

US EPA ARCHIVE DOCUMENT

PSD Permit Modeled Violations

EPA Region 4/State/Local Modelers Workshop

Brenda Johnson

November 3-5, 2014

PSD PERMITTING

- PSD permitting does not prevent sources from developing or increasing emissions.

- PSD is designed to:

- protect public health and welfare;
- preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value;
- assure that any decision to permit increased air pollution in any area is made after careful evaluation of all the consequences of such a decision and after informed public participation in the decision making process.

**NAAQS –Increment
Compliance**



PSD Air Quality Modeling

- The primary purpose of an air quality dispersion modeling analysis is to demonstrate that all applicable National Ambient Air Quality Standards (NAAQS) and/or Prevention of Significant Deterioration (PSD) increments will be met after operation of the proposed construction or modification.
- Procedures outlined in the Code of Federal Regulation (CFR) Title 40, Part 51, Appendix W (Guideline On Air Quality Models) should be followed when conducting an analysis.
- Many Region 4 State Implementation Plans (SIPs) use EPA Guideline on Air Quality Models in their permitting programs (e.g., AL, TN, KY....) as a regulation to follow in permitting



**Model predicted violation(s)
in permit modeling?**

Yes

No

**Are Applicant's
concentration(s) < SIL(s)?**

**Issue Permit, if all else is
acceptable**

Yes

No

1. Issue Permit, if all else is acceptable
2. State must resolve violation(s).
3. SIP revision could be required

1. No Permit may be issued.
2. Unless compensating offsets for applicant's significant emissions are required.
3. SIP revision could be required.

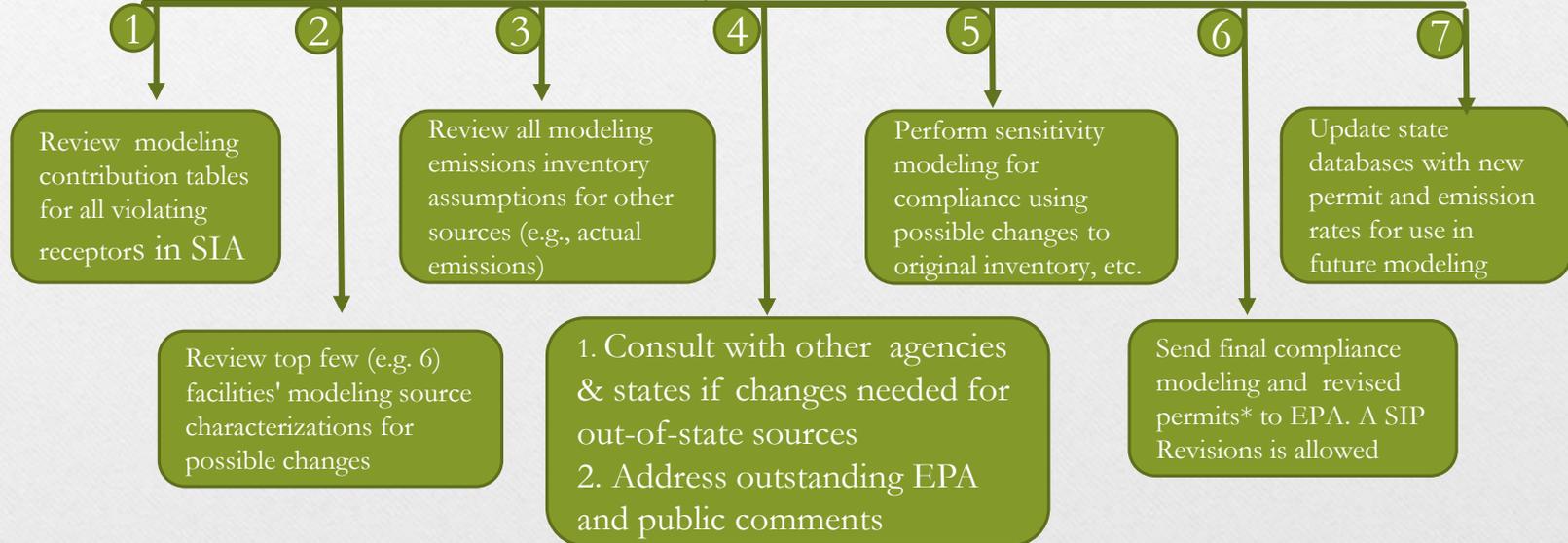
PSD Permit Modeled Violations

- NAAQS or PSD increment modeled violation(s) can be predicted within the impact area.
 - If the proposed source will not have a significant impact (*i.e.*, will not be above de minimis levels), it may be issued a permit (even when a new violation would result from its insignificant impact).
- The State must also take the appropriate steps to substantiate the NAAQS or increment violation and begin to correct it through the State implementation plan (SIP).
- The EPA Regional Offices' should establish with the State agency a timetable for further analysis and/or corrective action leading to a SIP revision, where necessary.
- Source: **Air Quality Analysis for Prevention of Significant Deterioration (PSD)**, July 5, 1988 from Gerald A. Emison,
(<http://www.epa.gov/scram001/guidance/mch/saq1.txt>)

One Scenario To Resolve Violations

Permit with modeled violations issued after informed public participation in the decision making process

- Applicant can start construction.
- But the State must continue to develop NAAQS and/or increment compliance modeling



*** If actuals are used and needed in modeling, should make them the new allowables in permits**

PSD Modeled Violations

- Review modeling assumptions (review emissions inventory and emissions data. For example:
 - If the predictions are the result of emissions from off-property sources, the applicant/state may need to contact those sources to refine or update the emissions inventory.
 - Review sources characterizations (e.g., stack locations, operating parameters, property lines; and hours of operation, etc.)
- Develop and submit to EPA a protocol or methodology to resolve modeled violations.
- States have options on what, if any, control strategy is required to demonstrate compliance.
- Ultimate goal is to show compliance with the NAAQS and/or PSD Increment in a timely manner.

Modeled Violations in PSD Permits Resolution

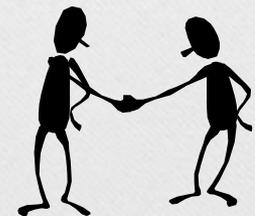
- Had discussions with all Region 4 State and Local permitting authorities
- Permits identified for discussion:
 - Tennessee - 1 permit for 1-hr NO₂
 - Shelby County, TN - 1 permit for 1-hr SO₂
 - Georgia - 2 permits for 1-hr NO₂
 - Mississippi - 3 permits for 1-hr SO₂ and 1-hr NO₂
 - Kentucky - 1 permit for 1-hr SO₂ and 1-hr NO₂
- Progress Being Made!
 - Tennessee, Shelby County, TN and Georgia are all on board, have begun assessment, and provided early results in September 2014 calls.
 - Mississippi is working towards a November early assessment date.
 - Kentucky is amenable to the process for their one permit but expressed concern over limited staff resources, PM_{2.5} monitors not violating, other regulatory modeling requirements. Requested help from EPA.

Permit Facility name	State	City	County	Violations Modeled	Violations (pollutants)
Roxul USA	MS		Marshall	NAAQS	1-hr SO2 and 1-hr NO2
Roxul USA September 2013	MS		Marshall	NAAQS	1-hr SO2 and 1-hr NO2
Mississippi Silicon	MS				
Pyramax 2011 - King's Mill	GA	Wrens	Jefferson	NAAQS	1-hr NO2
Pyramax - King's Mill Modification 2012	GA	Wrens	Jefferson	NAAQS	1-hr NO2
Carbo Ceramics	GA	Millen	Jenkins	NAAQS	1-hr NO2
US Nitrogen	TN			NAAQS	1-hr NO2
Nucor Steel Memphis	TN		Shelby	NAAQS	1-hr SO2
Riverside Generating	KY			NAAQS	1-hr SO2 and 1-hr NO2

Modeled Violations in PSD Permits Resolution

(cont.)

- EPA has not set a deadline by which the outstanding violations are to be addressed.
- However, modeled violations should not go unresolved/unaddressed for extended periods or it could result in litigation risk for permitting authority.
- Some consultation with other states may have to occur
 - E.g., when significant contributors to violations are from out-of-state companies.
- Process may involve revisions to permit(s) to ensure compliant NAAQS modeling.
- This project will help in future modeling applications, not only those involving permitting.



Draft Recommended Steps

Over next few months, (e.g., two months after initial presentation on EPA monthly call)

- Review past permits with outstanding NAAQS/Increment modeled violations ✓
- Review permits developed using actual emissions for nearby and/or applicant emissions ✓
- Develop a list of permits with violations needing assessment and/or resolutions ✓
- Send list to EPA after it is developed (e.g., after two months from initial EPA calls) ✓
- Reassess source contribution data, modeling inventory, remodel, etc. (in progress)
- Develop a draft plan to assess those outstanding violations for causes and resolution in a timely manner.
 - May involve communications with other states



Benefits and Outcomes

- SIP complies with NAAQS and PSD Increments.
- Update agency point source databases with updated emissions rates, emissions limits, source characterization, etc.
- Share revised information with future applicants
- Newer NAAQS (i.e., 1-hr SO₂, NO₂, PM_{2.5}) offers opportunities and presents issues

What's in it
for you?



Questions?

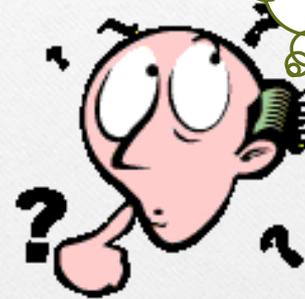
What did she say?



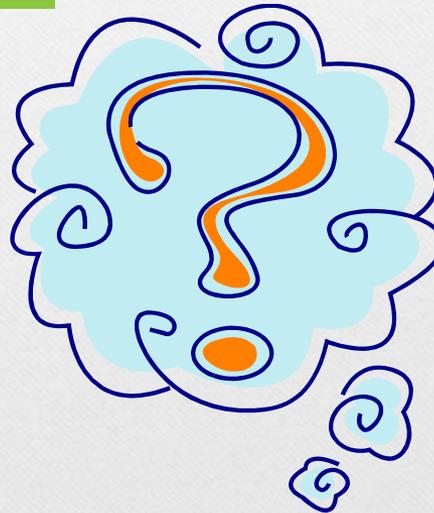
What is SIP?



What is a NAAQS?



I fell asleep. What did I miss?



Glad that's over!

