



# **New Source Review (NSR) Air Permitting and Energy Efficiency for Industrial Projects Including Combined Heat and Power (CHP)**

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# Key Topics



- What is Major New Source Review?
- NSR Regulatory Improvement Changes in 2002
- Court Rulings Regarding “Pollution Control Projects” and “Clean Units”
- Flexible Air Permits Rule
- Prevention of Significant Deterioration (PSD) Rules for Greenhouse Gases (GHG) Added in 2010
- Energy Efficiency Considerations

# What is Major New Source Review?



- Preconstruction permitting requirements of the Clean Air Act that regulate air emissions from large (major) industrial type sources.
- Applies to both new “major” sources and to “major modifications” at existing major sources.
- Program protects and preserves ambient air quality and allows for growth.
  - Program requires the latest emissions reduction technology and control measures.
- Prevention of Significant Deterioration (PSD) permit requirements in clean areas, Nonattainment NSR permit requirements in areas not attaining the ambient standards.

# EPA's Efforts to Improve NSR



- In August 1992 EPA began a concerted effort to assess and improve the NSR program amidst concerns from industry that the program was too complex and burdensome.
- EPA began considering potential changes to allow sources more flexibility to respond to rapidly changing markets and still maintain the current, or a greater, level of environmental protections.
- A series of public hearings and interested stakeholder meetings were held, including evaluation by the Clean Air Act Advisory Committee (CAAAC), Subcommittee on NSR, Permits, and Toxics.
- The overall review and recommendations by the public, stakeholders, and the Subcommittee resulted in EPA proposing NSR “Reform” changes on July 23, 1996 (61 FR 38250).

# EPA's Efforts to Improve NSR



- May 2001: President's National Energy Policy Report
  - NSR: EPA to conduct a 90 day study of the impact of NSR regulations on investment in new utility and refinery generation capacity, energy efficiency and environmental protection
  - CHP: Shorten the time needed to obtain CHP permits and provide certainty to industry through consistent interpretation. CHP should be promoted thru flexibility in environmental permitting.
- June 2002: EPA's New Source Review Report to President
  - Includes conclusions and recommendations based on the 90 day study and background data provided to EPA during stakeholder outreach process.
  - [www.epa.gov/NSR/publication/html](http://www.epa.gov/NSR/publication/html)
- December 2002: Based on 1996 proposal, the 90 Day Study recommendations and stakeholder input, EPA adopted the final rules to improve NSR (67 FR 80186).

# Key EPA NSR Regulatory Changes in 2002 Impacting Industry and CHPs



- New “actual-to-projected-actual” test for modifications
- Plant wide applicability limits (PALs)
- Court rulings on pollution control projects (PCPs) and “Clean Units”. See *New York, et al., v. U.S. Environmental Protection Agency*, No. 02-1387

# Major NSR Applicability Test before 2002: “Actual-to-Potential”



- Before the regulatory changes in 2002, facilities used the “actual-to-potential” test to determine whether major NSR applied to a modification.
  - This test generally required a source to compare its emissions immediately before a change to the maximum potential emissions after the change.
  - Under this methodology, projects, including some energy efficient projects that had a positive environmental benefit and may even have reduced emissions, nonetheless, required major NSR review and possible installation of pollution controls.
- Many sources agreed to limit their post-change emissions to avoid major NSR.
- Actual-to-potential test is viewed by many stakeholders to discourage energy efficiency projects.
- 10 year (as opposed to most recent 2 year) “look back” to establish pre-change emissions baseline: a facility may look back up to 10 years before a proposed change to establish a historical emissions baseline and compare its emissions level with projected post-change emissions.

# Major NSR Applicability Test Added In 2002: “Actual-to-Projected-Actual”



- Projected actual emissions: Instead of comparing post-change emissions to the emissions unit’s potential to emit, a source may estimate the maximum annual rate at which it will actually emit following the change.
- This method more accurately predicts the type of projects that result in emissions increases and reduces triggering major NSR for environmentally beneficial projects, such as energy efficiency improvements.



# Key EPA Major NSR Regulatory Change in 2002: Plant Wide Applicability Limits (PALs)



- A PAL is a pollutant specific, actual emissions based limitation (tons/year) that applies to all emissions points of the PAL pollutant within a facility on a plant wide basis.
- PALs are a major NSR applicability option for existing sources seeking more flexibility to make changes.
  - A facility operating under a PAL permit may make changes at the facility without triggering major NSR for the PAL pollutant provided the emissions remain below the PAL level(s).
  - The PAL option provides facilities with greater flexibility to modernize and expand their facility, including energy efficiency improvements.
- Annual limit is established based on actual emissions (any consecutive 24 month period in last 10 years) plus NSR significant levels for modifications (e.g. 40 tpy for SO<sub>2</sub>).
- PAL lasts for 10 years and then is eligible for renewal.
  - Requires good monitoring, reporting and record keeping.

# Key EPA Major NSR Regulatory Change in 2002: Overturn of Pollution Control Project (PCP) Exemption



- In NSR Reform in 2002, EPA incorporated into its rules its long-standing exemption (addressed in a 1994 guidance memo) from major NSR applicability for pollution control projects that are considered environmentally beneficial, even though there may be collateral emissions increases of some pollutants.
  - For example, SO<sub>2</sub> controls substantially reduce SO<sub>2</sub> but likely increase sulfuric acid mist.
- The codification of the PCP exemption in the 2002 NSR regulatory changes was challenged and not upheld in *New York, et al., v. U.S. Environmental Protection Agency*, thus making the new actual-to-projected-actual test even more important.

# Key EPA Major NSR Regulatory Change in 2002: Addition and Overturn of “Clean Unit” Exemption



- The 2002 rules established a “clean unit” exemption from major NSR providing an innovative approach to encourage sources to install state-of-the-art pollution control technologies.
  - Under this approach, a proposed change at the clean unit did not increase emissions, and thus not trigger major NSR, provided the control status did not change, even if net actual emissions may increase.
  - A clean unit is one where Lowest Achievable Emission Rate (LAER) or Best Available Control Technology (BACT) has been installed in the last ten years as a result of major NSR.
  - Also, a clean unit is a unit that has not gone through major NSR in the last ten years but can demonstrate that their control technology is comparable to LAER or BACT.
  - Clean units must show compliance with the National Ambient Air Quality Standards (NAAQS) and New Source Performance Standards
- The court in *New York v. U.S EPA* did not agree that a clean unit with a net actual emissions increase could be exempt from the modification provisions of major NSR and overturned the clean unit exemption.

# 2009: Flexible Air Permits Rule



- A flexible air permit (FAP) is designed to facilitate flexible, market-responsive operations at an industrial facility while ensuring equal or greater environmental protection than conventional air permits.
  - FAP approaches allow a permitted major source to obtain approval for changes up front without subsequent review of the changes when they occur.
- The FAP rule [74 FR 51418 (October 6, 2009)] finalized several flexibilities, including advanced approvals, which are relevant for facilitating energy efficiency projects.
  - Using advanced approvals, sources can obtain authorization for certain changes up front (e.g., during routine Title V operating permit renewal) and avoid subsequent permit review of the changes when they occur.
  - Advance approvals can be used with PALs to manage emissions and major NSR applicability on a plant wide basis.
- EPA continues to explore ways to streamline permitting requirements and promote energy efficiency projects.

# PSD Greenhouse Gas (GHG) Rules Added In 2010



- Applicability levels based on CO<sub>2</sub>e at 100,000 tpy (new source), 75,000 tpy (mod) instead of 100/250 tpy major source threshold, 40 tpy mod threshold (VOC)
  - Higher applicability thresholds tailored to GHG equivalency
- EPA's GHG BACT Guidance highlights the importance of considering energy efficiency in the GHG BACT review process.
- GHG rules have been challenged and are under judicial review.

# More Energy Efficiency Considerations



- CHP's energy efficiency benefits are best realized with output-based standards.
- Our emissions control policies for NSR permitting encourage greater consideration of energy efficient equipment and processes for CHP, cogeneration, and other permitting activities and allow for out-put based NSR limits.
- For example, energy efficiency is considered in BACT determinations under PSD Permitting
  - BACT is case-by-case and includes consideration of energy, environmental and economic impacts along with other costs.
  - BACT considers application of production processes, or available methods, systems or techniques.

# Questions or Comments?

