NAAQS Reviews and Modeling for Minor New Source Review under the Arkansas Infrastructure SIP

January 22, 2014
AGENDA

I. Introduction of participants – 5 minutes
II. Review of Objectives by Business Community Stakeholders, ADEQ & EPA – 10 minutes
III. Brief overview of CAA and CFR requirements for minor NSR SIPs – 15 minutes
IV. Review of AR SIP elements with focus on minor NSR – 40 minutes
V. Articulation of specific conflicts between Act 1302 and AR SIP – 10 minutes
VI. Wrap up and action items – 5 minutes
VII. Future meetings on this topic? – 5 minutes
II. OBJECTIVES

• Articulate exact conflicts between the AR SIP and Act 1302
• Expectations of ADEQ for this conference
• Expectations of U.S. EPA for this conference
• List of action items following conference
III. OVERVIEW OF CAA AND CFR REQUIREMENTS
§110(a)(2) Infrastructure SIP Elements

(A) Emission Limits and Other Control Measures
(B) Ambient Air Quality Monitoring/Data System
(C) Programs for Enforcement of Control Measures and for Construction or Modification of Stationary Sources *(excluding Nonattainment NSR)*
(D) Interstate Pollution Transport and Abatement; International Air Pollution
(E) Adequate Resources and Authority
(F) Stationary Source Monitoring and Reporting
(G) Emergency Episodes
(H) SIP Revisions
(I) Consultation with Gov’t Officials, Public Notice, Visibility Protection
(J) Air Quality Modeling and Submission of Modeling Data
(K) Permitting Fees
(L) Consultation and Participation by Affected Local Entities
CAA §110(a)(2)(C) Includes
3 Infrastructure SIP Sub-elements

1) **Enforcement** - A program for enforcement of the emission limits and control measures described in 110(a)(2)(A)

2) **Minor New Source Review** - A state-wide program to regulate
   – new construction and modification of minor stationary sources *and*
   – minor modification of major stationary sources
   – A “PSD major source” is often subject to *minor* NSR
   – All Title V (Reg. 26) minor permit modifications and many significant permit modifications are PSD minor modifications, even when the source is a major PSD source

3) **Major New Source Review** – A preconstruction permitting program to regulate
   – new construction of major stationary sources *and*
   – major modification of major stationary sources
   – in areas designated attainment or unclassifiable for the subject NAAQS as required by CAA Title I Part C (i.e., PSD)
What is the federal legal basis for “NAAQS Review” in permitting?

• **Section 110(a)(2)(C) of the CAA**
  
  – “a program to provide for the...regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that the national ambient air quality standards are achieved, including a permit program as required in parts C and D;”

• **40 CFR 51.160(a)**
  
  – “procedures...to determine whether the construction or modification of a facility...will result in a violation of applicable portions of the control strategy; or interference with attainment or maintenance of a national standard...”
What is New Source Review (NSR)?

- A program to review the construction and modification of minor and major stationary sources, *as necessary*, to assure that SIP control measures are met and that the NAAQS are achieved.
- NSR often involves a case-by-case permitting review at the time of initial construction and/or modification of a stationary source.
- NSR requirements are sometimes met programmatically without a case-by-case review and/or without issuance of a permit.
- Depending on the specific circumstances, NSR may include:
  - Control technology reviews (e.g., RACT, BACT, LAER)
  - Emission reduction offset requirements (e.g., NNSR offsets)
  - Ambient monitoring
  - Dispersion modeling
  - Visibility and other impacts analyses
- Major NSR is comprised of highly prescribed requirements.
- Minor NSR varies widely from state to state.
What is Major NSR?

• Major NSR applies to
  – The initial construction of a stationary source with PTE equal to or greater than the PSD and/or NNSR major source thresholds
    • Includes a change to an existing minor source if the change would constitute a major source by itself
  – The major modification of a PSD or Nonattainment major stationary source
    • Project emissions increase and net emissions increase are equal to or greater than the PSD and/or NNSR significant emission rates

• Major NSR includes
  – Prevention of Significant Deterioration (PSD)
    • For any pollutant for which a NAAQS is established or any precursor of the NAAQS pollutant, PSD applies in attainment and unclassifiable areas
    • PSD also applies to NSR-regulated pollutants for which there is no NAAQS (e.g., H₂S)
  – Nonattainment NSR (NNSR)
    • For any pollutant for which a NAAQS is established or any precursor of the NAAQS pollutant, NNSR applies in designated nonattainment areas
    • Both PSD and NNSR can apply simultaneously to the same project for different NAAQS
What is Minor NSR?

• “The procedures [SIP] must identify the types and sizes of facilities...which will be subject to review...” 40 CFR 51.160(e)

• Generally, Minor NSR applies, as specified in the applicable SIP, to
  – The construction of any minor stationary source (i.e., with PTE less than the applicable PSD/NNSR major source thresholds)
  – The modification of any minor stationary source
  – The modification of any major stationary source resulting in emissions increases less than the applicable PSD/NNSR significant increase thresholds

• Minor NSR requirements
  – May include a case-by-case permit review and issuance
  – May include controls or other substantive requirements
  – May include modeling, source testing, or monitoring
  – Vary widely from state to state
Minor NSR Flexibility
Excerpts from U.S. Court of Appeals 5th Circuit, 2012
Luminant Generation Company, LLC et al vs. EPA

• In stark contrast [to major NSR] the CAA prescribes only the barest of requirements for “minor” NSR
• For minor NSR, the Act requires simply that each SIP “include . . . regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that [NAAQS] are achieved.” 42 U.S.C. § 7410(a)(2)(C).
• The implementing regulations for minor NSR are likewise sparse, spanning less than two pages in the Code of Federal Regulations. See 40 C.F.R. §§ 51.160–51.164.
• The EPA has recognized that because “the Act includes no specifics regarding the structure or functioning of minor NSR programs” and because the implementing regulations are “very general[,] . . . SIP-approved minor NSR programs can vary quite widely from State to State.” 74 Fed. Reg. 51,418, 51,421 (Oct. 6, 2009).
• Minor NSR is “a cooperative federalism regime that affords sweeping discretion to the states to develop implementation plans and assigns to the EPA the narrow task of ensuring that a state plan meets the minimum requirements of the Act.”
Examples of Minor NSR occurring without case-by-case permit reviews

• General permits
• Permits by rule
• Construction of a stationary source with emissions below SIP-established permitting thresholds
• Physical changes and changes in the method of operation at a stationary source resulting in increases below SIP-established permitting thresholds
• Insignificant activities

*In all of these examples, the “NAAQS Review” occurs on a programmatic basis*
Arkansas SIP
What is the Arkansas Approved SIP for New Source Review?

1. Major NSR (PSD)
   EPA approved Regulation 19, Chapter 9 as meeting 40 CFR 51.165

2. Minor NSR is divided into 2 categories
   A. Major source review (Title V Non-PSD NSR or Reg. 26 Sources)
   B. Minor source review (Non-Title V Minors or Reg. 19 Sources)
What is the Arkansas Approved SIP for New Source Review? (continued)

2. Minor NSR

A. Major source review (Title V Non-PSD NSR, or Reg. 26 Sources)

• Includes construction of sources that are “major” as defined under Title V of the CAA, but “minor” as defined under PSD

• Includes modification of “major” sources as defined under Title V (including “major” PSD sources) but for which the modification results in emissions increases that are less than the PSD significant increase thresholds

• EPA approved as meeting 40 CFR 51.160 – 51.164 requirements for NSR:
  – Reg. 19 Chapter 11 (which incorporates parts of Reg. 26 by reference);
  – Reg. 19.302 and 19.303
  – Reg. 19.502 and 19.504
What is the Arkansas Approved SIP for New Source Review? (continued)

2. Minor NSR

B. Minor source review (Non-Title V Minors, or Reg. 19 Sources)

- Includes construction and modification of sources that are “minor” as defined under Title V of the CAA
- EPA approved as meeting 40 CFR 51.160 – 51.164 requirements for NSR:
  - Reg. 19 Chapter 4;
  - Reg. 19.303; and,
  - Reg. 19.502 and 19.504
When is a case-by-case “NAAQS Review” required under the Arkansas SIP?

• What is meant by a “NAAQS review”?  
  – A review “to determine whether the construction or modification of a facility...will result in...interference with attainment or maintenance of a national standard...” (40 CFR 51.160(a))

• The SIP requirement for conducting a NAAQS review and the level of rigor of the NAAQS review are contingent on the environmental significance of the construction or modification proposed

• A case-by-case NAAQS review is not required for several categories of sources and changes that have trivial environmental impact
The Arkansas NSR NAAQS Review Pyramid

- Major NSR (modeling required)
  - Case by Case Minor NSR (modeling not required)
  - Programmatically Exempt

PSD Review
- Reg. 19 and Reg. 26 Non-PSD Initial Source Construction
- Reg. 19 and Reg. 26 Mods de minimis < increase < PSD
- Reg. 19 Mods w/inc. < de minimis rates
  - Reg. 26 Mods w/increases < 26.1002 minor modification rates
- Changes that are not “construction or modification”
- Changes to State-only Permit Terms
- Exemptions and Insignificant Activities
A NAAQS Review is NOT Required for...

Exemptions and Insignificant Activities

- Changes and Activities Exempt from Permitting
  - Construction of or changes to sources with emissions below the Reg. 18.315 registration thresholds
  - Construction of or changes to sources with emissions below the Reg. 19.401 permitting thresholds
  - Insignificant Activities
  - Changing among Alternative Operating Scenarios
  - Changes resulting in no emission increases (Reg. 19.415 and 26.802)
  - Changes that involve a physical change or change in the method of operation but do not result in an increase in emissions over permitted rates

No NAAQS review is required because the approved SIP has identified these categories as exempt from NSR procedures, i.e., exempt from a case-by-case NAAQS review
A NAAQS Review is NOT Required for...

Changes to State-only Permit Terms

No NAAQS review is required because federal NSR requirements do not apply to state-only terms

Permits for changes at Reg. 19 or Reg. 26 sources that do not involve “construction or modification”, such as

- Administrative Amendments
- Reg. 19.407(C) De minimis changes
- Reg. 26 minor modifications that satisfy Reg. 19.407 de minimis criteria
- Reg. 26 significant modifications involving only changes to monitoring, recordkeeping, reporting or adding an applicable requirement
- Modifications resulting in emissions increases only of non-NAAQS pollutants
- Changes that increase emissions but do not involve a physical change or change in the method of operation

No NAAQS review is required because federal NSR requirements only apply to the construction and modification of stationary sources
A NAAQS Review is NOT Required for...

- Modifications at Reg. 19 or Reg. 26 sources
  - with emissions increases below the respective de minimis or minor modification emission thresholds
  - Includes some permit revisions under
    - Reg. 19, Chapter 4, Minor Source Review
    - Reg. 26.1010, Significant Modifications
- All Reg. 26.1002 Minor Modifications are programmatically exempt from NAAQS Review

No further NAAQS review is required because the approved SIP has already made a programmatic determination that de minimis increases have a trivial environmental impact
A NAAQS Review is required for...

- Modifications at Reg. 19 or Reg. 26 sources
  - with emissions increases over permitted rates greater than or equal to the de minimis/Minor Modification thresholds, but which do not trigger PSD review
  - Includes *some* permit revisions under
    - Reg. 19, Chapter 4, Minor Source Review
    - Reg. 26.1010, Significant Modifications
  - No programmatic determination for these minor NSR modifications
  - The permit review must consider whether the modification would interfere with attainment or maintenance of the NAAQS
  - Modeling is not explicitly required by the AR SIP, 40 CFR or CAA
A NAAQS Review is required for...

- **Initial permit for construction of a Reg. 26 source (Title V non-PSD)**
  - With PTE equal to or greater than Reg. 26 major source thresholds but less than PSD major source thresholds
  - Includes all permits for initial source construction under Reg. 26.404 with emissions of NAAQS pollutants

- **Initial permit for construction of a Reg. 19 source (non-Title V Minors)**
  - With PTE equal to or greater than Reg. 19.401 permitting thresholds but less than Title V major source thresholds
  - Includes all permits for initial source construction under Reg. 19.401 with emissions of NAAQS pollutants

- No programmatic determination for these minor NSR modifications
- The permit review must consider whether the modification would interfere with attainment or maintenance of the NAAQS
- Modeling is not explicitly required by the AR SIP, 40 CFR or CAA
A NAAQS Review is required for...

- Initial permit for Construction of a PSD major source
  - PTE greater than the PSD major source thresholds
  - Includes a change to an existing minor source if the change would constitute a major source by itself
- The major modification of a PSD major stationary source
  - Project emissions increase and net emissions increase are equal to or greater than the PSD and/or NNSR significant emission rates
- A detailed NAAQs Review is specifically prescribed by the SIP, CFR and CAA for each pollutant triggering review
  - Ambient Air Quality Impact Analysis (AAQIA) is required
  - Modeling is specifically required
- Class I impact analysis is required
- Other impacts analysis is required
- Must follow Reg. 19 Chapter 9 in addition to Reg. 26
Reg. 26 Permitting and NSR
NAAQS Review Requirements

• Initial permit for a proposed Part 70 stationary source, Reg. 26.404
  – NAAQS review based on PSD modeling required if proposed source is major under PSD, for any PSD pollutant above significance thresholds
  – NAAQS review required for any other NAAQS pollutant with emissions above de minimis threshold, but modeling not required

• Administrative permit amendments, Reg. 26.901
  – No NAAQS review required

• Minor permit modifications, Reg. 26.1002
  – No NAAQS review required
Reg. 26 Permitting and NSR
NAAQS Review Requirements (continued)

• Significant permit modifications, Reg. 26.1010
  – NAAQS review based on PSD modeling required if proposed change is a major modification under PSD, for any PSD pollutant above significance thresholds
  – NAAQS review required for any other NAAQS pollutant with emissions above de minimis threshold, but modeling not required
  – No NAAQS review required for NAAQS pollutants with increases less than de minimis
  – No NAAQS review required for any NAAQS pollutant if the proposed change is not a physical change or change in method of operation with increases greater over permitted rates

• Title V Permit Renewals
  – No NAAQS review required unless the renewal will authorize construction or modification otherwise subject to a NAAQS review
How is a NAAQS review performed for minor NSR changes?

The NAAQS review can be satisfied by consideration of several factors, such as:

• The level of the emissions increase
  – in comparison to the de minimis thresholds or PSD significance thresholds,
  – in comparison to the facility PTE or area-wide emissions inventory, and/or
  – in comparison to previous NAAQS evaluations.

• The location of the construction or modification
  – in an attainment or unclassifiable area,
  – in relation to other pollutant-emitting activities or industrial sources,
  – in relation to ambient monitoring stations, and/or
  – in relation to potentially sensitive receptors

• The nature of the source or emissions unit
Impact of Act 1302 on SIP Implementation

• The approved SIP does not require a NAAQS review for many permitting actions for which ADEQ was routinely conducting modeling
• For minor NSR changes for which the SIP does require a NAAQS review as part of the permitting process, modeling is not required to conduct the review
• The SIP requires modeling as part of the permit review only for PSD permitting
• Act 1302 does not affect PSD permitting and does not restrict ADEQ from conducting NAAQS reviews for minor NSR
Remaining Agenda Items

V. Articulation of specific conflicts between Act 1302 and AR SIP – 10 minutes
VI. Wrap up and action items – 5 minutes
VII. Future meetings on this topic? – 5 minutes