A RECENT HISTORY OF PM NAAQS RULEMAKING AND $PM_{2.5}$ NEW SOURCE REVIEW IMPLEMENTATION

A&WMA Louisiana Section
2008 Conference

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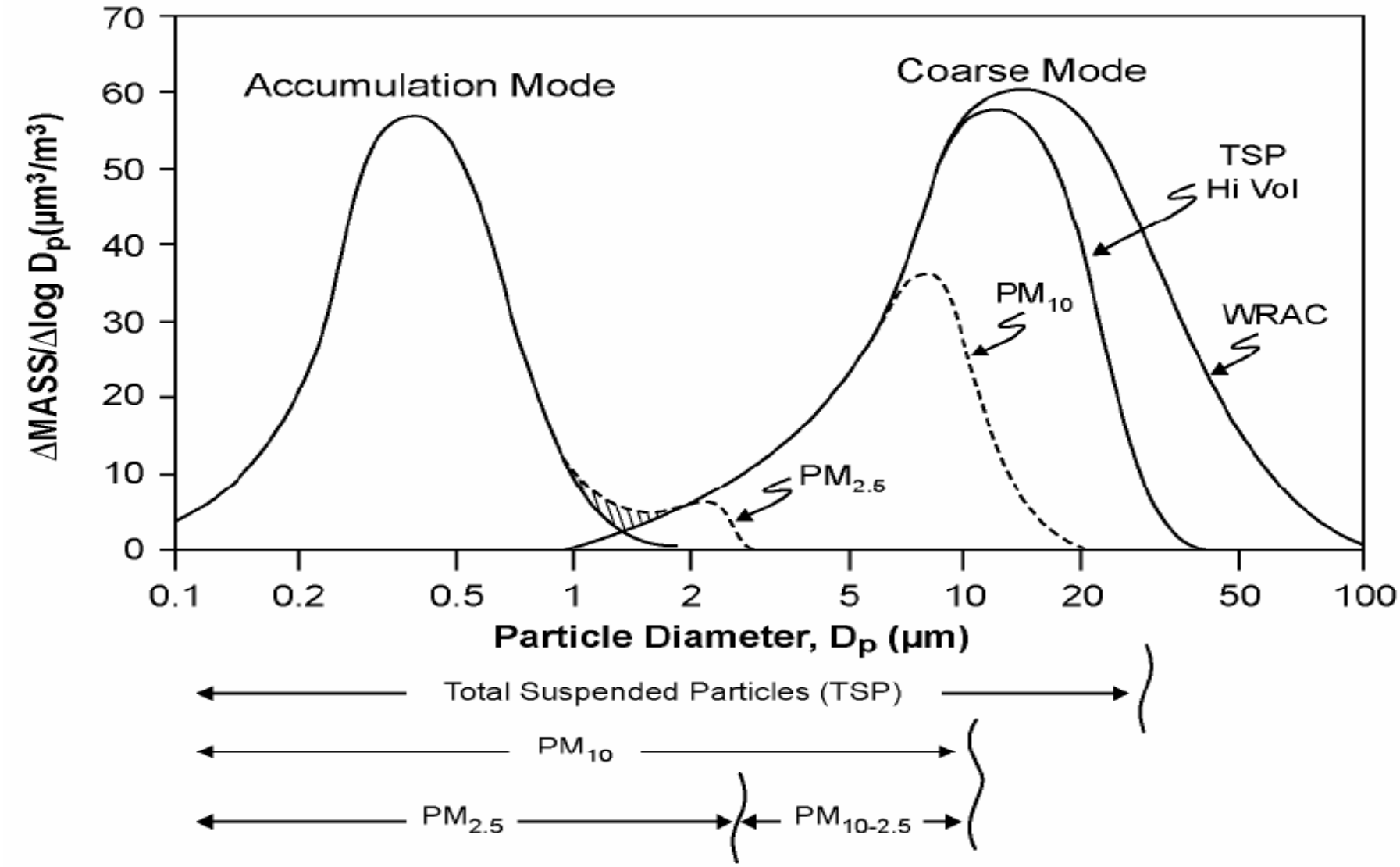
Particulate Matter

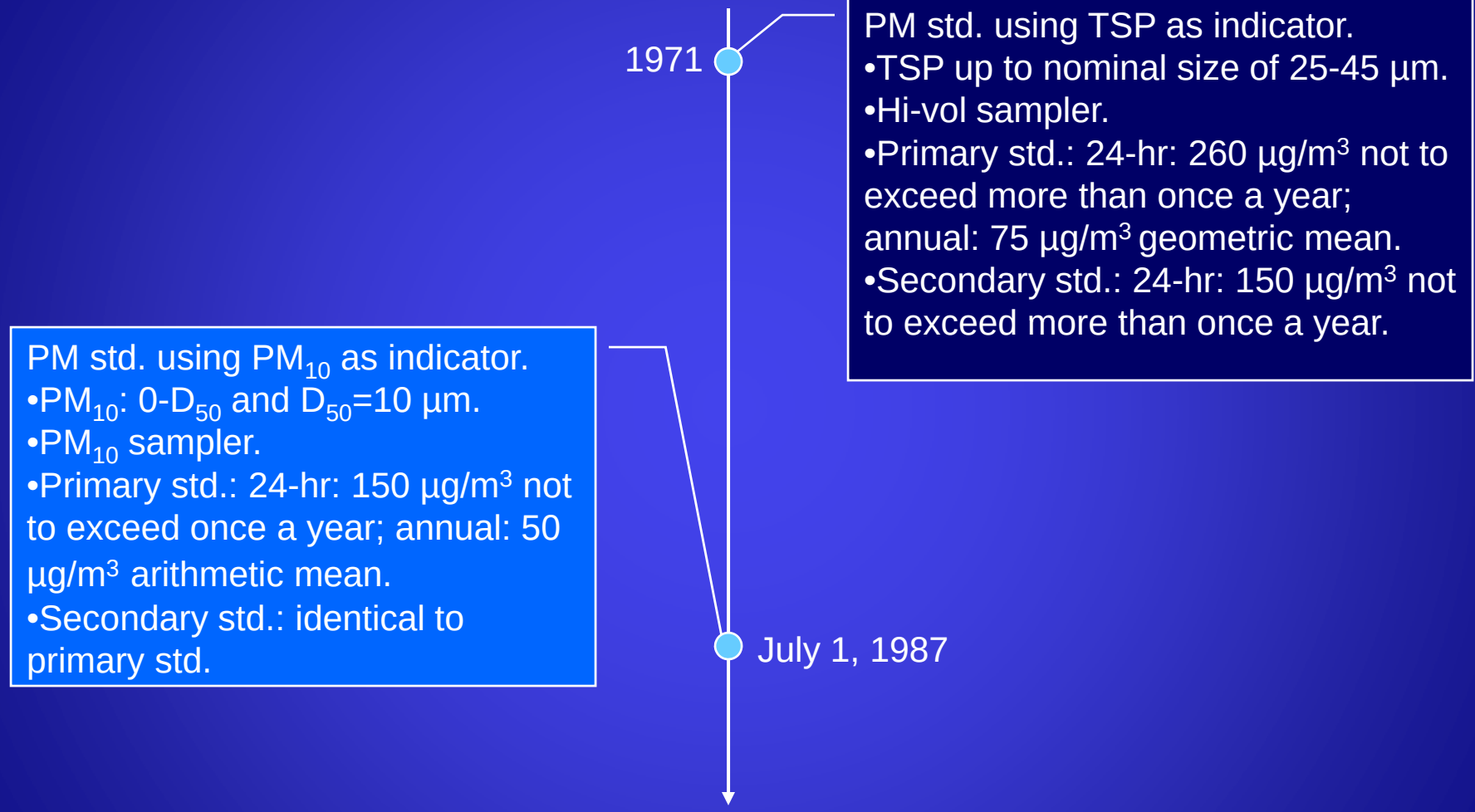


$PM_{2.5}$

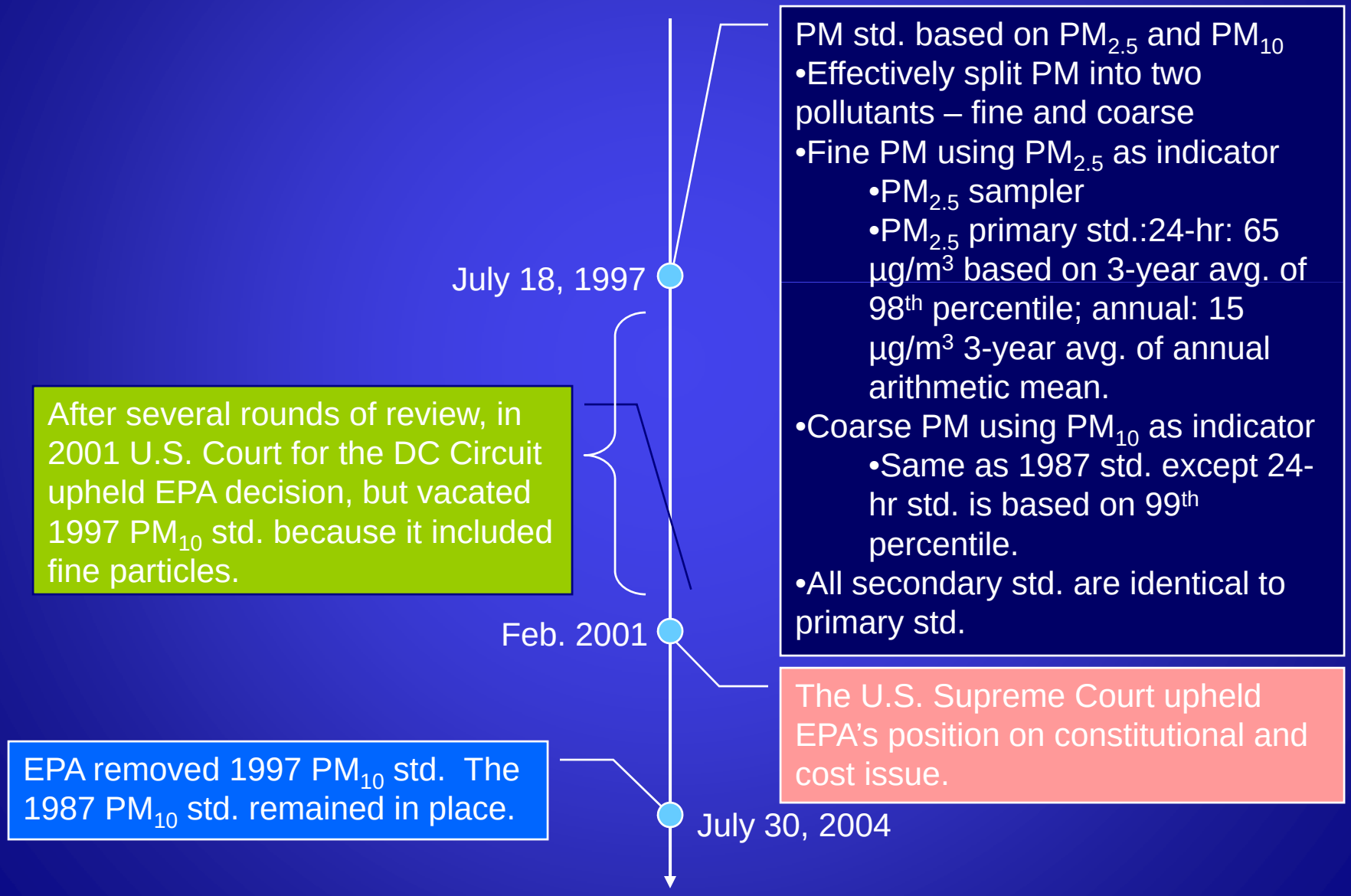
$PM_{2.5}$ or fine particles can be directly emitted or formed by chemical reactions.

Sources of fine particle pollution (or the gases that contribute to fine particle formation) include power plants, gasoline and diesel engines, wood combustion, forest fires, etc.

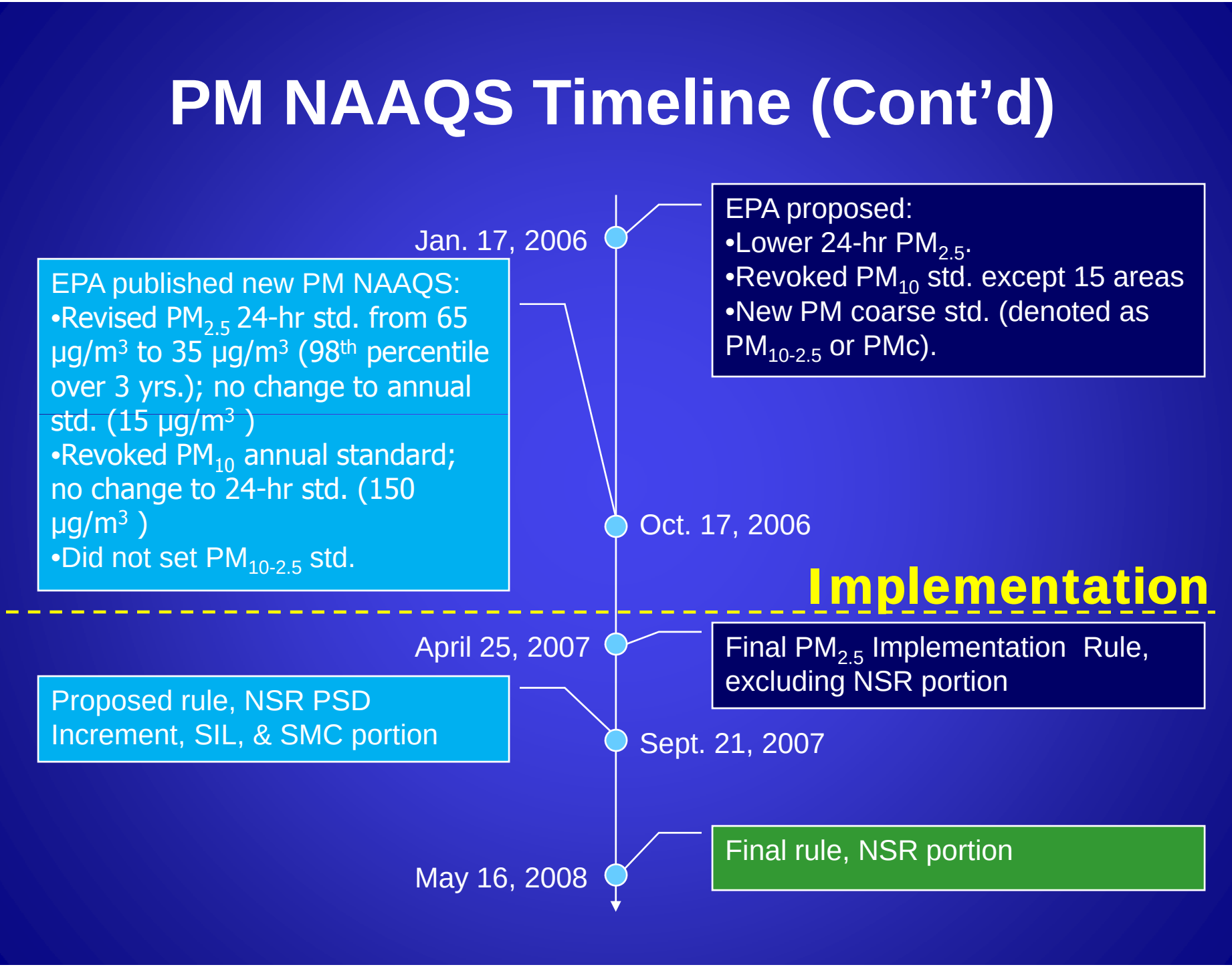
PM NAAQS Timeline



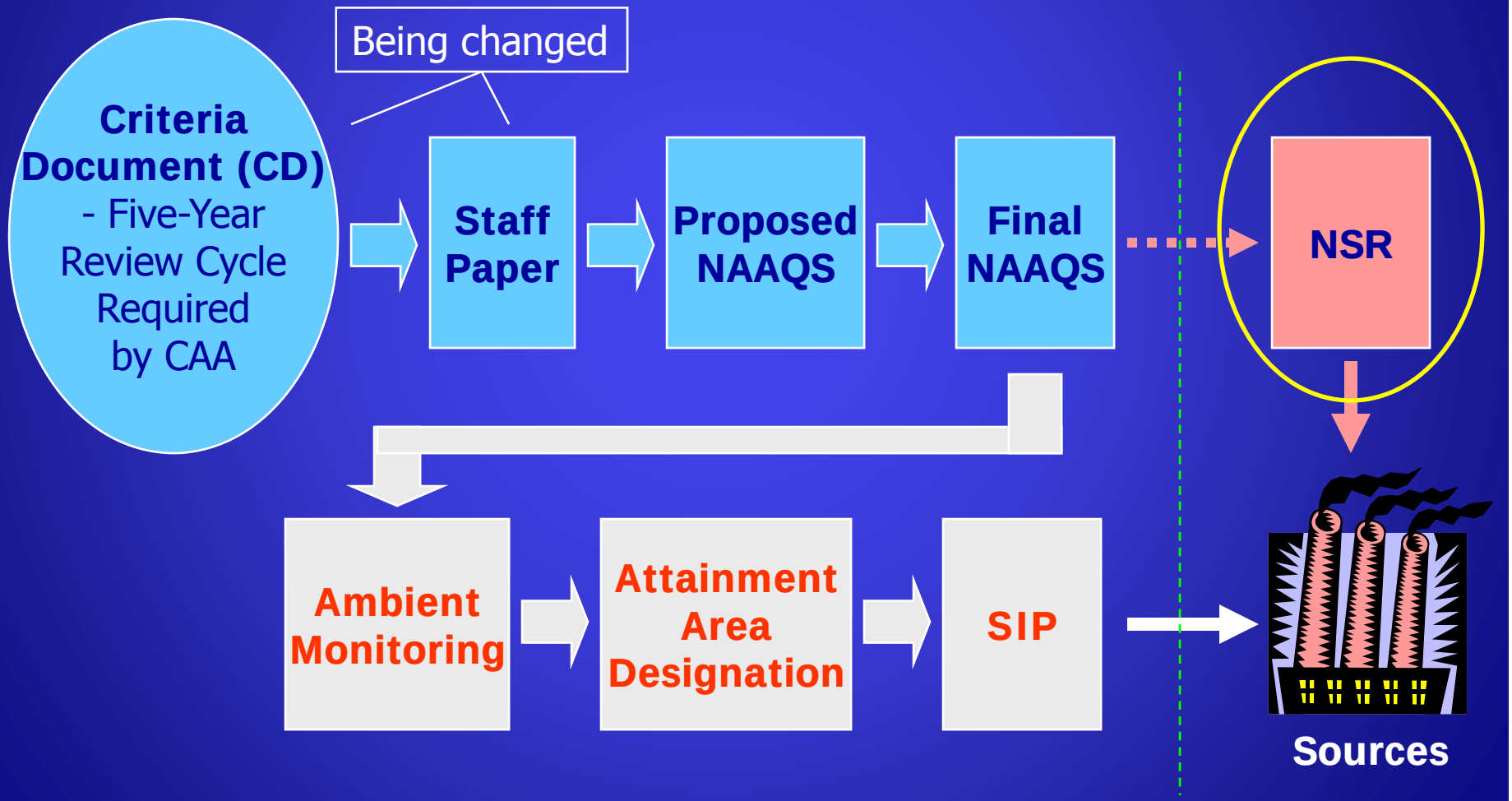
PM NAAQS Timeline (Cont'd)



PM NAAQS Timeline (Cont'd)



NAAQS and Its Implementation



New Source Review (NSR) Program

- NSR is a pre-construction permitting program
- A key element of NSR is that a new major source/modification will not cause an exceedance of NAAQS (demonstrated through modeling). Therefore changes in NAAQS requires changes in NSR
- How have we been handling $PM_{2.5}$ in NSR since 1997 $PM_{2.5}$ NAAQS? – Using PM_{10} as a surrogate.

$PM_{2.5}$ NSR Implementation Rule

- Promulgated on May 16, 2008
- Effective date: July 15, 2008
- Transition period ends on Jan. 1, 2011
- When this and $PM_{2.5}$ PSD Increment rule take effect, PM_{10} will no longer be used as surrogate of $PM_{2.5}$. However, PM_{10} std. is still in place and will co-exist with $PM_{2.5}$ std.

Highlights of 5/16/2008 Rule

- Lower threshold to trigger PSD
- Condensable counts
- Addition of precursors
- Interpollutant Offsetting (NA NSR)
- $PM_{2.5}$ also applies to minor NSR

Comparison - Component

PM_{10}	$PM_{2.5}$
Filterable components only, some states include condensables	Additional components: Condensables: In transition, EPA currently assessing test method modifications Precursors: SO_2 - always regulated NO_X – states can opt out, VOC and NH_3 – states can opt in

Comparison – Applicability Thresholds

PM_{10}	$PM_{2.5}$
Major source: – PSD: 100/250 tpy – NA NSR: 100 tpy Significant emission rate: 15 tpy	Direct (filterable+condensable): – Major source: PSD: 100/250 tpy NA NSR: 100 tpy – Significant emission rate: 10 tpy Precursors: – Major source: same as direct – Significant emission rate: 40 tpy (except NH_3, which is decided by SIP)

Comparison - Measurement

PM_{10}	$PM_{2.5}$
Established Measurement for filterable PM (Method 5)	Filterable: Method 201 or 201A Condensables: Method 202 EPA is further assessing methods, including methods for precursors (VOC and NH_3)

Comparison - Modeling

PM_{10}	$PM_{2.5}$
NAAQS - 150 µg/m^3	NAAQS - 35 µg/m^3
Increments - 8 or 30 µg/m^3	Increments - Proposed
PSD SER -15 tpy	PSD SER -10 tpy (Direct) and 40 tpy (Each Precursor)
Modeling Significance Level – 5 µg/m^3	Modeling Significance Level – Proposed
Monitoring De Minimis – 10 µg/m^3	Monitoring De Minimis – Proposed

Proposed Increments

Proposed Class II Limits –
Spring 2009 Anticipated Finalization

Annual – 4,4,5 $\mu g/m^3$

24-Hour – 9,9,9 $\mu g/m^3$

The annual PM_{10} standard would be revoked under all proposed options.

Proposed Modeling Significance Levels

Proposed Options –
Spring 2009 Anticipated Finalization

Annual – 1.0, 0.8, 0.3 $\mu g/m^3$

24-Hour – 5.0, 4.0, 1.2 $\mu g/m^3$

Proposed Monitoring De Minimis Levels

Proposed Options –
Spring 2009 Anticipated Finalization

10, 8, 2.3 $\mu g/m^3$

How Will the New PM NAAQS Affect Industries in Louisiana?

Louisiana is in attainment of the 1997 $PM_{2.5}$ NAAQS (and is expecting to be in attainment of the 2006 NAAQS).

Louisiana has submitted a SIP that has been deemed complete and is under review by EPA.

How Will the New PM NAAQS Affect Industries in Louisiana?

States with approved PSD programs should continue to use PM_{10} as a surrogate until revised SIPs are approved.

Sources are not required to account for condensables in $PM_{2.5}$ emission limits in PSD or nonattainment NSR permits until the transition period ends or Jan. 1, 2011.

Challenges Facing NSR Permitting

The rule requires air quality impact analysis in the same way as other PSD pollutants, but does not say how. That raises the following questions:

- How to conduct $PM_{2.5}$ modeling? "Direct only" or "direct plus precursors"?
- If precursors are included, what model should be used?
- When will emission inventory data be available for $PM_{2.5}$ modeling? What about baseline data?

Issues associated with emission quantification, testing, and permit limits

- Problem with stack testing methods
- Emission quantification in general – it is the foundation of air quality management programs and it affects permit limits, modeling, compliance, and emission inventories.