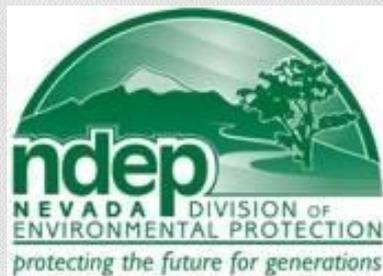


# Implementation of New Air Pollution Standards & Air Quality Operating Permits



Workshop Meeting – November 26, 2013

# National Ambient Air Quality Standards

- Under the Clean Air Act (CAA), EPA must review the standards for each criteria pollutant every 5 years.
- Criteria pollutants: CO, Pb, NO<sub>2</sub>, SO<sub>2</sub>, PM, O<sub>3</sub>.
- EPA must tighten standards if necessary to be protective of public health & welfare.
- EPA is not allowed to consider cost when setting standards.

# State Implementation of Federal Standards

- CAA contemplates that States will implement these federal air pollution standards.
- States must maintain an Approved State Implementation Program (SIP) to implement the standards. Otherwise, EPA will implement them.
- State regulation/implementation cannot be less stringent than federal law.

# Standards at Issue

Today's workshop addresses the following (new) pollutant standards that NDEP is required to implement:

- **2006 PM<sub>2.5</sub> (24-hr & annual)**
- **2010 NO<sub>2</sub> (1-hr)**
- **2010 SO<sub>2</sub> (1-hr)**

# Current Federal Standards (NAAQS)

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
<b>Carbon Monoxide</b> [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
<b>Lead</b> [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup>	Not to be exceeded
<b>Nitrogen Dioxide</b> [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
<b>Ozone</b> [73 FR 16436, Mar 27, 2008]		primary and			
		secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
<b>Particle Pollution</b> 14-Dec-12	<b>PM2.5</b>	primary	Annual	12 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	<b>PM10</b>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
<b>Sulfur Dioxide</b> [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

# EPA Lingo: “Minor New Source Review”

- Minor NSR is for pollutants from stationary sources that do not require [Prevention of Significant Deterioration \(PSD\)](#) or [nonattainment NSR](#) permits.
- The purpose of minor NSR permits is to prevent the construction of sources that would interfere with attainment or maintenance of a [National Ambient Air Quality Standard \(NAAQS\)](#) or violate the control strategy in nonattainment areas. Also, minor NSR permits often contain permit conditions to limit the sources’ emissions to avoid PSD.
- States are able to customize the requirements of the minor NSR program as long as their program meets minimum requirements. The [permit agency's](#) minor NSR program is part of the State Implementation Plan (SIP).

# State Regulatory Revisions

- EPA requires that SIP revisions have corresponding regulatory authority in State regulation. For Nevada, this is NAC 445B.
  - Update SIP == Update NAC 445B
- Each plan must set forth legally enforceable procedures that enable the State to determine whether the construction or modification of a facility, building, structure or installation, or combination of these will result in interference with attainment or maintenance of a national standard in the State in which the proposed source (or modification) is located or in a neighboring State. (40 CFR 51.160(a))

# Minimum Requirements

- Such procedures must include means by which the State or local agency responsible for final decision-making on an application for approval to construct or modify will prevent such construction or modification if it will interfere with the attainment or maintenance of a national standard. (40 CFR 51.160(b))
- “The procedures must discuss the air quality data and the dispersion or other air quality modeling used to meet the requirements of this subpart.
  - **(1)** All applications of air quality modeling involved in this subpart shall be based on the applicable models, data bases, and other requirements specified in appendix W.” (40 CFR 51.160(f))

# Current NAC Implementation

- **NAC 445B.308:** For new or modified source, applicant must submit environmental evaluation for Director to determine attainment of NAAQS.
- **NAC 445B.310:** Applicant for new or revised permit must submit with the application an environmental evaluation if
  - New project > 25 tpy PTE of a reg. pollutant
  - Mod project if existing source has PTE > 25 TPY for a reg. pollutant or if modification has PTE > 10 TPY for a reg. pollutant.

# Current NAC Implementation

- **NAC 445B.311:** Contents of Environmental Evaluation.
  - Eval for new or modified source must contain... “a dispersion analysis of each regulated air pollutant.”
- **NAC 445B.22097:** Standards of Quality for Ambient Air.
  - Director shall use Nevada Standards in considering whether to issue a permit.

Proposed  
Revision

NAC  
445B.22097

		NEVADA STANDARDS <sup>A</sup>		NATIONAL STANDARDS <sup>B</sup>		
POLLUTANT	AVERAGING TIME	CONCENTRATION <sup>C</sup>	METHOD <sup>D</sup>	PRIMARY <sup>C, E</sup>	SECONDARY <sup>C, F</sup>	METHOD <sup>D</sup>
Ozone	1 hour	0.12 ppm (235 µg/m <sup>3</sup> )	Ultraviolet absorption	0.12 ppm <sup>G</sup> (1979 standard)	Same as primary	Chemiluminescence
	8-hour	--	--	0.075 ppm (2008 standard)		
Ozone-Lake Tahoe Basin, #90	1 hour	0.10 ppm (195 µg/m <sup>3</sup> )	Ultraviolet absorption	--	--	--
Carbon monoxide less than 5,000' above mean sea level	8 hours	9 ppm (10,500 µg/m <sup>3</sup> )	Nondispersive infrared photometry	9 ppm (10 mg/m <sup>3</sup> )	None	Nondispersive infrared photometry
At or greater than 5,000' above mean sea level		6 ppm (7,000 µg/m <sup>3</sup> )				
Carbon monoxide at any elevation	1 hour	35 ppm (40,500 µg/m <sup>3</sup> )				
Nitrogen dioxide	Annual arithmetic mean	0.053 ppm	Gas phase chemiluminescence	53 ppb	Same as primary	Gas phase chemiluminescence
	1 hour	<b>100 ppb</b> ★	--	100 ppb	None	--
Sulfur dioxide	Annual arithmetic mean	0.030 ppm (80 µg/m <sup>3</sup> )	Ultraviolet fluorescence	0.03 ppm <sup>H</sup> (1971 standard)	None	Spectrophotometry (Pararosaniline method)
	24 hours	0.14 ppm (365 µg/m <sup>3</sup> )		0.14 ppm <sup>H</sup> (1971 standard)		
	3 hours	0.5 ppm (1,270 µg/m <sup>3</sup> )		None		
	1 hour	<b>75 ppb</b> ★	--	75 ppb	None	--
Particulate matter as PM <sub>10</sub>	Annual arithmetic mean	50 µg/m <sup>3</sup>	High volume PM <sub>10</sub> sampling	None	None	--
	24 hours	150 µg/m <sup>3</sup>		150 µg/m <sup>3</sup>	Same as primary	High or low volume PM <sub>10</sub> sampling
Particulate matter as PM <sub>2.5</sub>	Annual arithmetic average	<b>15 µg/m<sup>3</sup></b> ★	--	15.0 µg/m <sup>3</sup>	Same as primary	Low volume PM <sub>2.5</sub> sampling
	24-hour	<b>35 µg/m<sup>3</sup></b> ★	--	35 µg/m <sup>3</sup>	Same as primary	--
Lead (Pb)	Nevada: Quarterly arithmetic mean; National: Rolling 3 mo. average	1.5 µg/m <sup>3</sup>	High volume sampling, acid extraction and atomic absorption spectrometry	0.15 µg/m <sup>3</sup>	Same as primary	High volume sampling, acid extraction and atomic absorption spectrometry
Hydrogen sulfide	1 hour	0.08 ppm (112 µg/m <sup>3</sup> ) <sup>I</sup>	Ultraviolet fluorescence	--	--	--

# Who may be impacted ?

**A case-by-case review is required, but typically:**

- **PM<sub>2.5</sub>** – Standard not exceeded unless large bio or oil combustion. Would typically be a major stationary source (PSD) for other criteria pollutants first.
- **1-hr SO<sub>2</sub>** – a challenge for large coal and oil combusting units (like power plants; typically not minor NSR projects).
- **1-hr NO<sub>2</sub>** – a challenge for older, large diesel generators (low stack height with poor dispersion characteristics).

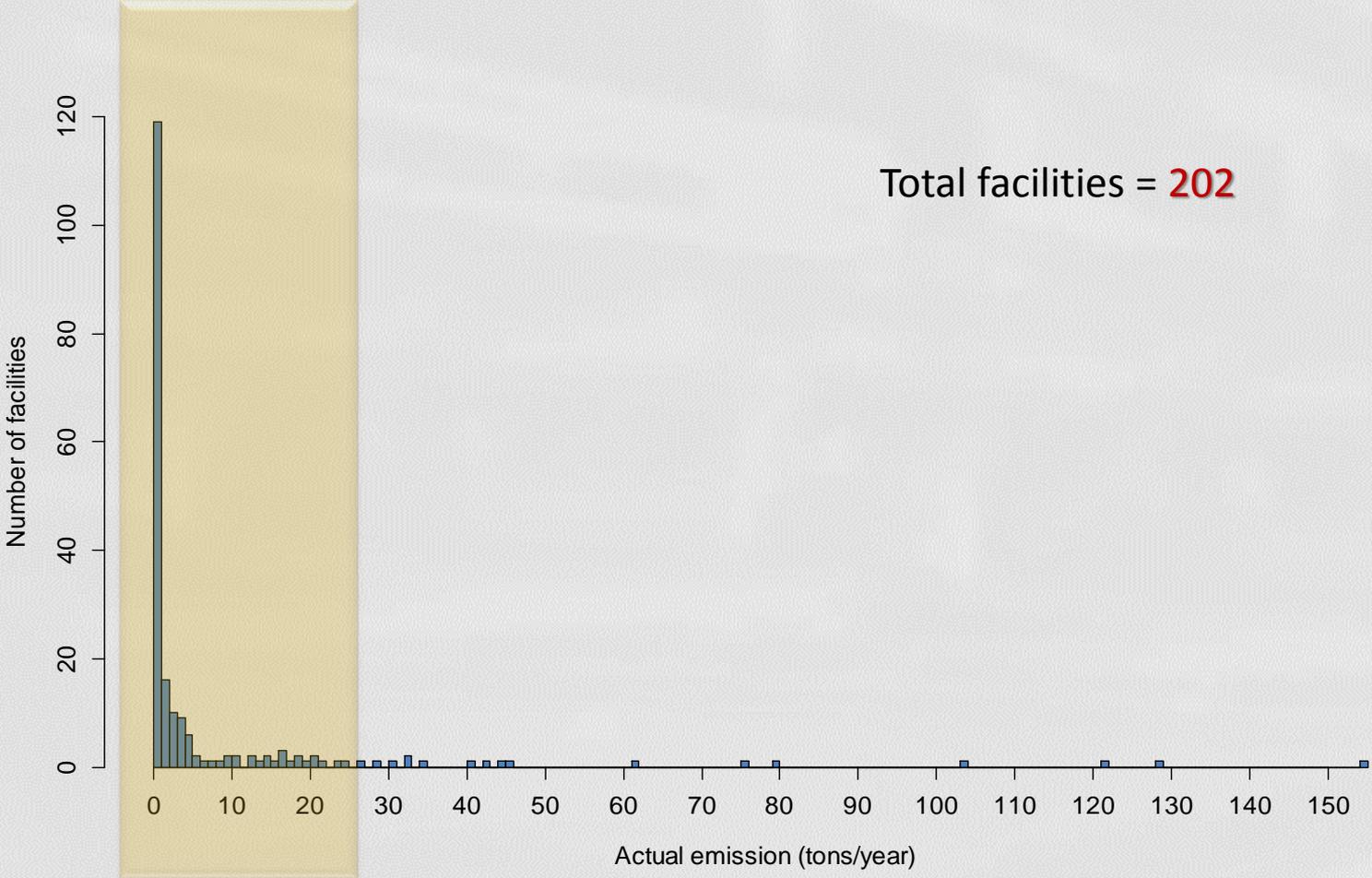
# Who may be impacted ?

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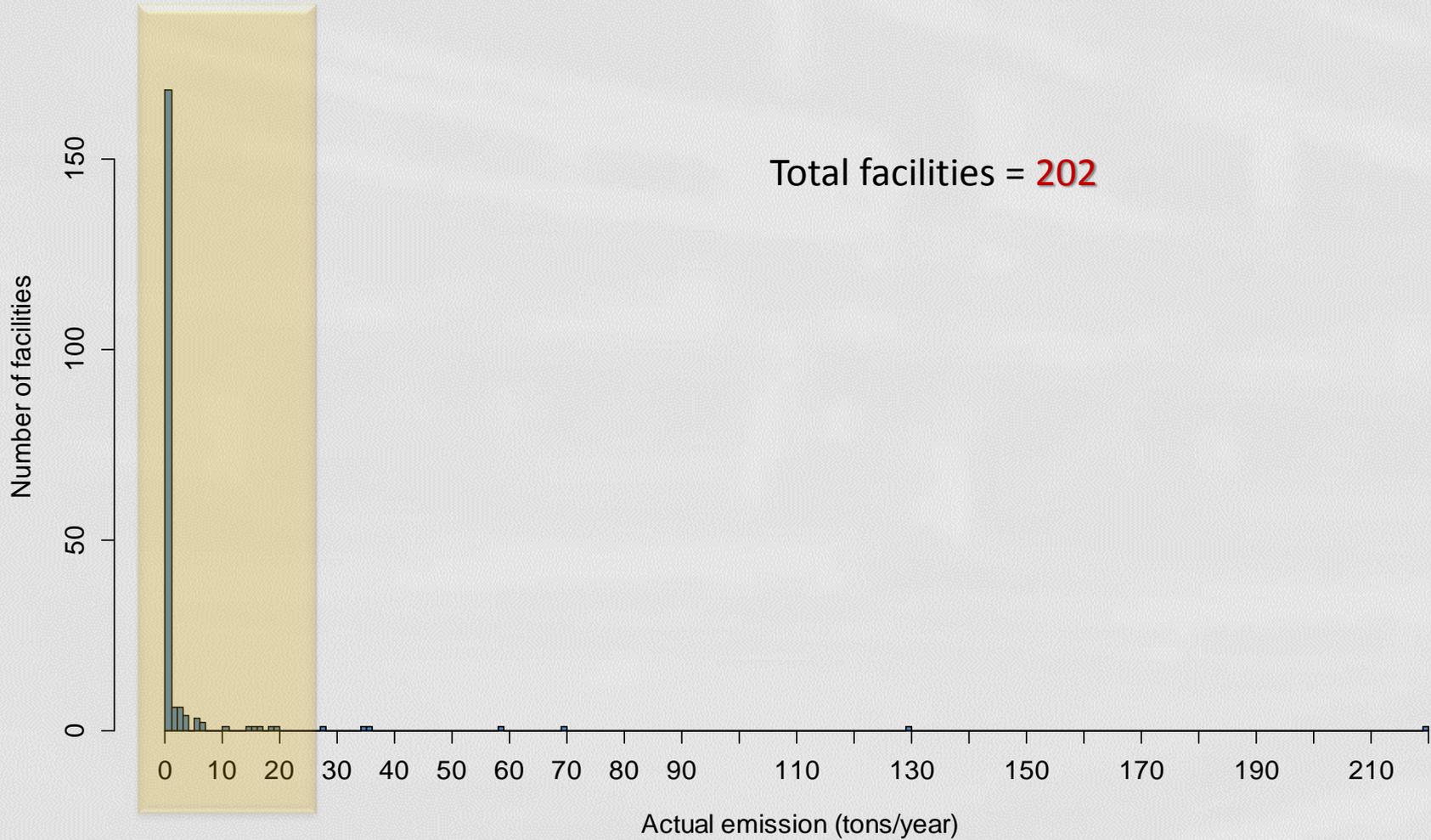
Facilities with permit emission limits (PTE) much higher than actual emissions.

- Remember, environmental evaluation / modeling is based on permit emission limits (PTE).

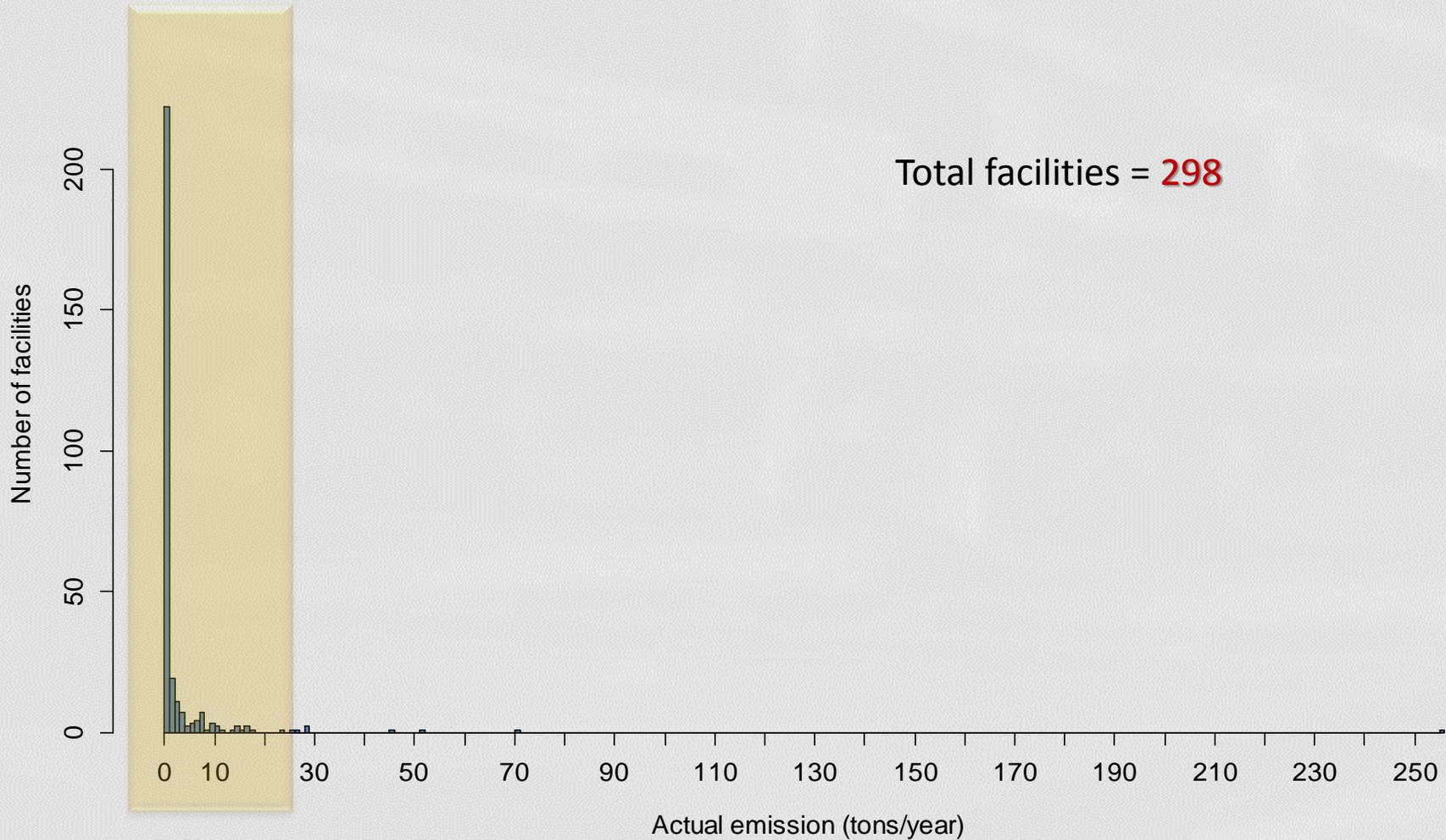
# Non-PSD Facilities and Actual NO<sub>x</sub> Emissions



# Non-PSD Facilities and Actual SO<sub>x</sub> Emissions



# Non-PSD Facilities and Actual PM<sub>2.5</sub> Emissions



# Time Constraints and Possible Sanctions

- States have 3 years to implement a new standard after EPA promulgates it.
- If a State is late or deficient with implementation, EPA requires solution (“FIP”).
- State’s federal funds may be sanctioned (i.e., highway funding).
- State loses program approval and all permit activity must go directly through EPA (EPA Region 9 in San Francisco).
- NDEP is under an accelerated timeline by which it must submit an approval plan to EPA.
  - **Must take to SEC February 2014 and be approved by EPA by October 2014.**

# What to do...

- Don't panic.
- Re-run your environmental model.
  - May already meet the standards.
- If permit limits exceed the standards, consider re-adjusting permit limits to avoid adding new pollution controls.
  - Many permit limits are much higher than actual emissions.
  - Remove emissions PTE that you do not use/need.

# Solutions?

- Tighter standards may require tighter operation methods and/or pollution controls.
  - State can assist with review of permit and options.
  - If decrease PTE, agency is evaluating whether may be administrative amendment or included at renewal (no cost).
  - Model solutions workgroup

# Outreach Efforts

- What can the State do to help with permitting?
  - Local workshops
  - Website information
  - Ombudsman

# Questions and Comments?

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