New Source Review Workshop

SEPTEMBER 17, 2015 – SANTA BARBARA. CASA NUEVA

SEPTEMBER 18, 2015 – SANTA MARIA. SHEPARD HALL PUBLIC LIBRARY

Staff Introductions

Michael Goldman – Engineering Manager

Timothy Mitro – Air Quality Engineer, Rules

David Harris – Engineering Supervisor

Housekeeping Items

- Emergency Exits
- Bathrooms
- Business Cards
- Sign-up Sheet and Infographics
- Digital Recording
- Please Take Conversations Outside

Our Mission

Our mission is to protect the people and the environment of Santa Barbara County from the effects of air pollution.

Overview

- Basics of New Source Review
- Our Air Quality Status
- Current New Source Review Rules
- Proposed Rule Revisions
- Air Resources Board and EPA Oversight
- Next Steps
- Public Feedback
- Questions

Basics of New Source Review

- What is New Source Review (NSR)?
- Who does NSR apply to?
- When does NSR not apply?
- What is an Authority to Construct?
- Best Available Control Technology (BACT)
- Offsets and Emission Reduction Credits (ERCs)
- Air Quality Impact Analyses (AQIA)
- Public Noticing and Hearings

What is New Source Review - NSR?

- NSR is a pre-construction permitting program
- It is an important tool to help the County attain and maintain compliance with State and National Ambient Air Quality Standards
- NSR is composed of two parts:
  - Nonattainment Review (NAR)
  - Prevention of Significant Deterioration (PSD)
- There are both State and Federal NSR program requirements
- SBCAPCD implements these NSR programs in a unified permit process
- District staff evaluate permit applications to determine if applicable requirements apply
  - Best Available Control Technology (BACT)
  - Offsets and Emission Reduction Credits (ERCs)
  - Air Quality Impact Analyses (AQIA)
- Each of the above have specific thresholds that trigger their requirement

Who does NSR apply to?

- New Source Review applies to “stationary sources” that emit air pollution
- This includes new sources or modifications to existing sources
- Examples of projects subject to NSR include:
  - Gas stations
  - Dry cleaners
  - Offshore oil and gas platforms
  - Onshore oil and gas production
  - Medical device manufactures
  - Cement batch plants
  - Boilers
  - Wastewater treatment plants
  - Wineries

When does NSR not apply?

- New Source Review only applies to “stationary sources”
- NSR does not apply to specific sources that are exempt from permit under Rule 202
- NSR does not apply to existing permitted facilities if no changes are occurring
- The following are not subject to NSR:
  - Motor vehicles
  - Trains and planes
  - Consumer products
- Most agricultural operations. Large operations are subject to permit and NSR
- Greenhouse Gas (GHG) emissions are not subject to NSR.
  - Exception is for existing major sources that propose projects with > 75,000 tpy increases of GHGs

What is an Authority to Construct?

- An Authority to Construct is a permit that provides the District's approval of a project
- Some agencies call this a Permit to Construct
- An ATC permit must be obtained prior to construction
- District staff review the application for compliance with all local, state and federal rules
- We also ensure that the proposed project is consistent with any lead agency approvals
- When lead, the District applies CEQA through our Environmental Review Guidelines (4/30/15)
- All ATC permits are enforceable documents by our Compliance Division
- ATC permits contain emission and operational limits, as well as monitoring, recordkeeping, and reporting requirements
- Once compliance is confirmed, the District issues a Permit to Operate for the facility

Best Available Control Technology - BACT

- BACT = Best Available Control Technology
- BACT is triggered if the project's emissions exceed 25 pounds per day
  - Potential-to-Emit (PTE) based calculation
- Is a control device or technique that meets current state-of-the-art standards
- There are normally two components to a BACT determination:
  - Technology
  - Emissions standard
- Example: Oilfield Steam Generator
  Technology: Low-NO_x burner design
  Standard: 7 ppmvd NO_x @ 3% O_2
- Example: Electronic Device Manufacturer
  Technology: Regenerative Thermal Oxidizer
  Standard: 98% destruction efficiency

Offsets and Emission Reduction Credits

- Offsets are mitigation required for new projects that exceed NSR thresholds
- This mitigation is in the form of Emission Reductions Credits (ERCs)
- A “net air quality benefit” is required and this is achieved by providing ERCs at a ratio set by the rule
- ERCs are created by companies that voluntarily reduce their emissions
- ERCs must be: Surplus, Quantifiable, Enforceable, Permanent, and Real
- Examples of how ERCs are created:
  - Electrification of water wells powered by diesel engines
  - Installation of SCR on a turbine compressor
  - Shut down of a facility
- Rule 806 (*Source Register*) sets the standards for creating and tracking ERC Certificates
- APCD webpage contains: list of all active ERC Certificates, list of all transactions, and costs per sale

Air Quality Impact Analyses - AQIA

- AQIA = Air Quality Impact Analyses
- An AQIA consists of the following:
  - Air dispersion modeling to ascertain compliance with State and National Ambient Air Quality Standards
  - Air quality increment analysis
  - Class I and Class I Area impact analysis
  - Visibility, soils, and vegetation analysis
- AQIAs are required for larger projects

Public Noticing and Hearings

- The NSR process has requirements for public noticing and public hearings
- Required by projects that trigger PSD, AQIA, and/or offset requirements
- Makes available all analyses to the public, Air Resources Board, and adjoining Districts
- Notification via Newspaper
- A 30-day public notice period
- Public Hearings are held if sufficient interest is generated or if any aggrieved party requests so in the 30-day public comment period
- Control Officer makes final decision on the project based on all public comments

Our Air Quality Status

- State and National Ambient Air Quality Standards (AAQS) *
- We comply with all National AAQS
- We do not comply with the State 8-hour ozone and 24-hour PM_{10} standards
- For Federal Rules, we are in “Attainment”
- For State Rules, we are in “Nonattainment” for ozone and PM_{10}
- Attainment status is based on a network of air monitoring stations
- For the National ozone standard, we operate under a “Maintenance Plan”
- For the State ozone standard, we follow a State-approved Clean Air Plan

* See http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Pollutants with Ambient Air Quality Standards

- Ozone (O_3), including precursor pollutants (ROC, NO_x)
- PM_{10} – Respirable Particulate Matter
- $PM_{2.5}$ – Fine Particulate Matter
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2)
- Lead (Pb)
- Hydrogen Sulfide, Sulfates, Vinyl Chloride, Visibility Reducing Particles

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	

Current New Source Review Rules

- Regulation VIII (*New Source Review*) was adopted in April 1997 as Rules 801-806
- Rule 808 (*NSR for Major Sources of HAPS*) was adopted in May 1999
- Rule 810 (*Federal Prevention of Significant Deterioration – PSD*) was adopted in January 2011
- All these rules were submitted to EPA for inclusion in the State Implementation Plan (SIP)
- Rules 801-806 are ARB-approved
- EPA proposed approval of Rule 810 in the July 24, 2015 Federal Register
- Rule 803 is the local PSD rule for attainment pollutants

Proposed Rule Revisions

No.	Rule	Change
1	All	Revising rule text to be clearer and to eliminate redundancies
2	801	Replacing the NEI calculation methodology with the PTE methodology
3	802/804	Revising the offset program thresholds, ratios, and calculation basis
4	802	Adding offset exemption for equipment replacements
5	802	Adding offset exemption for emergency generators/flood/firewater pumps
6	803	Merging the requirements of Rule 803 into Rules 802, 804, and 805
7	802	Adding $PM_{2.5}$ to the attainment pollutant permitting requirements
8	805	Revising the AAQS and increment AQIA calculation procedures
9	809	New Rule 809 for Federal Minor Source New Source Review

No. 1 – Text Revisions/Clarifications

- Rule text was re-written to improve clarity, readability, and intent
- Redundant requirements were removed
- Grammatical errors were corrected
- New definitions were added as needed (e.g., $PM_{2.5}$)
- Existing definitions were updated, moved, or deleted to reflect proposed changes
- Every change is shown in strikeout/underline in each proposed amended rule
- Tables 2-1 through 2-9 in the Staff Report details and maps out each change

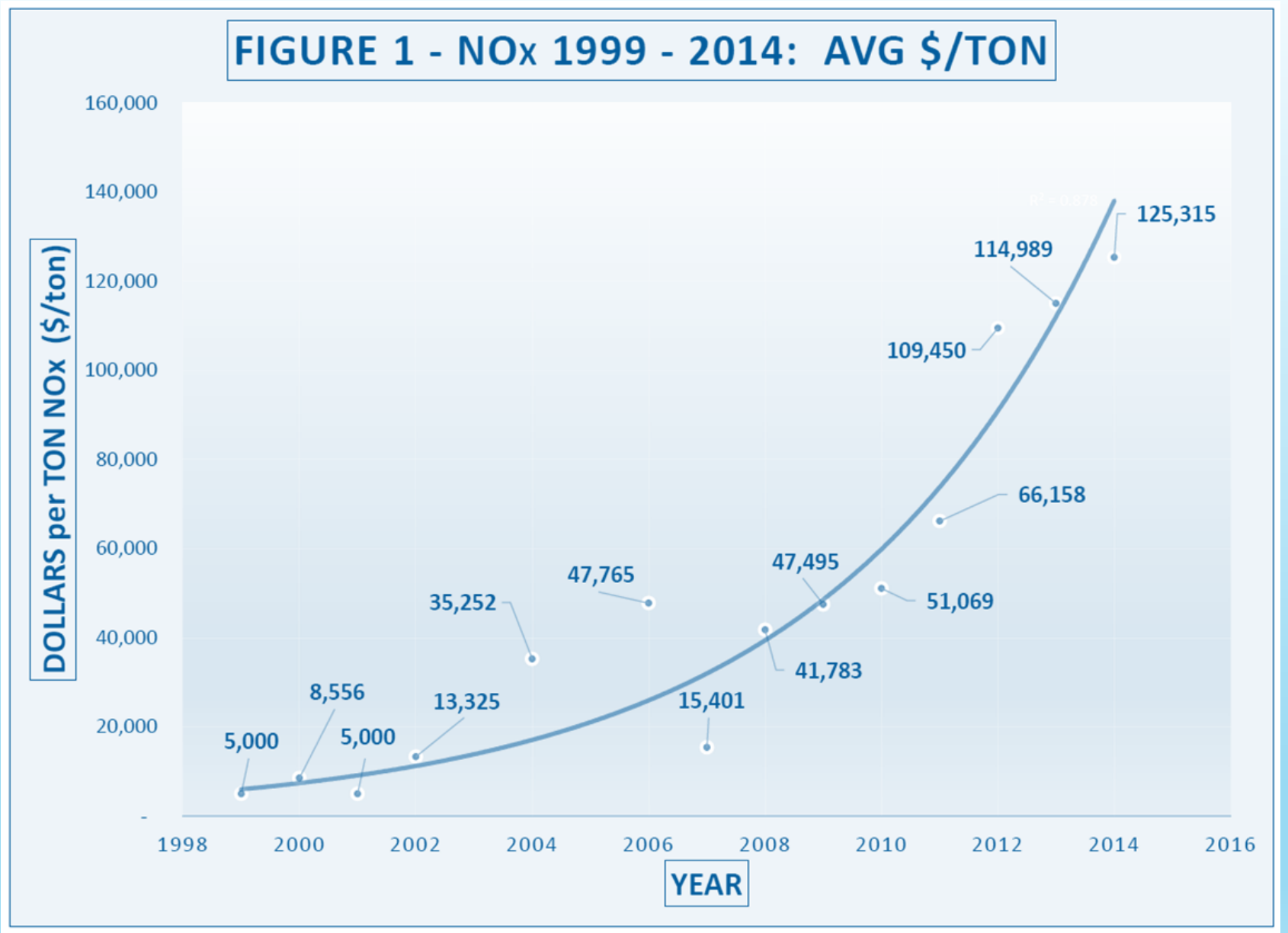
No. 2 – Calculation Methodology

- We currently use two calculation methodologies in the permit process
  - Potential to Emit (PTE)
  - Net Emissions Increase (NEI)
- Our proposal is to eliminate the NEI calculation and use the PTE method only
- The PTE methodology is easy and straight forward; it's used for our BACT threshold
- The NEI methodology can get convoluted and be difficult to track
- It's common for both permittees and District staff to calculate the NEI wrong
- The Health & Safety Code air quality mandates are based on the PTE methodology
- No other California air district uses the NEI methodology (except for Federal PSD)
- Using the PTE methodology results in less complexity and more certainty

No. 3 – Offset Program Revisions

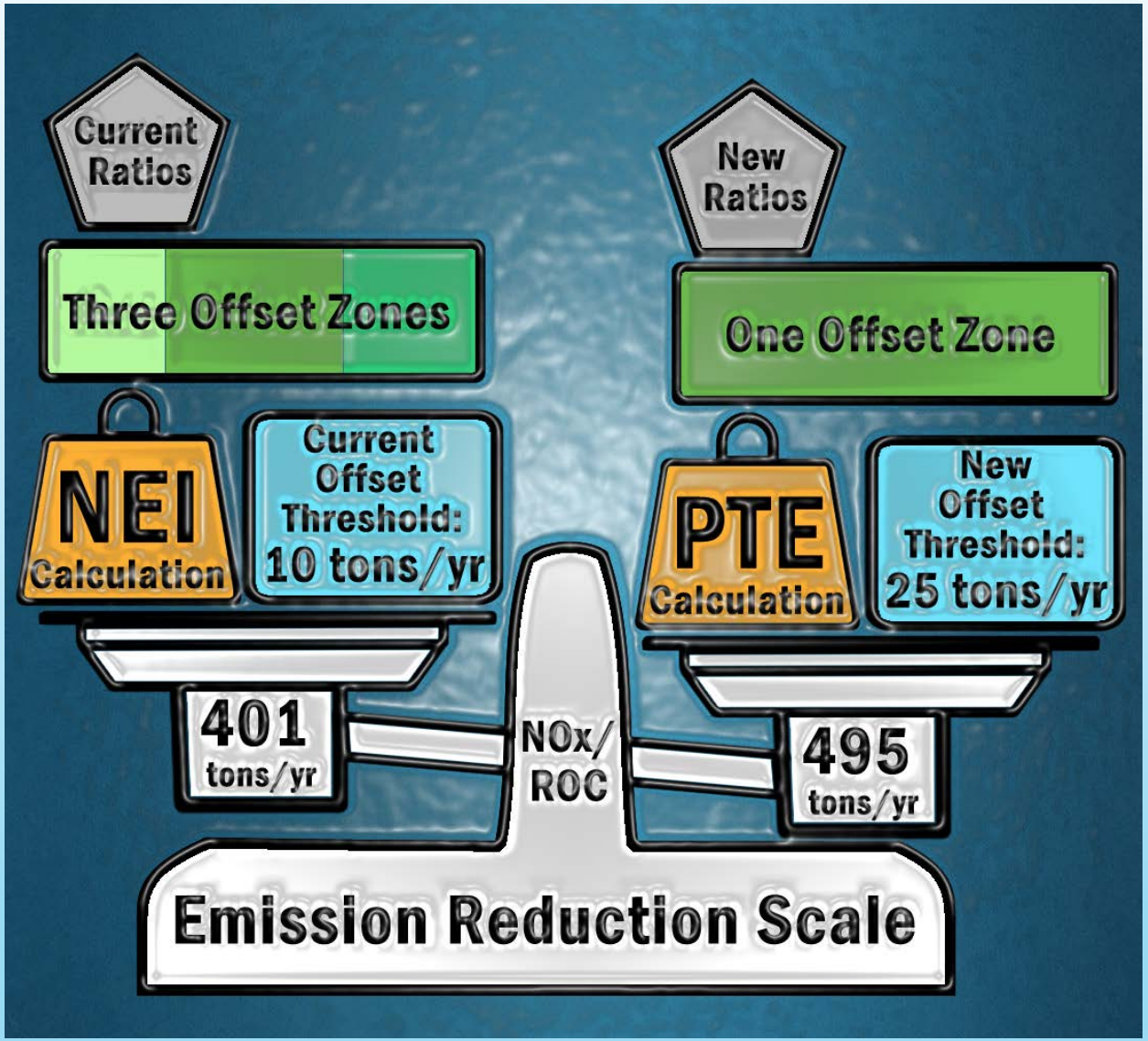
- State Health & Safety Code Section 40918 – Moderate Classification for ozone
- Mandated to offset emission increases at sources with a PTE over 25 tpy
- Currently implement an “equivalent” NEI-based program using different thresholds of 10 tpy and 55 lb/day, offset zones and trading ratios
- ARB-required program tracking shows that we meet the State mandate
- Program difficulties include:
  - ERC costs at $125,000 per ton
  - Availability of ERCs is low
  - Zones are segmenting program viability
  - Medium-sized companies are being constrained by current alternative approach

FIGURE 1 - NOx 1999 - 2014: AVG $/TON



No. 3 – Continued

- District is proposing revamping offsets program to better align with State mandate
- The proposal includes:
  - Changing from an NEI-based to a PTE-based calculation methodology
  - Revising the offset threshold to 25 tpy
  - Changing to a single zone
  - Revising the offset trading ratios
  - Allowing for offset trades with Ventura and San Luis Obispo Counties
- Analyses performed to ascertain if the proposed changes are as stringent as the current rules "*on a programmatic basis*" – Answer is yes
- Evaluated past 17 years of data and applied requirements of both rule sets
- ARB has reviewed our analyses and concurs with our approach and conclusions
- The Question: How is 25 tpy more stringent than 10 tpy?


Current Ratios
Three Offset Zones
NEI Calculation
Current Offset Threshold: 10 tons/yr
401 tons/yr
NOx/ ROC
New Ratios
One Offset Zone
PTE Calculation
New Offset Threshold: 25 tons/yr
495 tons/yr
Emission Reduction Scale

No. 4 – Offset Exemption: Replacements

- New proposal to exempt functionally equivalent equipment replacements
- Certain criteria must be met
  - The equipment is functionally equivalent
  - BACT is applied to the replacement
  - There is no increase in the potential to emit
  - There is no de-bottlenecking of the process
- Encourages equipment modernizations with newest emission controls
- Discourages the practice of repairing older, higher-emitting equipment simply to avoid offsets
- Will result in lower actual in-the-air emissions
- ARB has asked us to track the implementation of this exemption

No. 5 – Offset Exemption: ES Engines

- ES Engine = Emergency standby engine
- Used for electrical generation, flood water pumping, or firewater pumping
- Permits already limit annual hours of operation from 20 to 50 hours
- District had not expected these engines to trigger offsets when the Rule 202 exemption was modified in 2005
- Not subject to SB 288 analysis since this equipment was exempt in 2002

No. 6 – Merge Rule 803 Requirements

- Rule 803, Prevention of Significant Deterioration, is a local rule only
- It was originally our federally delegated PSD rule
- Rule 810, Federal PSD, now addresses EPA's PSD requirements
- The requirements of Rule 803 must be maintained due to SB 288
- To minimize redundancy and confusion, Rule 803 requirements have been merged into Rules 802, 804, and 805.
- Table 2-5 in the Staff Report details and maps out the changes
- Rule 803 will be repealed

No. 7 – Add $PM_{2.5}$ to Permit System

- $PM_{2.5}$ is a new criteria pollutant with both State and Federal AAQS
- We are currently in attainment for both State and Federal standards
- Regulating $PM_{2.5}$ from new/modified sources helps us maintain compliance with the established 24-hour and annual AAQS and increments
- This is consistent with our Board's practice of regulating attainment pollutants and aligns with new proposed Rule 809 (*Federal Minor Source NSR*)
- BACT and AQIA requirements would be applicable at the set thresholds
- Offsets for $PM_{2.5}$ are not proposed
- See our webpage for detailed technical information on $PM_{2.5}$

No. 8 – Update AAQS/Increment Table

- The changes are technical
- Table 1 in Rule 805 was revised to reflect changes since 1997
  - Sulfur dioxide: New 1-hour standard and revised 24-hour standard
  - Nitrogen dioxide: Revised annual standard and revised 1 hour standard (new federal 1-hour)
  - Carbon Monoxide: Revised 1-hour standard
  - PM_{10}: Revised annual standard and consolidated 24-hour standard/increment into a single line
  - $PM_{2.5}$: New annual and 24-hour standards and increments
- AQIA process simplification:
  - Baseline dates eliminated; existing background monitored data used instead
  - Alternative mitigation (increment range) text was revised to the 10-year option only
- New Major Sources and Major Modifications must still comply with Federal PSD under Rule 810

No. 9 – Federal Minor Source NSR Rule

- EPA requirement under the Clean Air Act
- Our existing permitting rules did not meet all of EPA's requirements
- District chose to create a new rule to specifically address this EPA mandate
- This rule, and those referenced by it, will be submitted for SIP approval
- Rules 801-806 will not be submitted for SIP approval
- We designed this rule such that compliance with proposed amended Rules 801-806 will ensure that the requirements of this rule are met
- Rule 809 requires:
  - Permits for pre-construction and operation
  - A finding of compliance with AAQS
  - Recordkeeping
  - A finding that the project complies with all applicable requirements
  - Public notification and a public hearing process

Air Resources Board and EPA Oversight

- Draft proposed amended rules and staff report have been reviewed by ARB and EPA – their input is reflected in these draft documents
- EPA's main input was the need for a Federal Minor Source NSR rule
- ARB's focus was on compliance with SB 288
- SB 288 mandates no relaxation to a District's NSR rule set, as it existed on December 30, 2002
- Key area of review was our offsets program
- Review basis: Is there a relaxation to the offsets program "on a programmatic basis?"

ARB/EPA Oversight: Continued

- District analyzed the existing set of rules to the proposed amended rules using the same data set (past 17 years of permitting actions)
- The total mitigation achieved under each program was determined
  - Ozone precursors (NO_x + ROC) - Mitigation
    - Current Rules: 401 tons vs. Amended Rules: 495 tons ✅
  - SO_x – Mitigation
    - Current Rules: 341 tons vs. Amended Rules: 352 tons ✅
  - PM_{10} – Mitigation
    - Current Rules: 61 tons vs. Amended Rules: 75 tons ✅
- Our conclusion: Proposed rule amendments comply with SB 288

Next Steps

- Review public comments
- Discuss proposed changes with affected parties
- Revise analyses and documents
- Hold additional workshops if needed
- Community Advisory Council (CAC) meetings
- Last round of ARB and EPA review
- Prepare and release draft EIR
- Board of Directors hearing for consideration

Public Feedback

- Written feedback is preferred for significant issues of concern
- Call us or arrange a meeting to discuss specific concnerns or if you have general questions
- Attend CAC meetings
- Attend Board meeting

Available Resources

- Draft Staff Report
- APCD Webpages
  - http://www.ourair.org/rules-under-development/
  - http://www.ourair.org/nsr/
- ARB Webpages
  - http://www.arb.ca.gov/nsr/nsr.htm
  - http://www.arb.ca.gov/nsr/sb288/sb288.htm
- Contact staff
  - Michael Goldman. 961-8821. goldmanm@sbcapcd.org
  - Timothy Mitro. 961-8883. mitrot@sbcapcd.org

Questions?