

# The “Sum of the Differences”

## Applying NSR Math in the Real World

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## *New Source Review Basics*

### **Major Modification + Major Source**

1.

Physical Change or  
Change in Method  
of Operation

2.

Significant Emissions  
Increase AND  
Significant Net  
Emissions Increase

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## *Emissions Increase*

**PROJECTION – BASELINE = CHANGE**



1. New or Existing?
2. Change in PTE or Design Capacity?



1. EGU or non-EGU?
2. Sources of Data?

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## *Baseline Actual Emissions*

- EGU: 24 consecutive months in 5 years
- Non-EGU: 24 consecutive months in 10 years

### Things to Remember:

1. Startup, shutdown, malfunctions, fugitives
2. Non-compliant emissions don't count
3. New limits with which source must currently comply
4. Different 24 months for each pollutant
5. Same 24 months for all units

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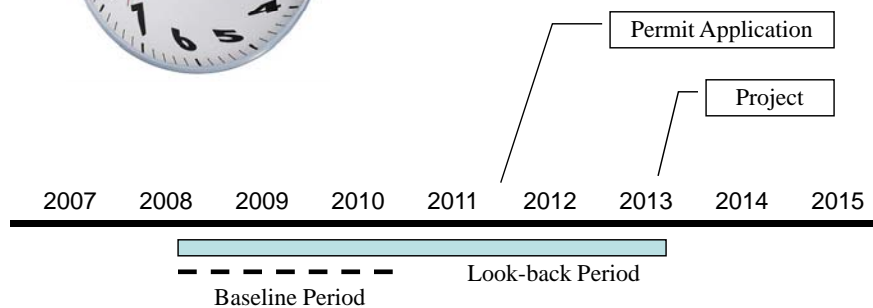
## *Real World BAE*

- Data: monitors, emission factors, or both?
- Use Spreadsheet for rolling 24-month total
- Noncompliance? NOVs? Opacity?
- “Representative” Baseline? Unnecessary, but you can ask for one ...
- Looking back from beginning actual construction or from permit application?

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## *Timing Matters!*



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## *Projected Actual Emissions*

- New: Potential to Emit (PTE)
- Existing (or replacement): Highest emissions in five (or ten) 12-month periods after project

### Things to Remember:

1. Take into account business and compliance plans
2. DEMAND GROWTH

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## *Demand Growth Exclusion*

*(independent factors exclusion)*

- SHALL exclude from PAE...
- that portion of the emissions ...
- that the unit is capable of accommodating  
AND ...
- that is unrelated to the project.

**Increase w/Project – Increase w/o Project =  
DEMAND GROWTH**

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## *Demand Growth Common Pitfall*

- Can you subtract demand growth and show a decrease in emissions?

According to EPA ... **NO!**

Example:

|                 |           |
|-----------------|-----------|
| Baseline        | = 100 tpy |
| PAE w/ Project  | = 180 tpy |
| PAE w/o Project | = 130 tpy |
| Capacity        | = 150 tpy |



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## *Real World PAE*

- How do you predict the future?
- No limits needed
- “Design capacity” change?
- Confiscates capacity?
- Changes between baseline and project?
- Demand growth exclusion calculations



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## *Net Emissions Increase\**

“Sum of ...”

1. project emissions increase
2. Other increases and decreases
  - Contemporaneous: five years
  - Creditable
    - MUST BE practically enforceable
    - CANNOT BE incorporated into attainment plan or NSR permit
    - ACTUAL emissions?



\*OPTIONAL

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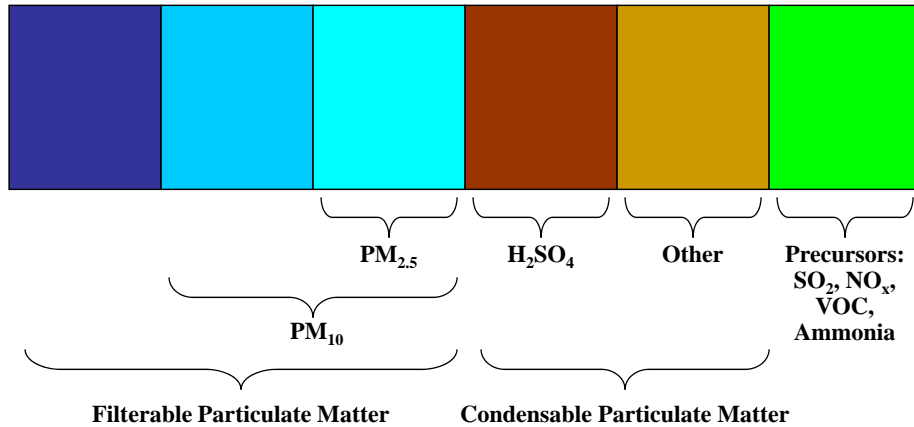
## *Significance Thresholds*

|   |                |
|---|----------------|
| Carbon Monoxide (CO):                                 | <b>100 tpy</b> |
| Sulfur dioxide (SO <sub>2</sub> ):                    | <b>40 tpy</b>  |
| Nitrogen Dioxides (NO <sub>x</sub> ):                 | <b>40 tpy</b>  |
| Volatile Organic Compounds (VOC):                     | <b>40 tpy</b>  |
| Particulate matter (PM10):                            | <b>15 tpy</b>  |
| Particulate matter (PM <sub>2.5</sub> ):              | <b>10 tpy</b>  |
| Lead (Pb):  | <b>0.6 tpy</b> |
| Sulfuric acid mist (H <sub>2</sub> SO <sub>4</sub> ): | <b>7 tpy</b>   |

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## *PM / PM<sub>10</sub> / PM<sub>2.5</sub>*



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## *Reporting*

Rules differs more state to state than any other provision in the NSR rules!

1. Reasonable Possibility?
2. “Automatic” reporting?
3. What happens if you must report an unexpected increase in emissions above projections?
4. Five or ten years of reporting?

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## *Offsets*

- Calculate using **ACTUAL EMISSIONS**,  
not **BASELINE ACTUAL EMISSIONS**

[A]ctual emissions as of a particular date shall equal the average rate ... during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation.

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