modeling for determining compliance with the new SO$_2$ NAAQS
  - Consistent with EPA’s historic practices for SO$_2$ NAAQS implementation
  - Single monitor may generally not be adequate to fully characterize ambient SO$_2$ concentrations around SO$_2$ stationary sources

- Refined dispersion modeling is able to fully characterize SO$_2$ air quality impact from modeled sources
  - Overcomes limitations of an approach based solely on monitoring
SO$_2$ NAAQS Implementation (cont.)

• 110(a)(1) and (2) SIP revisions addressing infrastructure and state-wide “maintenance” due by June 2013
  – Consistent with providing for “implementation, maintenance, and enforcement” of the NAAQS, EPA expects these SIP revisions to demonstrate, through refined modeling, that sources contributing to monitored and modeled violations will be sufficiently controlled to ensure timely attainment and maintenance of the new SO$_2$ NAAQS
  – “Timely” is expected to mean no later than the attainment date for nonattainment areas (o/a August 2017)

• EPA plans to issue additional SIP guidance after an opportunity for public review and comment
  – This will include additional modeling guidance for SIP attainment demonstrations

• Considering rulemaking to establish:
  – Hybrid modeling/monitoring approach for determining attainment
  – Modeling protocol for attainment demonstrations
  – Attainment deadline for “maintenance track” areas
NO₂ NAAQS Modeling Guidance

• NO₂ NAAQS revised January 2010
• Clarification memo on applicability of Appendix W guidance for new 1-hour NAAQS issued in June 2010
• AERMOD is the preferred model for estimating NO₂ impacts in near-field applications (out to 50 km)
  – Alternative models would need approval by EPA pursuant to Appendix W of 40 CFR 51
• Additional guidance issued March 1, 2011
  – Clarifies procedures for analyzing results given probabilistic form of NAAQS
  – Addresses treatment of intermittent emissions (e.g., emergency generators) in PSD modeling demonstrations, a key issue with implementation of the 1-hour NO₂ NAAQS
  – Discussion/recommendations regarding nearby background sources to include in modeling and combining modeled + monitored contributions for cumulative analysis
Pollution Transport Rules

• Transport Rule 1
  – On August 2, 2010 EPA proposed FIPs for 31 states and DC to address the CAIR remand
  – EPA issued three NODAs subsequent to the proposal: January 7, 2011 (allocations methods); Oct 27, 2010 (supplementing the record on emissions inventory data); September 1, 2010 (new version of the IPM model)
  – We anticipate final action by June 2011

• Transport Rule 2
  – Will address, as necessary, the revised 2011 ozone NAAQS
  – Review intended to be national in scope and examine contribution from multiple source categories
NSR RULE RECONSIDERATIONS

PM$_{2.5}$ NSR Rule
Fugitive Emissions Rule
Reasonable Possibility Rule
Aggregation Rule
PM$_{2.5}$ NSR Rule

Petitioners asked EPA to reconsider 4 elements of the final PM$_{2.5}$ NSR Rule:

1. 3-year schedule for SIP revision submittal & policy to continue using PM$_{10}$ surrogate policy in the interim
2. Grandfathering of PM$_{10}$ surrogate policy under Federal PSD program (EPA + delegated states)
3. Transition period for condensable particulate matter (CPM)
4. Interpollutant Trading: Policy allowing precursor offsets for PM$_{2.5}$ emissions increases and EPA-preferred offset ratios for PM$_{2.5}$ precursors
PM$_{2.5}$ NSR Rule

- **Reconsideration of PM$_{10}$ Surrogate Policy:**
  - On April 24, 2009, EPA issued a letter to the petitioners granting the petition for reconsideration in order to allow public comment on each of the four issues raised in the petition and also stayed the grandfathering provision for 3 months
    - Notice of the stay was published on June 1, 2009
  - On May 10, 2011 EPA issued a final rule to repeal the grandfather provision for PM$_{2.5}$ contained in the federal PSD permit program

- **Reconsideration of Condensable PM Waiver**
  - Sought comments on shortening the NSR transition period for CPM in the NPRM for PM Test Method Rule
  - Because of delay in issuing final rule for PM Test Methods, EPA has decided not to take any action on shortening the transition period for CPM
PM$_{2.5}$ NSR Rule

- Reconsideration of Interpollutant Trading Policy:
  - EPA agreed to reconsider on grounds that policy did not undergo public review
  - EPA is reviewing the basis for the recommended precursor trading ratios
  - EPA is also taking into consideration the effects of different NAAQs averaging periods (long-term vs short-term) for using ratios
  - Revised policy is expected to be released shortly
  - In the meantime, states may submit SIP revisions allowing for precursor trades along with appropriate offset ratios (including a technical demonstration of the net air quality benefits of such ratios subject to EPA approval)
PM2.5 Grandfathering

- On February 11, 2010, EPA proposed to repeal the grandfathering provision contained in the Federal PSD program
  - This action cites the fact that the technical difficulties which necessitated the 1997 PM$_{10}$ Surrogate Policy have been largely resolved
- Under the PSD programs for PM$_{2.5}$ currently in effect for SIP-approved states, states would be allowed to continue using the PM$_{10}$ surrogate policy until May 2011, or until EPA approves the revised SIP for PM$_{2.5}$, whichever occurs first
- Page memorandum of March 23, 2010 provides recommendations on two aspects of the modeling procedures for demonstrating compliance with the PM$_{2.5}$ NAAQS:
  - Technical issues that must be addressed by any applicant or permitting authority that is seeking to rely on the 1997 PM$_{10}$ surrogate policy
  - Additional information on modeling procedures to demonstrate compliance with PM$_{2.5}$ NAAQS without relying upon the PM$_{10}$ surrogate policy
Fugitive Emissions Rule

- NSR Applicability for fugitive emissions
- Final Rule issued 12/19/08
  - This rule said to count fugitives only for modifications at “list of 28” sources, consistent with approach for counting new source PTE
- Reconsideration and stay granted 4/24/09
- Policy of including fugitives for all modifications is still in place

Reasonable Possibility Rule

- Requires recordkeeping and reporting when the projected increase in emissions to which the "reasonable possibility" test applies equals or exceeds 50 percent of the Clean Air Act’s NSR significance levels for any pollutant
- Final 12/21/07
- Granted reconsideration (without stay) on 4/24/09
- Proposal scheduled for September 2011
Aggregation Rule

• September 8, 2006: EPA proposed three changes to the NSR program: Aggregation, Debottlenecking and Project Netting
• Final Rule on Aggregation only: January 15, 2009
  – Combine emissions when projects are “substantially related” either technically or economically
  – Debottlenecking rule withdrawn, no action on project netting
• Reconsideration granted February 2009
• The effective date of the final rule is postponed until no fixed date, as allowed under APA section 705, while litigation is pending
GHG PERMITTING
PSD Permitting Steps under the Tailoring Rule

Once the GHG standard for light duty vehicles took effect (January 2, 2011), GHGs became PSD regulated pollutants, but only from the following sources:

**Step 1 January 2, 2011 to June 30, 2011:**
Sources/modifications already subject to PSD “anyway”
*But only if project would also increase GHG by 75,000 tpy CO₂e*

**Step 2 July 1, 2011 to June 30, 2013:**
*Continue Step 1 sources/modifications plus other large GHG emissions sources/modifications*
*New source: 100,000 tpy CO₂e PTE*
*Modification: 100,000 tpy CO₂e PTE and 75,000 tpy CO₂e increase from change*

**Step 3 Rulemaking to conclude no later than July 1, 2012 (and to take effect one year later)**
The permitting threshold in Step 3 could be lower than the permitting threshold in Step 2, but it will be no lower than 50,000 tons CO₂e per year.
EPA Resources to Assist States and Industry

To ensure that GHG permitting runs smoothly for the larger sources that remain covered, EPA has provided the following:

- **Guidance on key GHG Permitting topics (BACT, Biomass, etc.)**
- **White Papers on**
  - utilities, refineries, cement, large commercial/industrial/institutional boilers, pulp and paper, iron and steel, and nitric acid plants
- **Control Technology Clearinghouses**
  - RACT/BACT/LAER
    - GHG Mitigation Strategies
- **GHG Permitting Action Team**
  - Primary and Secondary Contacts for each EPA Regional Office
  - Bi-weekly meetings for Permit Action Team
  - Weekly internal meetings to address and coordinate issues
- **GHG Training for States, Industry and Other Interested Stakeholders**
  - [www.epa.gov/apti/broadcast2010.html#GHGTraining1210](http://www.epa.gov/apti/broadcast2010.html#GHGTraining1210)
- **Website for GHG permitting resources:** [www.epa.gov/nsr/ghgpermitting](http://www.epa.gov/nsr/ghgpermitting)
  - Contains links to White Papers, Clearinghouses, Permitting Action Team, etc.
  - Includes implementation Q&A’s (3 posted; more likely)
  - Includes EPA comment letters on proposed permits involving GHG
GHG Permitting Guidance

• Issued November 2010; technical correction March 2011
• Provides statutory and regulatory background for the permitting and regulation of GHGs
• Explains that the PSD and Title V permitting requirements are generally no different for GHGs
• Emphasizes the importance of developing a good record supporting the BACT decision
• Document is guidance, not a rule
  – EPA and delegated permitting authorities should follow guidance when issuing permits
  – SIP-approved permitting authorities have discretion to establish alternative approaches, as long as they comply with CAA and Federal rules
  – Permitting authorities have the discretion to be more stringent than the policies in guidance
• More information available at http://www.epa.gov/NSR/actions.html
Highlights of Greenhouse Gas Permitting Guidance

• Long-standing and familiar permitting requirements and processes apply to GHGs
  – BACT determinations continue to be state- and project-specific decisions
  – GHG BACT is not prescribed for any source type
• In most cases, energy efficiency improvements will satisfy the BACT requirement for GHGs.
• Carbon Capture and Sequestration (CCS) should be considered an available control option for certain types of sources, but required consideration of costs will likely rule CCS out for now.
• Specific types of fuels or facility design neither required nor precluded
  • A BACT analysis for greenhouse gas emissions does not need to consider a fuel switch that would fundamentally redefine the source.
Biomass and GHG Permitting

- Debate about how to account for CO₂ emissions from bioenergy and other biogenic sources from stationary sources
- In Jan 2011, EPA announced an expedited rulemaking to defer completely the application of pre-construction permitting requirements to biomass-fired CO₂ and other biogenic CO₂ emissions for a period of three years
  - Deferral applies to CO₂ emissions only
  - Proposed deferral published March 2011
- EPA will use this time to conduct a detailed examination of the scientific and technical issues associated with biogenic CO₂ emissions and develop an accounting methodology, including a review by an independent panel
- We will use the results of this study to develop a rulemaking on how biogenic CO₂ emissions should be treated and accounted for in PSD and Title V permitting based on the feedback from the scientific and technical review
Interim Guidance – Biomass Permitting

• In March 2011 EPA issued interim guidance to help permitting authorities establish a basis for concluding that BACT for GHG at some sources is the combustion of biomass fuels alone.
  – May be used in permit actions where deferral is not available
  – May be revisited after biomass study is complete

• Provides a rationale to support elimination of GHG control options during the ‘Energy, Environmental, and Economic Impacts’ portion of the BACT analysis
  – Conclusion to eliminate an option must still be supported in the permit record
  – Applies only to control options being considered for GHG from biomass fuel combustion
    • cannot be used to eliminate control options for GHG emissions from non-combustion processes
Observations Concerning GHG Permits Reviewed by EPA

• Adequate support and explanation of GHG control considerations and decisions
• Inclusion of and adequate support and explanation for form of GHG BACT emissions limit
  – Numerical limit, design standard or some other type of requirement in lieu of numerical limit
• Practical enforceability, compliance monitoring to measure efficiency over time
• Bottom line: documentation of GHG control considerations and BACT limits is very important
• For more information:  www.epa.gov/nsr/ghgpermitting
GHG Permitting: The Year Ahead

• Late June 2011 – Final Action on Biomass Deferral from Permitting
• July 1, 2011 – PSD and Title V begin to apply to large GHG sources (≥100,000 tpy CO2e) and modifications (≥75,000 tpy CO2e) that would not previously have been subject to those programs
• January 2012 – Proposed Tailoring Step 3 Rule
• Spring 2012 – Biomass scientific study released
• July 2012 – Final Tailoring Step 3 Rule (one year for states to adopt)
• Late 2012 – If necessary, proposed rule addressing biomass study
• July 2013 – Tailoring Rule Step 3 goes into effect
• Ongoing – Additional Q&A’s, guidance as necessary
POWER PLANT MERCURY AND AIR TOXICS STANDARDS
Overview of Rule

- On March 16, EPA proposed Mercury and Air Toxics Standards, the first national standards to reduce emissions of toxic air pollutants from new and existing coal- and oil-fired power plants – often the biggest contributors to air pollution
- Standards would reduce emissions of:
  - Metals, including mercury (Hg), arsenic, chromium, and nickel
  - Acid gases, including hydrogen chloride (HCl) and hydrogen fluoride (HF)
  - Particulate matter
- These pollutants are linked to cancer, IQ loss, heart disease, lung disease and premature death
- Standards create uniform emissions-control requirements based on proven, currently in-use technologies and processes
Public Hearings and Comment

• The public is encouraged to provide EPA with comments on this proposed Toxics Rule
• The agency will seek comments for 60 days following publication in the Federal Register and the proposed rule will be available on the website before publication
• Public Hearings held in May 2011 in Philadelphia, Atlanta, and Chicago
• Public Comment period closes 7/5/11