



# Update on NSR Activities

*Modelers' Conference  
June 10, 2008*



# PM<sub>2.5</sub> Final NSR Implementation Rule



## Final Rules

- Signed by Administrator on Thursday, May 8, 2008
- Posted [www.epa.gov/nsr](http://www.epa.gov/nsr)
- FR publication: May 16, 2008
- Effective date: July 15, 2008



# Summary of Requirements

- **General Provisions**
  - PM<sub>2.5</sub> precursors
  - Major source threshold
  - Significant emissions rates: PM<sub>2.5</sub> & precursors
  - Condensable PM
- **PSD Requirements**
  - BACT for PM<sub>2.5</sub>
  - PM<sub>2.5</sub> Increments, SILs, SMC
  - Air Quality Analysis: Modeling & Monitoring
- **Nonattainment NSR Requirements**
  - Offsets: PM<sub>2.5</sub> & Precursors
  - Offset Ratios
  - Interpollutant Trading



# General Provisions

- **PM<sub>2.5</sub> Precursors**

- *SO<sub>2</sub> is always a precursor*

- *NO<sub>x</sub>: “presumed in” precursor -*

*States may submit demonstration that NO<sub>x</sub> emissions in a specific area do not contribute significantly to ambient PM<sub>2.5</sub> concentrations*

- *VOC/ammonia: “presumed out” precursors -*

*States may submit demonstration that VOC and/or ammonia emissions in a specific area contribute significantly to ambient PM<sub>2.5</sub> concentrations*



# General Provisions

- **Major Source Threshold**
  - PSD:
    - 100 tpy for source categories listed in 40 CFR 51.166(b)(1)(i)(a) and 52.21(b)(1)(i)(a)
    - 250 tpy for all other source categories
  - NA NSR
    - 100 tpy for all source categories
- **Significant Emissions Rate**
  - 10 tpy, PM<sub>2.5</sub> emissions
  - Precursors SO<sub>2</sub>, NO<sub>x</sub>, VOC = 40 tpy



# General Provisions

- **Condensable PM (CPM)**
  - NPRM stated that CPM must be accounted for in permits for  $PM_{10}/PM_{2.5}$
  - Based on comments received for NPRM, EPA adopted transition period (TP) to validate CPM test methods
  - EPA recommends that states not require permits to account for CPM for  $PM_{10}/PM_{2.5}$  during TP (states not precluded from addressing CPM in permits)
  - NSR TP ends on a date established in test method rulemaking or 1/1/2011, whichever is earlier
  - After NSR TP ends, NSR permits for  $PM_{10}/PM_{2.5}$  must account for CPM emissions



# PSD Program for PM<sub>2.5</sub>

- **Key Dates**
  - Effective date of PM<sub>2.5</sub> rules
    - 40 CFR 52.21 (EPA & delegated states) - 60 days from date of Federal Register publication
    - 40 CFR 51.166 (SIP-approved state programs) – 60 days from date of FR publication;
  - Implementation date of PM<sub>2.5</sub> program:
    - EPA & delegated states: Effective date of 40 CFR 52.21
    - SIP-approved programs: States have up to 3 years to revise SIP consistent with 40 CFR 51.166; until then states may follow PM<sub>10</sub> surrogate policy



# PSD Program for PM<sub>2.5</sub>

- BACT
  - Applies to emissions units at new major sources where source emits significant amounts of direct PM<sub>2.5</sub>
  - Applies to emissions units that are part of major modification for direct PM<sub>2.5</sub>
  - Applies similarly to precursors—SO<sub>2</sub> and NO<sub>x</sub>



# PSD Program for PM<sub>2.5</sub>

- **Air Quality Analysis**
  - Applicants must demonstrate compliance with PM<sub>2.5</sub> NAAQS
    - Permits issued under Federal PSD program (40 CFR 52.21) must use PM<sub>2.5</sub> on effective date of new rules
    - Permits issued under state PSD program (40 CFR 51.166) may continue using PM<sub>10</sub> surrogate policy until SIPs are revised (States have up to 3 years for SIP revisions)
  - Modeling analysis must consider source impacts consistent with PM<sub>2.5</sub> monitor site requirements and recommendations
  - PM<sub>2.5</sub> increments, SILs & SMC to be finalized by early 2009.
- **Preconstruction monitoring**
  - Applicants must collect ambient monitoring data
    - Permits issued under Federal PSD program must use PM<sub>2.5</sub> data
    - Permits issued under state PSD program may continue using PM<sub>10</sub> surrogate policy until SIPs are revised (3 years for SIP revisions)
  - Representative, existing PM<sub>2.5</sub> data may be used in lieu of new monitoring data
  - EPA is developing a Significant Monitoring Concentration



# PSD Program for PM<sub>2.5</sub>

- Precursors

- Under both Federal PSD program and state SIP requirements
  - SO<sub>2</sub> always a precursor
  - NO<sub>x</sub> is “presumed in”
  - VOC is “presumed out”
- States may demonstrate that NO<sub>x</sub> is not a precursor
- States may demonstrate that VOC is a precursor



# NA NSR Program for PM<sub>2.5</sub>

- **Key Dates**
  - Effective date of PM<sub>2.5</sub> rules
    - 40 CFR part 51 app S - 60 days from date of Federal Register publication
    - 40 CFR 51.165 (SIP-approved state programs) – 60 days from date of FR publication;
  - Implementation date of PM<sub>2.5</sub> program:
    - All states: begin PM<sub>2.5</sub> program on effective date of appendix S; PM<sub>10</sub> surrogate program no longer applies
    - SIP-approved NA NSR rules: States have up to 3 years to revise SIP consistent with 40 CFR 51.165; until then states must follow appendix S requirements for PM<sub>2.5</sub>



## NA NSR Program for PM<sub>2.5</sub>

- LAER, Offsets and other requirements apply to PM<sub>2.5</sub> on effective date of appendix S
- PM<sub>10</sub> surrogate policy for NA no longer applies
- If state is unable to implement via app S, EPA will



## NA NSR Program for PM<sub>2.5</sub>

- Interpollutant Trading (Offsets)
  - Direct PM<sub>2.5</sub> emissions may be offset with reductions of
    - direct PM<sub>2.5</sub> emissions (at least 1:1 ratio)
    - other precursors, e.g.,
      - SO<sub>2</sub>:PM<sub>2.5</sub> @ 40:1
      - NO<sub>x</sub>:PM<sub>2.5</sub> @ 200:1 (east)
      - NO<sub>x</sub>:PM<sub>2.5</sub> @ 100:1 (west)



# NA NSR Program for PM<sub>2.5</sub>

- Precursors
  - **Under appendix S (for interim implementation)**
    - only SO<sub>2</sub> is a precursor
  - **Under requirements for SIPs (40 CFR 51.165)**
    - SO<sub>2</sub> is always a precursor
    - NO<sub>x</sub> is “presumed in”
    - VOC/ammonia are “presumed out”
    - States may rebut precursor presumption by making appropriate demonstration



# New Source Review: “Reasonable Possibility” Reconsideration



# Background Information

- “Reasonable possibility” standard identifies when a source must do recordkeeping and reporting after undergoing a modification that does not trigger major NSR.
- Part of 2002 NSR Reform package
- Court remanded, requiring EPA to either provide an acceptable explanation reconsider or “devise an appropriately supported alternative.”
- EPA repropose on March 8, 2007
  - “Percent increase” trigger
  - “Potential emissions” trigger
- Final action published on Dec 21, 2007



# Redesignation of the Forest County Potawatomi Community Reservation to a PSD Class I Area

- Purpose:
  - Approves the tribe's request to redesignate parts of the tribe's reservation as a Class I area. Reservation is located in Wisconsin.
- Highlights:
  - 1<sup>st</sup> tribe to receive such designation in Region 05; 5<sup>th</sup> in the nation.
  - Final rule finalizes process that started in 1995, when Wisconsin and Michigan objected to the tribe's request and asked for dispute resolution.
  - Agreement reached between the tribe and Wisconsin:
    - identifies various AQRVs that the tribe is seeking to protect
    - requires air quality analysis only for sources locating within 10 miles of the tribe's external boundaries
  - Agreement between the tribe and Michigan was not reached.
- Promulgation on April 29, 2008



# New Source Review: PM<sub>2.5</sub> Increments, SILs, SMC Rule (PSD)



## Background Information -

- NPRM issued on Sept 21, 2007
- We proposed options for increments, SILs, and SMC for PM<sub>2.5</sub>
- Proposed to revoke or replace the annual increments for PM<sub>10</sub>



# Proposed Increments for PM<sub>2.5</sub><sup>1</sup>

Option	Proposed Increments (µg/m <sup>3</sup> )						NAAQS (µg/m <sup>3</sup> )	
	Class I		Class II		Class III		Annual	24-hr
	Annual	24-hr	Annual	24-hr	Annual	24-hr		
1.....	1	2	4	9	8	18	15	35
2A.....	1	2	4	9	8	18		
2B.....	1	2	5	9	10	18		

<sup>1</sup> Increments define the maximum allowable increase in the ambient concentration (over the baseline concentration) of a pollutant in a given area. Existing increments apply to PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>2</sub>.



# Legal Authority: § 166(a) vs. § 166(f)

## §166(a)

- Applies to pollutants for which NAAQS are promulgated after 1977
- Can be used for new NAAQS (for new criteria pollutants) or revisions to existing NAAQS
- Does not require special interpretation to apply to  $PM_{2.5}$
- Used for annual & 24-hr  $PM_{2.5}$  increments under Option 1, and 24-hr  $PM_{2.5}$  increments under Options 2A & 2B

## §166(f)

- Congress added as special authority for new  $PM_{10}$  increments to replace statutory TSP increments
- Requires interpretation to perpetuate use for replacing existing annual  $PM_{10}$  increments with new  $PM_{2.5}$  increments
- Used for annual  $PM_{2.5}$  increments under Options 2A & 2B



# Proposed Increments for PM<sub>2.5</sub>

- Option 1
  - Adopt new annual and 24-hr PM<sub>2.5</sub> increments based on % NAAQS under §166(a) of Act
- Options 2A & 2B
  - Adopt new “equivalent” annual PM<sub>2.5</sub> increments to replace the existing annual PM<sub>10</sub> increments under §166(f) of Act
  - Adopt new 24-hr PM<sub>2.5</sub> increments based on % NAAQS under §166(a) of Act (Option 1)



# Baseline Dates

## §166(a)

- Proposed new baseline dates for annual and 24-hr PM<sub>2.5</sub> increments.
- Proposed using effective date of new rules for “trigger date” and “major source baseline date”
- “Minor source baseline date” by definition is date of first complete PSD application in area (after trigger date).

## §166(f)

- Applies only to annual PM<sub>2.5</sub> increments
- Retain existing baseline dates used for PM<sub>10</sub> (and TSP)
- Requires look-back period to develop PM<sub>2.5</sub> emissions inventory for increment purposes.



# Effective Date/SIP Submittal Date

## §166(a)

- Effective date is 1 year from promulgation
- Require states to adopt and submit PSD SIP revisions within 21 months from promulgation
- Begin implementing Federal PSD program 1 year from promulgation

## §166(f)

- Effective date is 60 days from promulgation
- Require states to adopt and submit PSD SIP revisions within 3 years from promulgation
- Begin implementing Federal PSD program 60 days from promulgation



# Proposed SILs<sup>2</sup>

Option	Proposed SILs (µg/m <sup>3</sup> )					
	Class I		Class II		Class III	
	Annual	24-hr	Annual	24-hr	Annual	24-hr
1.....	0.04	0.08	1.0	5.0	1.0	5.0
2.....	0.16	0.24	0.8	4.0	0.8	4.0
3.....	0.06	0.07	0.3	1.2	0.3	1.2

<sup>2</sup>**Significant impact levels** (SILs) define when a proposed source impact exceeds *de minimis* impact. Impacts exceeding the SIL require (1) comprehensive air quality analysis, and (2) are considered to cause or contribute to a modeled violation of NAAQS or PSD increment. Also, SILs are used to define the significant impact area which determines the distance to be modeled.



# Significant Impact Levels

- Option 1

- Class I – 4% of Class I increments, consistent with  $PM_{10}$  approach
- Class II-III – Use same SILs proposed in 1996 for  $PM_{10}$  and other pollutants

- Option 2

- Use ratio of  $PM_{2.5}:PM_{10}$  emissions

- Option 3

- Use ratio of  $PM_{2.5}:PM_{10}$  NAAQS



# Proposed SMC<sup>3</sup>

- Option 1 – 10  $\mu\text{g}/\text{m}^3$ 
  - Based on lowest detectable concentration (multiplied by 5)
  - Value is same as current SMC for  $\text{PM}_{10}$
- Option 2 – 8  $\mu\text{g}/\text{m}^3$ 
  - Based on ratio of  $\text{PM}_{2.5}:\text{PM}_{10}$  emissions
- Option 3 – 2.3  $\mu\text{g}/\text{m}^3$ 
  - Based on ratio of  $\text{PM}_{2.5}:\text{PM}_{10}$  NAAQS

<sup>3</sup>**Significant monitoring concentration** (SMC) defines when a proposed source impact or existing background air quality is significant for purposes of determining if site-specific ambient monitoring data is needed to conduct the air quality analysis



# PM<sub>10</sub> Increments

- In 1987, EPA promulgated new PM NAAQS by replacing TSP indicator with PM<sub>10</sub>
- In 1990, Congress added §166(f) to PSD requirements to authorize EPA to adopt new PM<sub>10</sub> increments to replace existing statutory TSP increments
  - This addressed the issue of what becomes of the statutory TSP increments when revisions to PM are needed.
  - In 1993, EPA promulgated PM<sub>10</sub> increments to replace the statutory TSP increments
- In 2006, EPA revoked the annual PM<sub>10</sub> NAAQS
  - Revocation of the annual PM<sub>10</sub> NAAQS does not automatically remove annual PM<sub>10</sub> increments since they serve to replace the statutory annual TSP increments



# PM<sub>10</sub> Increments

## §166(a)

- Does not affect PM<sub>10</sub> increments.
- PM<sub>10</sub> increments exist independently under authority of §166(f)
- Annual PM<sub>10</sub> increment not directly affected by revocation of annual PM<sub>10</sub> NAAQS.
- PM<sub>10</sub> increments would continue to serve as replacements for the statutory TSP increments.

## §166(f)

- Establishes “equivalent” increments to replace existing increments.
- We proposed annual PM<sub>2.5</sub> increments via §166(f) to replace annual PM<sub>10</sub> increment
- 24-hr PM<sub>10</sub> increment would remain in effect simultaneously with 24-hr PM<sub>2.5</sub> increments promulgated via §166(a)



# NSR EGU Rule

- Rule would revise the NSR applicability test for modifications at electric generating units (EGUs)
  - This “NSR EGU rule” changes the emissions increase test for existing EGUs, which determines whether a modification at the EGU is subject to major NSR permitting requirements.
  - New EGUs and non-EGU sources remain subject to the existing NSR applicability test (2002 NSR Reform), which is on an annual emissions basis.



# NSR EGU Rule

- Proposed to apply either to emissions-traded pollutants (SO<sub>2</sub> and NO<sub>x</sub>) or to all regulated NSR pollutants.
- Proposed to apply either nationwide or to areas subject to CAIR.
- Goals of the rule are-
  - to assure that the NSR program does not interfere with effective operation of cap-and-trade programs affecting EGUs (e.g., CAIR) and
  - to streamline the preconstruction permitting process for modifications at EGUs.



# NSR EGU Rule

- Proposals were published in the Federal Register October 2005 and May 2007.
  - Original proposal recommended a new, hourly emissions test to determine applicability of a modification to major NSR
  - Supplemental proposal added new option to retain current annual emissions increase test and apply it to situations where EGU hourly emissions increase.
- The final rule will be published by the end of 2008
- Received significant comments; currently evaluating whether to do hourly test with or without annual test
- Final rule projected for Late Summer 2008



# Refinements of Increment Modeling Procedures Rule

- Proposed rule published on June 6, 2007
- Clarifies the status of existing PSD increment guidance
- Addresses how the emissions and meteorology inventory for increment purposes can be developed
- Seeks comment on some of the Western States Air Resources Council (WESTAR) recommendations for improving the PSD program
- Addresses the issue of how a source with a Class I Federal Land Manager (FLM) variance is treated in future modeling
- Promulgation scheduled for Fall/Winter 2008



# Fugitives Reconsideration

- Longstanding Agency policy has been to count fugitive emissions from listed source categories as part of PTE
- 2002 NSR Reform rules specifically codified counting of fugitive emissions from any source as part of calculation of “baseline actual emissions” and “projected actual emissions”
- July 11, 2003 Newmont Mining Corp petition resulted in reconsideration of 2002 requirement for fugitives



# Fugitives Reconsideration

- Notice of Reconsideration published on Nov 13, 2007
- EPA proposed to revise the 2002 provisions to require for any new or modified source that fugitives be counted only for listed source categories
- EPA also proposed to require each SIP, as a minimum element, to specify how fugitive emissions will be accounted for in all aspects of the minor NSR program.
- Final action has been temporarily suspended



# Proposed Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard: NSR Anti-Backsliding

- Court decision (*South Coast*) reversed key NSR provision of Phase I Ozone Implementation Rule
- Restored NSR anti-backsliding component
- Effect is to restore 1-hour NAAQS requirements: Thresholds and offsets
- Preparing proposed rule to address *S. Coast* decision
- Key question is that of how long the restored requirements apply
  - Until 1-hour NAAQS achieved?
  - Until 8-hour NAAQS achieved?



# Timeline

- **Proposal expected late Fall 2008**
- **Final Rule late next Summer 2009**
- **Rule Contact is David Painter @ (919) 541-5515**
- **We will soon be working on the NSR aspects of the 2008 8-hour ozone NAAQS**
- **Want to avoid pitfalls that led to *S. Coast* outcome**



# Review of New Sources and Modifications in Indian Country

- Purpose:
  - **Fills existing regulatory NSR program gaps**
    - There are currently no major nonattainment NSR or minor NSR programs in Indian Country
  - **Highlights of the Proposed Minor NSR Program:**
    - Establishes Minor NSR thresholds (*deminimis* thresholds)
    - Provides the opportunity to request four different types of permits: common permit, source-wide permit (PAL), general permit or synthetic minor permit
    - Allows for case-by-case MACT determinations
  - **Highlights of the Proposed Major Nonattainment NSR Program:**
    - Subjects sources to 40 CFR part 51, Appendix S provisions (nonattainment major NSR rules for areas lacking an approved implementation plan)
    - Provides two options for offset waivers
- Proposal:
  - Published in Federal Register on August 21, 2006
- Promulgation:
  - Scheduled for Spring 2009