

# New Source Review Reform: *What Lies Ahead*



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**ERM**

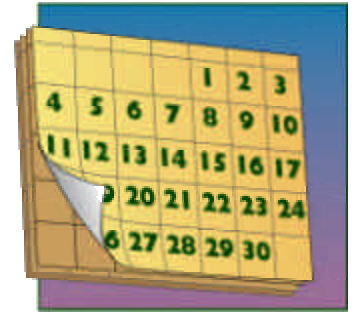
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# A Decade in the Making

- **1992 – The WEPCO Rule for EUSGUs**
- **1993 – EPA Stakeholder Meetings re Simplification**
- **1996 – Proposed NSR Reform Rules**
- **1998 – Notice of Availability**
- **2001 – National Energy Policy Development Group**
- **2002 – EPA Report to the President**
- **December 31, 2002 – Final and Proposed Rulemaking Regarding Modification Applicability**
- **August 27, 2003 – Final RMRR Rulemaking (Stayed by the Supreme Court 12/23/2003)**

# The Air Permitting Program



- **Preconstruction Permits - required before construction is commenced**
  - Minor sources
  - Major sources and major modifications
- **Operating Permits - required after operations begin**
  - Minor sources
  - Title V sources

# Preconstruction Air Permitting

- **Minor sources (except for exempt operations) require routine installation permits (normally less than 6 months from submittal for approval)**
- **Major new sources and major modifications require major permitting (9 to 18 months for approval):**
  - Prevention of Significant Deterioration - attainment areas
  - Nonattainment NSR - nonattainment areas

# Purposes and Types of Air Permits

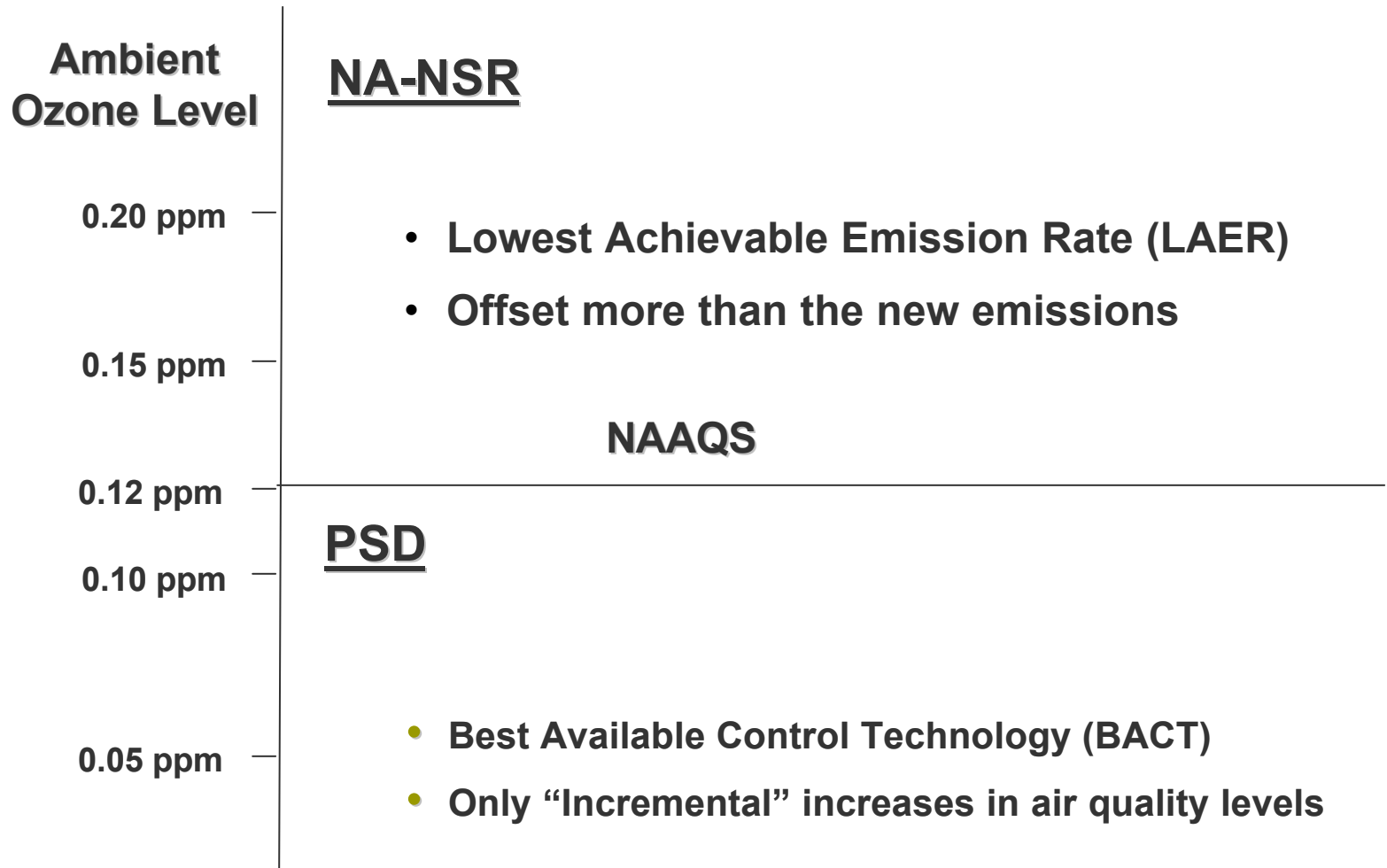


- **Minor Sources:** attainment and maintenance of air quality levels (National Ambient Air Quality Standards: NAAQS)
- **PSD:** protect clean air i.e., the NAAQS are achieved
- **Nonattainment NSR:** progress towards attainment of NAAQS

# National Ambient Air Quality Standards (NAAQS)

Pollutant		NAAQS	
		Primary	Secondary
PM-10	Annual	50 $\mu\text{g}/\text{m}^3$	Same as primary
	24-hour	150 $\mu\text{g}/\text{m}^3$	Same as primary
TSP	Annual	75 $\mu\text{g}/\text{m}^3$	---
	24-hour	260 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$
SO <sub>2</sub>	Annual	0.03 ppm	---
	24-hour	0.14 ppm	---
	3-hour	---	0.5 ppm
NO <sub>x</sub>	Annual	0.053 ppm	Same as primary
O <sub>3</sub>	8-hour	0.08 ppm	Same as primary
	(1-hour)	(0.12 ppm)	Same as primary
CO	8-hour	9 ppm	---
	1-hour	35 ppm	---
Lead	Calendar quarter	1.5 $\mu\text{g}/\text{m}^3$	Same as primary

# Comparison of NSR Requirements



# The NSR Program



- **Minor Sources (Minimum SIP Requirements)**
- **Major New Sources & Major Modifications**
  - PSD (Part C of the CAA) - Attainment Areas
  - Nonattainment NSR (Part D of the CAA) - Nonattainment Areas

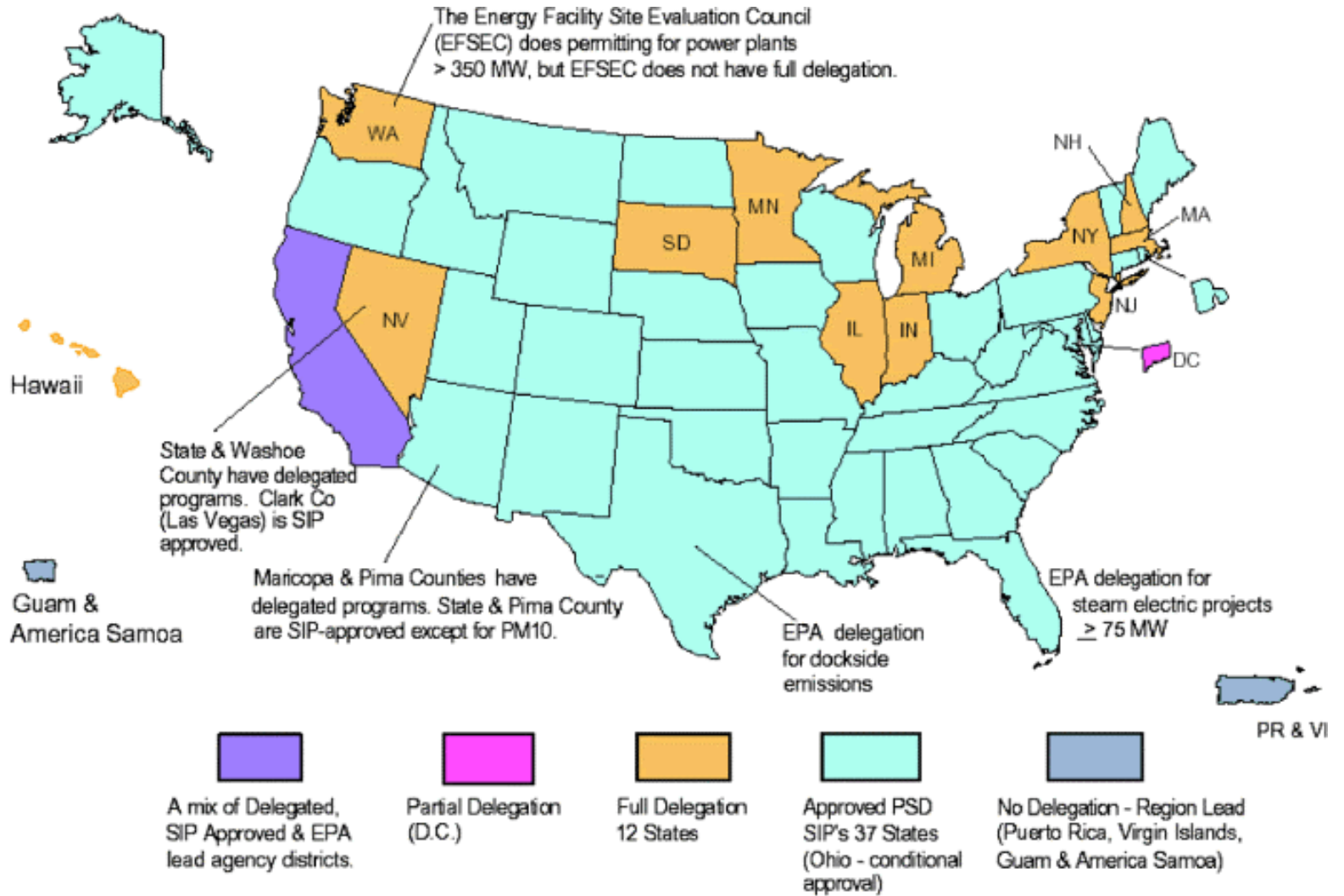


# PSD Implementation



- **EPA approved state PSD rule: prevalent approach**
- **State or districts implement EPA Rule: about 13 states**
- **EPA implements – a few territories**

# PSD Program Status - June 2002



# PSD Applicability - New Sources



- **100 tpy PTE for listed source categories  
(28 categories with NSPS prior to 7 August 1980)**
- **250 tpy for other source categories**
- **Include fugitives only for listed source categories**

# Regulated Pollutants

- **CO**
- **NO<sub>x</sub>**
- **SO<sub>2</sub>**
- **TSP**
- **PM10**
- **VOCs**
- **Lead**
- **MWC Combustor Organics**
- **Fluorides**
- **Sulfuric Acid Mist**
- **H<sub>2</sub>S**
- **TRS**
- **Reduced Sulfur Compounds**
- **CFCs**
- **Halons**
- **MWC Acid Gases**

# PSD Applicability Modifications

- **PSD applies to major modifications of existing major sources**
- **Major modification is a modification that results in a significant emissions increase**
- **Fugitives must be considered**
- **PSD does not apply to modifications of existing minor sources unless modification, by itself, is major**

# Significant Emission Rates (Slide 1)

<u>Pollutant</u>	<u>Emission Rate</u>
PM10	15 tpy
SO <sub>2</sub>	40
NO <sub>x</sub>	40
VOC	40
CO	100
Lead	0.6
PM	25

# Significant Emission Rates (Slide 2)

<u>Pollutant</u>	<u>Emission Rate</u>
Fluorides	3 tpy
Sulfuric Acid Mist	7
Hydrogen Sulfide	10
TRS	10
MWC	
- Acid Gases	40
- Metals	15
- Organics	$3.5 \times 10^{-6}$

# Significant Emission Rates (Slide 3)

## Pollutant

## Emission Rate

CFCs (11, 12, 113, 114, & 115)

Any Increase

Halons ( 1211, 1301, 2402)

Any Increase

And

Any emissions increase resulting in a  $> 1 \mu/m^3$   
24-hour impact in a Class I area



# Minor Source PSD Applicability

- **Modification by itself must be major**
- **No netting allowed**

# The Modification Determination

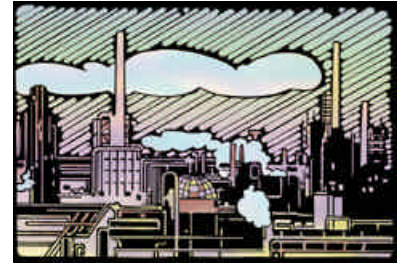


- **Step 1 - Is it a physical or operational change?**
- **Step 2 - Is it exempt pollution control project?**
- **Step 3 - Does it “result in” an emissions increase**
- **Step 4 - Determine PTE of modification**
  - If PTE below significance level - PSD doesn't apply
  - If PTE above significance level, consider netting
  - Significance based on future potential versus past actual
  - Actual is usually average of previous two years
- **Step 5 - Netting**

# The Netting Process

- **Allows source to avoid PSD if “net emissions increase” < significance level**
- **Include ALL creditable emissions increases**
- **Include any creditable decreases**
- **Contemporaneous is within 5 years of date construction commences & up to time of project start-up**

# PSD Requirements



- **BACT**
- **No significant air quality deterioration (increment)**
- **Can't cause or contribute to NAAQS Exceedance**
- **No other adverse impacts**
  - soils, vegetation, visibility
  - Class I Areas

# Nonattainment Area NSR

- **Primarily a SIP program**
- **Must achieve progress towards attainment**
- **Only applies to criteria pollutants**
- **Pollutant specific based on type of NA**

# Nonattainment NSR Requirements

- **LAER**
- **Offsets**
- **Net air quality benefit**
- **All major sources in compliance in state**
- **Alternate siting analyses**

# PSD and NA NSR Apply Individually

- **For example, a new power plant in the NOTR**
  - NA NSR for  $\text{NO}_x$
  - PSD for  $\text{PM}_{10}$ ,  $\text{SO}_2$  and  $\text{NO}_x$



# Major Source Definitions (tpy)

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	VOC/NO <sub>x</sub>	CO	PM-10
<b>Marginal</b>	<b>100</b>		
<b>Moderate</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Serious</b>	<b>50</b>	<b>50</b>	<b>70</b>
<b>Severe</b>	<b>25</b>		
<b>Extreme</b>	<b>10</b>		
<b>NOTR</b>	<b>50 VOCs only</b>		

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# Major Source Definitions (continued)

- **All others 100 tpy**
- **Listed source categories include fugitives**
- **Many states always include fugitives**
- **Based on PTE**

# Major Modification Definitions

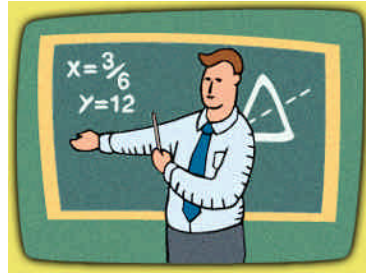
<b>SO<sub>2</sub></b>	<b>40 tpy</b>
<b>Lead</b>	<b>0.6 tpy</b>
<b>NO<sub>x</sub></b>	<b>40 tpy</b>
<b>CO</b>	<b>100 or 50 tpy</b>
<b>PM/PM10</b>	<b>25/15 tpy</b>

# Major Modification (Continued)

## Ozone Nonattainment Areas & NOTR

- **Marginal**            40 tpy, VOC or NO<sub>x</sub>
- **Moderate**            40 tpy, VOC or NO<sub>x</sub>
- **Serious**                25 tpy, VOC or NO<sub>x</sub>, aggregated over 5 yrs
- **Severe**                25 tpy, VOC or NO<sub>x</sub>, aggregated over 5 yrs
- **Extreme**                Any increase in VOC or NO<sub>x</sub>
- **NOTR**                    40 tpy VOC or NO<sub>x</sub>

# NSR Reform — What Really Changes?



- **NSR Reform impacts only applicability determinations for modifications**
- **All other aspects of NSR – no change**
- **Modifications are critical to the flexible packaging industry**

# Rule Status – 5 Promulgated Key Revisions *(The December 31, 2002 Promulgation)*

- **New method to determine “Baseline Actual Emissions”**
- **New Actual-to-Projected actual applicability test**
  - **Formal recognition of PALs**
  - **Clean Unit Test for applicability**
  - **Pollution control project exclusion**

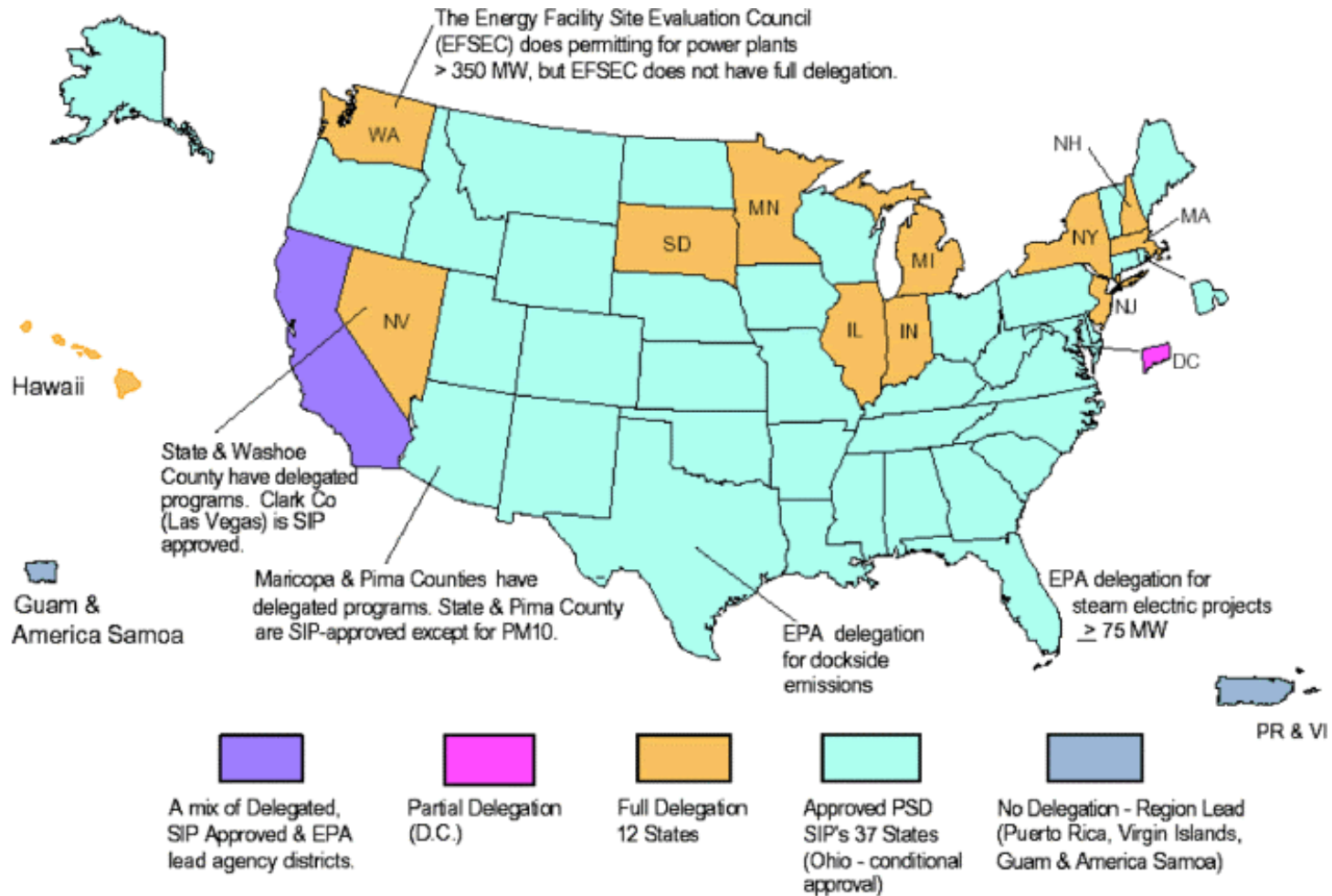
# Rule Status – The RMRR Key Revision *(The August 27, 2003 Promulgation)*

- **New bright line test equipment replacement**
  - **Definition of functionally equivalent**
  - **Definition of process unit**
  - **Guidance on establishing basic design parameters**

# NSR Reform Implementation

- **Delegated states and PA – Effective 3 March 2003**
- **SIP approved states**
  - SIP revision due in 2006, or
  - Demonstrate that the state program is at least as stringent as new rules

# PSD Program Status - June 2002





# Reforms Yet To Come



- **To Be Proposed Changes**
  - Debottlenecking
  - Aggregation of projects
  - PALs based on allowable emissions

# The Promulgated Changes



- **Baseline actual emissions**
- **Actual-to-projected actual emissions methodology**
- **PALs**
- **Clean unit exemption**
- **Pollution control project exclusion**
- **RMRR equipment replacement provisions**

# Determining Baseline Actual Emissions

## Old Requirements

- **Average of the annual emissions for the 2-year period immediately preceding the project**
- or*
- **Another 2-year period if it is determined to be more representative of emissions by the reviewing authority**
- **Typically single baseline year for all pollutants**

## New Requirements

- **Average annual emissions that occurred during any consecutive 24-month period in the past 10 years**
  - Need adequate data
- **Adjustments**
  - Reflect current control requirements
  - No credit for beyond allowable emissions
- **Allows different baseline periods for different pollutants**

# “Baseline Actual Emissions” vs. “Actual Emissions”

- **“Baseline Actual Emissions”**
  - Use to determine emissions increase resulting from a project
  - Compute contemporaneous emissions changes
  - Starting point for PALs
- **“Actual Emissions” – the old definition still used to:**
  - Conduct air quality analyses (NAAQS, Increments and AQRVs)
  - Determine offset needs

# STAPPA/ALAPCO – Baseline Emissions

- **Option 1 – Really the old NSR Program**
  - Sets most recent 2 years as presumptive norm
  - Allows a different 2 years in the past 5 years at the Permit Authority's discretion
- **Option 2 – A slight change**
  - Allows for alternative Baseline (need permit authority approval) based on utilization rates i.e highest two years of production in past 5 years
- **Both options require use of single baseline period for all pollutants**

# NSR Applicability Test - (*non EUSGUS*)

## Old Requirements

- **Actual to Potential Test: Comparing past actual emissions (2-yr average) to future PTE**
- **Swept numerous projects into NSR without any real emissions change**

## New Requirements

- **Actual to Projected Actual: Apply to all changes at existing emissions units**
- **Source must project post-change annual emissions**
  - 5 year period after change if no increase in PTE or capacity
  - 10 year period if increase
  - Exclude demand growth if it could have been accommodated
  - Option to use PTE to avoid recordkeeping

# Actual-to-Projected Actual Recordkeeping and Reporting – (non EUSGUS)

- **Non-applicability determinations (but unlike EUSGUs no requirement to notify reviewing authority prior to commencing construction except for minor source permit requirements)**
- **Post-change annual emissions, baseline and projection for 5/10 years**
- **If “significant” increase occurs, notify reviewing authority within 60 days**
- **According to EPA, the projection does not become an enforceable permit limit**



# STAPPA/ALAPCO – NSR Applicability

- **Option 1 – Actual to Potential test as per the “old” rule**
- **Option 2**
  - Use Actual to Projected Actual Emissions,
  - Eliminate demand growth allowance,
  - Enhance oversight and enforcement
- **Option 3 – The Actual to Projected Actual Test**
  - Non-applicability determinations and support calculations must be submitted to the Permitting Authority prior to construction
  - Source must calculate emissions each year for the next ten years to document non-applicability
  - Annual report to the Permitting Authority



# Plantwide Applicability Limits (PALs)

- **The December 31, 2002 final rule addresses only “Actuals PALs”**
- **EPA is committed to developing rules for PALs based on Potential Emissions**
- **PALs represent an alternate approach for determining major NSR applicability**
- **A PAL is facility-wide annual emissions limit (rolling 12-month total emissions) under which any change can be made without triggering NSR for a specific pollutant**

# PAL Emissions Cap Clarifications

## **“Baseline Actual Emissions + Significant Emissions Rate”**

- **Remember: Baseline Actual Emissions are based on 10-year look back. The same 24-month period must be used for all emissions units**
- **Subtract emissions allowances for units that have been shutdown which operated during the 24 months**
- **Add PTE for any emissions unit added after the 24 months**
- **SSM emissions consume PAL allowable emissions**
- **PAL Term is 10 Years**

# PAL Monitoring and Recordkeeping

- **PAL permit must include enforceable requirements to determine annual emissions – every month**
- **Allowable emissions estimating approaches**
  - Mass balance calculations – set up to be conservative
  - CEMS
  - CPMS
  - Emission factors
- **In the absence of monitoring data – PAL gets charged maximum potential emissions**



# PAL Renewal and/or Expiration

- **Renewals at end of 10-year life**
  - Determine revised “Baseline Actual Emissions” and add in Significance Emissions Rates
    - If > 80% of current PAL, then renew at current level
    - If < 80% then renew at revised level based on more representative baseline actual emissions or other considerations
- **Terminations**
  - The source proposes an allocation of the PAL to each emissions unit
  - Permitting authority issues a revised permit allocating the PAL
  - Future physical/operational changes subject to major NSR

# STAPPA/ALAPCO – Baseline Emissions

- **Option 1 – Declining Actuals PAL**
  - Starting Point – Baseline Emissions + Significance Increase
  - Achieve BACT equivalent emissions rate within 5 years
  - CAP adjustments for new units
- **Option 2 – Declining Allowables PAL**
  - Same Starting Point
  - Achieve BACT on all Major and Significant emissions units within 5 years
  - Cap adjustments for new units
- **Option 3 – Nondeclining Actuals PAL**
  - Emissions Cap is absolute
  - Same baseline as above

# The Clean Unit Test



- **An alternate applicability test for NSR**
- **“Clean Units” can be modified without triggering NSR if the change does not cause a clean unit to exceed its permitted allowable emissions and the change doesn’t compromise the basis for a BACT/LAER determination**

# Clean Unit Status

- **Automatic for emissions units subject to Major NSR BACT/LAER requirements**
- **Permitting process to grant Clean Unit status to non-NSR units**
  - Comparable to BACT/LAER based on
    - RBLC Information, or
    - Case-by-case demonstration that controls are “substantially as effective” as BACT/LAER (LAER only in NA areas)
  - Requires demonstration that NAAQS, Increments and AQRVs are not violated or adversely impacted
- **Clean Unit status is available for 10 years after applying emissions controls**

# STAPPA/ALAPCO – Clean Units

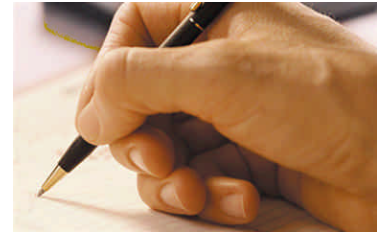
- **Special provisions for Clean Units to avoid BACT/LAER requirements**
- **Emissions increases from Clean Units should be included in applicability tests**
- **Clean Unit status effective for 5 years**
  - Applies to BACT determinations made up to 2 years prior to adoption of state rule
  - Applies for 5 years to determinations made after state rule is adopted
- **Non NSR Units must submit BACT or LAER analysis for review to qualify**



# STAPPA/ALAPCO - PCP Exclusion

- **Intent is to allow an air pollution control project to avoid major NSR despite a collateral significant increase in emissions**
- **PCP exclusion exists in a policy memo (1994) for industry and in the existing NSR rules for EUSGUs**
- **Presumptive PCP status granted to identified air pollution control technologies and pollution prevention type projects, or**
- **Two-part eligibility test**
  - **Environmentally Beneficial Test – show that the benefits outweigh the emissions increase**
  - **Air Quality Test – shows that a project will not cause or contribute to a NAAQS, PSD increment, or AQRV problem**

# The RMRR Exclusion



- **The “Old” NSR Rules exclude routine maintenance, repair and replacement from the definition of modification**
- **No additional regulatory language to help define RMRR**
- **EPA Policy: case-by-case determination based on nature, extent, purpose, frequency and cost of a project**
- **December Proposal: two options for RMRR**
  - Annual maintenance budget allowance
  - Equipment replacement provisions

# The Promulgated RMRR Equipment Replacement Provision

- **Equipment replacement excluded from NSR, if**
  - Replacing an existing component with an identical or functionally equivalent component
  - The fixed capital cost of the replaced component including installation costs does not exceed 20% of the replacement value of the process unit
  - The replacement does not change the basic design parameters of the process unit, and
  - The replacement does not cause the unit to exceed any emissions limits.

# STAPPA/ALAPCO - RMRR

- **Option 1 – Definition of Modification is Updated but Case-by-Case review remains**

*“ the owner or operator shall consider the nature, extent, purpose, frequency, and cost of the work to be performed. Routine maintenance, repair and replacement activities are narrow in scope, do not result in increased capacity, occur with regular frequency, and involve limited expense.”*

- **Option 2 – Same as Option 1 but Permitting Authority publishes list of routine and non-routine activities**

# Reforms to be Proposed



- **Debottlenecking**
- **Aggregation of multiple projects**
- **The role of the FLM**
- **Clean-up issues e.g. CFC thresholds**
- **The need for preconstruction monitoring**
- **Allowable pre-permit activities**

# Is It Meaningful Relief?

- **In SIP States – not for a long time**
- **In Delegated States – maybe, but the state may resist or enforce its own rules**
- **Two critical issues have not been resolved**
  - Debottlenecking
  - Project aggregation
- **It is not simpler**

# The Big Picture In Enforcement

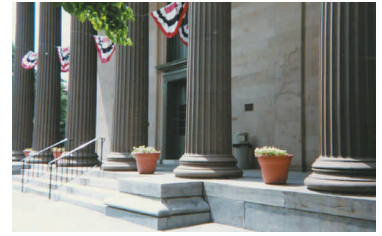
- **Misuse of RMRR Exclusion, e.g.**
  - TVA
  - Refinery litigation
- **Failure to aggregate projects**
- **Debottlenecking**

# Typical Application Problem Areas Noted by EPA

- **Improper Use of Exemptions**
  - What is routine repair and replacement?
  - Use of alternative fuels
- **Failure to Recognize Changes**
  - Catalyst replacements that Increase capacity
  - Removing flue gas recirculation systems
- **Improper Emissions Estimates**
  - Reliance on AP-42 is not a shield
  - Debottlenecked emissions increases
  - The potential to actual test
- **Improper Netting**



# Stay Tuned



- **Litigation is underway**
- **Conflicting court opinions are creating some turmoil**
- **State training is a huge issue**
- **Additional Rulemakings in the works**



# Q and A Session

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