

Revisions to the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas (GHG) Permitting Regulations and Establishment of a GHG Significant Emission Rate (SER): Proposed Rule

United States Environmental Protection Agency
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Overview

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- PSD and Title V Permitting for GHGs
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Poll Question #1

PSD and Title V Permitting

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- **The PSD preconstruction permitting program**
 - Found at 40 CFR Part 51.166 and 52.21
 - Ensures the maintenance of air quality standards through the installation of state of the art control technology when major stationary sources are constructed or modified.

- **The title V operating permits program**
 - Found at 40 CFR Part 70 and 71
 - Is a vehicle for consolidating and assuring compliance with the applicable air quality control requirements. It generally does not impose new air quality control requirements.

New Source Review (NSR) Program

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- Program **established as part of 1977 Clean Air Act (CAA) Amendments.**
- Purpose of the program is to **protect public health and the environment** as new industrial facilities are built and existing facilities expand.
- Purpose is accomplished through **pre-construction permits known as NSR permits**, which list, among other requirements: what type of construction is allowed, what emission limits must be met, and how the industrial facility must be operated.
- Any new industrial facility may be required to obtain an NSR permit **if its potential to emit (PTE) of one or more air pollutants is equal to or higher than certain pre-established thresholds.**
- NSR permits are **issued by EPA, state, local or tribal agencies** depending on which entity has permitting jurisdiction for a particular area.
- The NSR program is divided into **three parts** with different requirements for each:
 - ▣ (1) Major NSR program in attainment areas (Prevention of Significant Deterioration (PSD)), (2) Major NSR program in nonattainment areas and the (3) minor NSR program in all areas

Requirements under Each Part of the NSR Program

Requirements	PSD	NA NSR	Minor NSR
Regulated Pollutants	<ul style="list-style-type: none"> NAAQS, GHGs and other pollutants such as sulfuric acid mist and hydrogen sulfide 	<ul style="list-style-type: none"> NAAQS only 	<ul style="list-style-type: none"> NAAQS and other pollutants at the discretion of each permitting authority
Thresholds	<ul style="list-style-type: none"> New sources with PTE equal to or higher than 100 or 250 tons per year (tpy). <ul style="list-style-type: none"> 100 tpy threshold applies to 28 source categories Modifications use lower emissions thresholds (i.e., significant emission rates (SERs)) 	<ul style="list-style-type: none"> New sources with PTE equal to or higher than 100 tpy. Ozone thresholds are lower depending on nonattainment severity. Modifications use lower emissions thresholds (SERs) 	<ul style="list-style-type: none"> Sources with air emissions below major NSR thresholds
Permitting Requirements	<ol style="list-style-type: none"> Install <u>Best Available Control Technology (BACT)</u> <ul style="list-style-type: none"> This is the only requirement that may apply to sources that emit GHGs and only if the source emits another non-GHG pollutant above the major source emission limits. Perform <u>air quality analysis</u> to assess impacts on air quality increments Perform <u>class I area analysis</u> to assess impacts on national parks and wilderness areas Perform <u>additional impacts analysis</u> 	<ol style="list-style-type: none"> Install <u>Lowest Achievable Emission Rate (LAER)</u> technologies Obtain <u>emission offsets</u> Perform <u>alternative sites analysis</u> Show <u>statewide facility compliance w/air regulations</u> 	<ul style="list-style-type: none"> Per CAA, major requirement is attainment or maintenance of the NAAQS EPA's regulations contain minimum requirements, therefore, State, Local and Tribal programs vary greatly <ul style="list-style-type: none"> Many allow for synthetic minor permits: A limit on the source's emissions permit conditions to avoid PSD or nonattainment NSR requirements

Title V Operating Permits Program

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- Established by Clean Air Act (CAA) Amendments of 1990
- Objective is to improve compliance with CAA
- Combines all applicable requirements into single permit
- Allows for better enforcement of CAA requirements
- Enhanced public participation in the permit review process
- Establishes self-funding adequate to run effective programs
- In most cases, state or local agencies are the permitting authority, not EPA

PSD and Title V Permitting for GHGs

- On June 3, 2010, the EPA published the final **Tailoring Rule**.

- The **Tailoring Rule** phased in the GHG PSD and title V permitting requirements and set GHG emissions thresholds that define when permits under these permitting programs were required based on the level of GHG emissions from a new or modified source.
 - **Step 1 (January 2, 2011 to June 30, 2011)** only applied to sources that were already required to obtain a PSD or title V permit (i.e., “anyway sources”).
 - **Step 2 (on or after July 1, 2011)** extended the PSD and title V requirements to sources that only emitted GHGs if those emissions exceeded certain levels.
 - **Step 3 (issued on June 29, 2012)** retained the permitting thresholds that were established in Steps 1 and 2 and improved the usefulness of plantwide applicability limitations (PALs) by, among other things, allowing GHG PALs to be established on a carbon dioxide equivalent (CO₂e) basis.
 - In general, a PAL is a facility-wide permit limit or cap for a regulated NSR pollutant.
 - **Step 4** would have required EPA to study and consider further phasing-in the GHG permitting requirements at lower GHG emission thresholds.

Tailoring Rule Litigation

- On June 23, 2014, the U.S. Supreme Court issued a decision in ***Utility Air Regulatory Group v. EPA*** that held that the EPA may:
 - Not treat GHGs as an air pollutant for the specific purpose of determining whether a source is required to obtain a PSD or title V permit. In other words, the Supreme Court invalidated Step 2 of the Tailoring Rule.
 - Continue to require “anyway sources” to conduct a BACT analysis for GHGs and recognized EPA’s authority to limit the application of BACT to those situations where a source has the potential to emit a pollutant, including GHGs, above a specified threshold (or *de minimis*) level which the EPA would have to establish.

- On April 10, 2015, the D.C. Circuit issued an Amended Judgment in ***Coalition for Responsible Regulation v. EPA*** that:
 - Identified the permitting regulations that were vacated by *UARG v EPA*.
 - Ordered EPA to rescind or revise the vacated provisions “as expeditiously as practicable” and consider whether further revisions are appropriate in light of the Supreme Court decision. No timeline described.

Regulatory Revisions to Date in Light of the Litigation

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- In April 2015, the EPA issued a final rulemaking revising the EPA's PSD regulations at 40 CFR Part 52 to enable the EPA and delegated permitting authorities to rescind EPA-issued **Step 2 PSD permits**.
 - Direct Final Rule – 80 FR 26183 Parallel Proposal – 80 FR 26210.

- In August 2015, the EPA issued a good cause final rule that amended the PSD and title V regulations to remove those **vacated provisions** that could be removed from the regulations through a ministerial action.
 - Final Rule – 80 FR 50199.
 - The removed regulations included portions of Step 2 of the Tailoring Rule as applicable to the PSD program, and the portion of the PSD and title V regulations that required EPA to study and consider further phasing-in the GHG permitting requirements at lower GHG emission thresholds.

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Poll Question #2

Proposed Rule

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- The proposed rule mainly does two things:
 - ▣ Proposes to **remove or revise certain regulatory provisions** from the PSD and title V regulations to fully conform those regulations to the Court decisions
 - ▣ **Proposes a 75,000 tpy CO₂e Significant Emission Rate (SER) for GHGs.**
 - The SER will establish a *de minimis* level below which BACT is not required for “anyway sources.”

Proposed Regulatory Revisions

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- To ensure that sources that only emit or have the potential to emit GHGs above the major source applicability thresholds are no longer required to obtain a PSD or title V permit, the rule revises:
 - Certain PSD and title V definitions
 - **PSD:** definitions of major stationary source, major modification and subject to regulation
 - **Title V:** definition of major source and subject to regulation
 - The GHG Plantwide Applicability Limitations (PAL) provisions
 - Mainly to eliminate any references to GHG-only sources
 - A few state-specific PSD permitting provisions
 - Provisions in the states of Minnesota, Texas, Wisconsin that were mainly put in place to incorporate the Tailoring Rule Step 2 GHG permitting thresholds

Proposed Regulatory Revisions (Continued)

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□ The proposed rule also:

- Removes certain **“narrowing” provisions for 33 state and local title V programs** (Appendix A to Part 70, see list on right)
- Revises the PSD program definition for the term **“significant” to add the proposed GHG SER level.**

- Alabama
- California
- Colorado
- District of Columbia
- Georgia
- Hawaii
- Illinois
- Iowa
- Kansas
- Louisiana
- Maine
- Maryland
- Minnesota
- Mississippi
- Missouri
- Nebraska, City of Omaha
Lincoln Lancaster County
Health Dept.
- Nevada
- New Hampshire
- New York
- Ohio
- Oklahoma
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Utah
- Vermont
- Virgin Islands
- Virginia
- Washington
- West Virginia
- Wisconsin

Establishment of GHG SER: Background

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- Supreme Court decision in *UARG v. EPA* found that “anyway source” permits could continue to contain BACT limitations for GHG emissions.
 - ▣ Per the definition of the term “significant,” without a SER *de minimis* level “any increase” in GHG emissions will trigger BACT review.

- In Step 1 of the Tailoring Rule, a 75,000 tpy CO₂e GHG interim threshold was established based on administrative necessity to determine BACT applicability, but it was not established as a GHG SER *de minimis* level.

- The *UARG v. EPA* Supreme Court decision:
 - ▣ Recognized that EPA can exempt from BACT requirements sources with emissions below *de minimis* levels.
 - ▣ Said the EPA would need to justify *de minimis* level on proper grounds, citing *Alabama Power* Court decision.
 - *Alabama Power* allows categorical exemptions from statutory requirements for circumstances fairly considered to be *de minimis*: “trifling matters,” “pointless expenditures of effort,” “miniscule” emissions.

Establishment of GHG SER: Technical Basis

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- Goal was to establish GHG SER at a level below which application of the GHG BACT requirement would “yield a gain of trivial or no value” or would be a “pointless expenditure of effort.”

- Information from the following four categories of data reviews support the proposed 75,000 tpy CO₂e GHG SER level:
 1. A review of recent PSD permitting information for “anyway sources,” including those subject to GHG BACT review since GHGs became subject to regulation in 2011.
 2. A calculation of the equivalent GHG emissions corresponding to a 40 tpy NO_x SER level for different combustion unit types that could be expected to be part of “anyway sources.”
 3. An analysis of non-combustion related GHG source category emissions data.
 4. Degree of GHG emissions reductions expected by applying energy efficiency measures as BACT for GHGs.

Establishment of GHG SER: Technical Basis (Continued)

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1. Review of Recent Permitting Information

- ❑ Five years of demonstrated and successful GHG permitting experience
- ❑ Key categories permitted include: power plants, refineries, oil and gas sector, iron and steel, cement manufacturing, pulp and paper plants.
 - These source categories are responsible for over 90% of the national stationary source GHG emissions in EPA's GHG Mandatory Reporting Rule.
- ❑ GHG BACT review in these permits predominantly involved large turbine and boiler combustion units at 75,000 tpy CO₂e or above.
 - Thus, we do not expect to add many GHG BACT reviews for new sources nationwide at a GHG SER level below 75,000 tpy CO₂e.
 - GHG SER values below 75,000 tpy CO₂e are only potentially meaningful for modification projects that trigger PSD at existing major sources.
- ❑ Permitting experience shows "more than trivial value" in conducting BACT reviews for these larger units.
 - The typical 2% to 6% energy efficiency improvements seen for these sources could reasonably be considered meaningful due to the large amount of GHG emissions emitted from even a single one of these units.

Establishment of GHG SER: Technical Basis (Continued)

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2. Equivalent GHG Emissions Calculations

- ▣ Used the existing PSD NO_x SER value of 40 tpy to calculate an equivalent level of increase in GHG emissions that we would expect to be associated with the combustion units types most likely to be part of future modifications projects
 - This is because GHG BACT review can only apply to a modification in cases where a pollutant other than GHGs is increased in significant amounts
- ▣ The average result across unit types was 98,333 tpy CO₂e.
 - Found very few-actual PSD-triggering modification projects that involved adding a single combustion unit that would have total GHG emissions less than 75,000 tpy CO₂e.
 - Units with GHG emissions below 75,000 tpy CO₂e addressed in “anyway source” PSD permits are usually present:
 - As associated equipment when the source is adding a large combustion unit that is responsible to trigger PSD permitting
 - In multiple-unit configuration generation sets
 - If a single unit exceeded the 40 tpy NO_x SER level very close to that level, the permit applicant very often accepts PTE emission limits to avoid triggering PSD (i.e., accepts a synthetic minor permit).

Establishment of GHG SER: Technical Basis (Continued)

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3. Non-combustion emissions data analysis

- ▣ To identify any additional GHG emission sources that could be subject to BACT below 75,000 tpy CO₂e.
- ▣ At 75,000 tpy CO₂e, all the non-combustion “anyway source” categories included in our analysis (non-combustion related units and projects responsible for approx. 89% of the GHG emissions on a CO₂e basis) would trigger permitting on their own.
 - Key source categories include: municipal waste landfills, cement production, nitric acid production, and refineries.
- ▣ Smaller GHG-emitting non-combustion units that would not otherwise trigger PSD independently may be pulled into PSD when other emission units are added to the same project
 - Key source categories: oil and gas production, processing and transmission facilities.
 - However, since these units cannot trigger PSD independently, they are not likely to be subject to GHG BACT review at a GHG SER lower than 75,000 tpy CO₂e.

Establishment of GHG SER: Technical Basis (Continued)

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4. Degree of GHG emissions reductions expected by applying energy efficiency measures as BACT for GHGs

- Focused on combustion sources since they are likely to trigger PSD.
- Found that the degree of emission reduction achieved is greater at large combustion units that would be subject to GHG BACT review at or above a 75,000 tpy CO₂e SER
 - E.g. 7% emissions reductions from a baseline industrial boiler configuration.
 - Generally only obtainable where site-specific design and construction criteria can be part of the combustion unit design and manufacture.
- At levels much below 75,000 tpy CO₂e (e.g., < 30,000 tpy CO₂e), GHG emission reduction potential from BACT review diminishes due to:
 - Smaller unit size (and thus smaller GHG emissions).
 - Type of sources (equipment types that provide fewer opportunities for GHG reductions from BACT review).

Establishment of GHG SER: Technical Basis (Continued)

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- We are specifically asking for comments on (and associated supporting documentation for) establishing a GHG SER level below 75,000 and at or above 30,000 tpy CO₂e.

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Poll Question #3

Contacts and Additional Information

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NSR and Title V Websites

- <http://www.epa.gov/nsr>
- <https://www.epa.gov/title-v-operating-permits>

Guidance Database

- <https://www.epa.gov/nsr/new-source-review-policy-and-guidance-document-index>

Questions?

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