

# NSR

## New Source Review

### The Good, Bad & Ugly

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**This represents the views of the author and not necessarily the NJDEP.**

# The Good

1. Up to Date Technology
  - a. BACT - best technology
  - b. LAER - lowest emissions
2. Evaluation of Alternatives
  - a. Pollution Prevention
  - b. Alternative processes
  - c. Energy Efficiency
3. Air Quality Evaluation
  - a. NAAQS
    - no new violations
    - no significant impact on existing violations
  - b. PSD
    - Class II increments (most areas)
    - Class I increments (special areas)

# The Bad

1. Applicability Complexity - increased
2. Compliance Uncertainty - increased
3. EPA/State Partnership - damaged
4. Existing Source Applicability - almost extinct

# The Ugly

1. NSR Reform I - EPA's 2002 New Years Eve Relaxation
2. NSR Reform 2 - EPA's Humpty Dumpty Relaxation
3. NSR Reform 3 ? - 1 hour applicability
4. NSR Reform 4 ?
  - a. Aggregation
  - b. DeBottlenecking

# The Courts on Applicability

- If based on Allowable Emissions - Bad
- If based on Actual Emissions - Good

## **NSR Reform I example - Sections Repealed/Remanded**

1. Clean Unit Exemption - was allowable based
2. Pollution Control Project Exemption - was allowable based
3. RMR for future actual emissions - will make enforceable (record keeping, monitoring, reporting)

# Traditional NSR Applicability

What did it take to Trigger NSR pre 2003?

1. Physical or operational change
2. Emission Increase
3. Significant Emissions Increase
4. Insufficient Emissions Decreases elsewhere at facility (no netting opportunity)

# “Reformed” NSR

The additional Applicability hurdles - Absent Court Action

1. Future Actual emissions must exceed past allowables by a significant amount - upheld (TBD?)
2. 10 years look back for maximum pre-change emissions - upheld
3. Costs over 20% of the cost of replacing the unit - Humpty Dumpty overturned

# More “Reformed” NSR Coming

1. One hour Maximum Emissions must increase - TBD
2. Actual Emissions Increases at other units may not count when debottlenecking - TBD
3. Changes may be incrementally made, rather than aggregate increases - TBD



# The 4 basic Applicability Options for Significant Emissions Increase Determination (Actuals vs. Allowables)

1. Future Allowables - Past Actual Emissions  
Old NSR, largest difference, most stringent
2. Future Actual - Past Actual Emissions  
EPA's claim for NSR I
3. Future Allowable - Past Allowable Emissions  
Courts say inconsistent with CAA
4. Future Actual Emissions - Past Allowable Emissions  
The real NSR I, smallest difference, least stringent

# Why is NSR I really a Potential to Actual Test?

**Answer - It's the demand adjustment.**

## **EPA's Equation**

$E$  = Emissions increase that is compared to significant levels

$A_2$  = projected future actual emissions

$A_1$  = past actual emissions

$D_1$  = emissions increase caused by increased demand that could have been accommodated in past.

$P_1$  = potential past emissions (usually the same as allowable emissions)

$$E = (A_2 - D_1) - A_1$$

## **Apply 8th grade algebra**

$$E = A_2 - (A_1 + D_1)$$

$$A_1 + D_1 = P_1$$

$$E = A_2 - P_1 \text{ (which is a potential to actual test)}$$

# Why didn't the Courts see this with NSR 1?

- EPA put the demand exclusion on the other side of the equation.
- EPA did not use the words “potential” or “allowable”
- The legal system does not commonly use algebra

What is likely outcome of court remand on record keeping for future actual emissions?

Answer: NSR I Applicability clearly becomes a potential to potential test.

$$E = A_2 - P_1$$

If  $A_2$  may not be exceeded, then

$$A_2 = P_2$$

Therefore:

$$E = P_2 - P_1 \text{ (which is a potential to potential test)}$$

# NSR 3 - The 1 hour Applicability Options

1. Hourly increase is another applicability hurdle (must have hourly and annual increase) - least stringent
2. Only an hourly increase triggers NSR - EPA proposal
3. Only an annual increase triggers NSR - Current NSR
4. Either hourly or annual increase triggers NSR - most stringent, most logical.

# Why should NSR Applicability be based on hourly or annual emissions?

Answer: It's the NAAQS!

1. Long term NAAQS  
SO<sub>2</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, Pb
2. Short term NAAQS - 24 hours or less needs a short term (1 hour) trigger  
SO<sub>2</sub>, PM<sub>2.5</sub>, O<sub>3</sub>, CO

Why: To protect public health and welfare. Actual emissions increases will not be modeled to determine NAAQS exceedances unless NSR applicability is triggered by either annual and hourly emissions increase.

# NSR and Energy Efficiency

NSR allows energy efficiency improvements

1. Energy efficiency improvement decreases emissions and does not trigger NSR, by itself.
2. If a change increases emissions, it's not just an energy efficiency change.

# What's the Efficiency Issue?

1. Opportunity to increase energy efficiency at a 40 year old power plant is limited, on the order of 1% - small emissions reduction (hourly).
2. Opportunity to increase annual utilization of a 40 year old power plant increases significantly if the plant is rebuilt - large emission increase (annual).





# Conceptual Simplified NSR Program

1. No Netting
2. Birthday provision - upgrade to BACT at end of useful life
3. Base NSR applicability on hourly and annual emissions increase (use both independently)
  - a. Annual increase - P to P test
  - b. Hourly Increase - A to P test
4. Model all major facilities at allowable emissions
  - a. Resolve local projected exceedances independent of NSR
  - b. Model NSR projects as done currently

# The Future of NSR

1. Existing litigation continues
  - Enforceable future actual
  - 1 hour applicability
  
2. New litigation likely
  - 1 hour applicability
  - Debottlenecking?
  - Aggregation?
  
3. Clean Air Act Amendments?
  - Birthday provision
  
4. States continue to implement NSR, not EPA.
  
5. States innovate and may be more stringent than EPA.