



Representing the Interests of America's Industrial Energy Users since 1978

CIBO Environmental Session Issues Update

CIBO Annual Meeting

October 24, 2008

Charleston, SC

CIBO Environmental Issue Discussion

- **MACT Issues:** Maxine Dewbury
 - Air Toxics Regulatory Overview
 - Boiler MACT
- **Greenhouse Gas Regulation/Legislation:** Rob Kaufmann
 - Legislative Initiatives
 - Legal Challenges
 - State Actions
 - EPA's ANPRM – Issues of CAA regulation GHG
- **NAAQS & CAIR Issues:** Ann McIver & Patty Strabbing
 - CAIR Vacature & Implications for NAAQS Compliance
 - Condensable PM 2.5 Emission Testing & Implications

MACT Issues

- Overview
 - MACT Standards
 - Area Source Standards
 - Legal Issues
- Boiler MACT
 - Future Rulemaking Issues
 - Definition of Waste
 - Information Collection by EPA
 - Timing of New Rules
 - Interim State Actions

Air Toxics Requirements

- MACT Standards (Technology-based)
 - Major Source Categories
 - Area Source Categories
- Residual Risk Standards (Risk-based)
 - To provide ample margin of safety.
 - To be promulgated 8 years after source category standards established.

MACT Issues - Overview

MACT Standards:

- Generally apply to only to sources with over 10 TPY of a single HAP or 25 TPY total HAPs
- Technology Based Standards – limits set to match the best 12% of sources for existing units. New units must match the best existing source.

Area Source Standards:

- Standards apply to sources of HAP emissions below the 10/25 TPY threshold.
- Generally Available Control Technology (GACT) Standards

MACT Requirements

- **Hundreds of MACT Source Categories**
 - EPA had only 10 years to promulgate final standards for each source category (11/2000)
 - If EPA didn't promulgate standards on time, "MACT HAMMER" Triggered.
 - EPA promulgated standards on time (before Part 2 applications)
- **Standards for existing sources:**
 - No less stringent than the best performing 12% of sources.
 - Standards for new sources - more stringent
- **Sources have 3 years to meet new standards**

MACT Requirements

Area Source Standards

70 Area Source Categories Established

Area Source Category Standards complete by 12/2005

- Dry Cleaning, Municipal landfills, POTWs, Halogenated Solvent Cleaners, Medical Waste Incinerators
- Hazardous Waste Incinerators, Other Solid Waste Incineration, Municipal Waste Combustors
- Chromic Acid Anodizing, Commercial Sterilization Facilities, Decorative Chromium Electroplating, Hard Chromium Electroplating, Mercury Cell Chlor-Alkali Plants
- Portland Cement Manufacturing, Secondary Lead Smelting

Area Source Standards Completed in 2006

- Oil and Natural Gas Production, Primary Nonferrous Metal Production, Primary and Secondary Copper Smelting, PVC and Copolymers Production, Paint Stripping Operations

Area Source Standards Completed in 2007

- Stationary IC Engines, Gasoline Distribution Stage I
- Hospital Sterilizers, Carbon Black Production, Wood Preserving, Acrylic Fibers/Modacrylic Fibers Production
- Lead Acid Battery Manufacturing, Chemical Manufacturing: Chromium Compounds, Flexible Polyurethane Foam Fabrication Operations
- Paint Stripping Operations, Auto Body Refinishing, Clay Ceramics Manufacturing, Stainless and Non-stainless Steel Manufacturing, Iron Foundries, Steel Foundries
- Miscellaneous Surface Coating Operations, Pressed and Blown Glass Manufacturing, Secondary Nonferrous Metals

MACT Requirements Area Source Standards

Standards to be complete by Dec. 15, 2008

- Fabricated Metal Products (9 subcategories),
- Plating & Polishing
- Agricultural Chemicals and Pesticides Manufacturing, Asphalt Processing and Asphalt Roofing Manufacturing, Cyclic Crude and Intermediate Production, Ferroalloys Production: Ferromanganese and Silicomanganese
- Industrial Inorganic Chemical Manufacturing, Industrial Organic Chemical Manufacturing, Inorganic Pigment Manufacturing, [Misc. Organic Chemical Manufacturing \(MON\)](#), Pharmaceutical Production, Plastic Materials and Resins Manufacturing, Synthetic Rubber

Standards to be complete by June 15, 2009

- [Industrial Boilers](#), [Institutional/Commercial Boilers](#), Aluminum Foundries, Brick and Structural Clay Products, Chemical Preparation, Copper Foundries, Nonferrous Foundries, Paint and Allied Products, Prepared Feeds Materials, Sewage Sludge Incineration

Legal Issues - Key Court Decisions

Sierra Club v. EPA - The Brick MACT decision

Sierra Club v. EPA, 03/13/07 (“Brick and Clay Ceramics”)

- Maximum Achievable Control Technology (MACT)
 - MACT floors = what is achieved in practice by the best performers, NOT on what is achievable by all sources
 - [Note: the “floor” is the minimum level of stringency that EPA can base the standard on.]
- Floors must reflect all relevant factors affecting emissions (e.g., cleaner feedstock's, other inputs) and may not be based only on technology
- EPA must set emission standards for each listed hazardous air pollutant (HAP) and cannot avoid setting standards for HAP that are not controlled with technology
- Work practice standards must be based on the lack of feasibility to measure such emissions, not lack of information about emissions

Implications of Recent Court Decisions

- Many approaches previously used for setting MACT standards are no longer allowed.
 - Standards may not be achievable for all sources
 - limits based on best performance vs. technology
- Issues to consider in setting the MACT floor:
 - How to determine the “average emissions limitation” achieved by the best performers (the average of the top 12 percent)?
 - How can we subcategorize?
 - How do we justify work practice standards?
 - How much data do we need?

Legal Issues - Key Court Decisions

CISWI Definitions/Boilers MACT

NRDC v. EPA, 06/08/07 (“Boilers/CISWI”)

- Court vacated both the Commercial and Industrial Solid Waste Incineration (CISWI) Definitions rule and the Boiler MACT rule.
 - CAA language in Section 129(g)(1) is unambiguous; solid waste incineration unit = any facility which combusts any solid waste
 - EPA may not depart from definition based on the purpose for which waste is burned
 - In light of the Court’s ruling on the CISWI Definitions Rule, the Court vacated and remanded the Boiler MACT rule.
 - The court did not rule on the legality of the HBCA
- Mandate issued 7/30/07
- Compliance with the rule was required 9/13/07

Implications of Recent Court Decisions

- What is a waste and what is a fuel?
 - If fuels become “wastes”, boilers become incinerators!
 - Facilities may choose to landfill vs. become incinerators due to cost of meeting tough HAP emissions limits
 - Impacts use of alternative fuels
 - Impacts on Energy Policy/Independence

Status of Boiler MACT Rule Development

Rule Development for Boiler MACT and GACT standards

- Definition of Waste/Fuel
 - ANPR out 10/08?
 - Need definition prior to source testing in Phase 2 of the ICR?
- Information Collection Request (ICR) under section 114
 - Phase 1 – Sent out 8/15. Due 10/6/08 (extensions granted)
 - EPA to analyze data gaps
 - EPA to propose “representative facilities” for Source Testing.
 - Target additional data - units burning waste.
 - Little HAP data on gas-fired units, liquid-fired units.
 - Stakeholders input on cost & feasibility of units to be tested.
 - Four months to complete and submit source testing data.
 - Three outlet test runs (with fuel analysis)
 - Testing complex and costly.
 - Test for HCl, Hg, As, Be, Ce, Cr, Pb, Mn, Ni, Se, PM, SO_x, NO_x and CO.
 - Other pollutants: HFI, Cl, organic HAP (acetaldehyde, benzene, formaldehyde, toluene, zylenes), PAH and Dioxins/Furans
- Proposed Rules for MACT and GACT?
- Final Rule – Tied to Area Source deadlines – Now due 11/20/09

In The Interim...

Does 112(j) Apply to Vacated Standards?

- Case-by-case MACT for existing sources
- EPA has interpreted CAA section 112(j) as applying in cases of complete vacatur
 - Cement Kiln Recycling Coalition, et al. v. EPA 255 F.3d. 855 (D.C. Cir. 2001) (“Joint Motion of All Parties for Stay of Issuance of Mandate”)
- Industry opinion different.
- Information collection request (ICR) pursuant to Paperwork Reduction Act must be renewed prior to implementation of CAA section 112(j) regulations
 - ICR published in FR 4/17/08
 - 30-day comment period ended 5/19/08
 - 60-day concurrent OMB review ended 6/19/08
 - Assuming OMB approves, in place for 3 years
 - Authority to collect reports/records/permit applications for sources subject to section 112(j)
- NAACA Position on HAMMER & Model Rule

In the Interim... What about New Sources? Applicability of 112(g)

- Case-by-Case MACT for new and reconstructed sources
 - Under section 112(g), no person may begin actual construction or reconstruction of a major source of HAP unless the permitting authority determines on a case-by-case basis that new source MACT requirements will be met.
- Case-by-case decisions on new sources
 - Permit & construction delays
 - Projects likely to agree to more stringent case-by-case limits to proceed with construction

Where will this lead us?

Fuel vs. Waste Issue:

- Reduced use of alternate fuels
 - Increased waste generation
- Increased demand for conventional fuels
 - Hurts US Energy Independence
 - Increased US energy costs
- Sub-optimal use of resources
 - Decreased US production efficiency
 - Hurts US competitiveness

Bad for business, energy policy, environment and the economy

Where will this lead us?

Vacature of Boiler MACT:

Lack of certainty future requirements

- **Potential Interim Requirements**
 - State and industry effort to establish short-term requirements
 - Throw-away capital - interim standards differ from final standards
- **Significant work to establish final standards**
 - ICR data collection
 - Definition of waste vs. fuel
 - ICR Part II - source testing for HAPs
 - Parsing the data to establish floor, proposing & finalizing standards
- **Delay in meeting environmental objectives**
 - Compliance was 9/07. Will be 2012 (3 yrs from 09)
- **Inability to plan best environmental solutions for NAAQS challenges and HAPs**

Uncertainty: Bad for the economy & environment.

Climate Legislation & Regulation: Why CIBO Members Should Care

CIBO Annual Meeting

Charleston, South Carolina

October 24, 2008

Presentation Overview

- Federal Legislative Action
- Presidential Candidate Views
- Lawsuits & Court Actions
- Regional Activities
- Federal Regulatory Action

Lieberman/Warner Bill

- Comprehensive cap & trade program covering virtually all sectors
- 70% reduction by 2050, straight-line glidepath
- Moves from mostly free allocations to 100% auction over time
- Revenues used for R & D, ratepayer assistance, deficit reduction
- Attempts to address leakage
- Recognizes “energy-intensive” manufacturers

Dingell/Boucher “Discussion Draft”

- Comprehensive cap & trade bill covering ~88% of US GHG emissions
- Step-based glidepath, gentle at first: 6% below 2005 levels by 2020, 44% by 2030, 80% by 2050
- 4 options for allocations, but all have auctioning
- Federal preemption
- Performance standards for new industrial sources not covered by program; otherwise prohibition on regulating GHGs under the CAA

Other Climate Legislation

- Rep. Marsha Blackburn's (R-TN) HR 6666, would amend the CAA to provide that GHGs are not subject to the Act
- Sen. Amy Klobuchar (D-MN) GHG Registry bill, S. 1387
 - Covers sources that emit >5000 tons of CO₂e/yr
 - Requires quarterly and annual reports
 - Covers direct and indirect emissions
 - Does not require 3rd party verification
 - Is ambiguous regarding source-level vs. facility reporting
 - Requires use of CEMs if technically feasible

Presidential Candidate Views on Climate Issues

- Obama

- Comprehensive cap & trade program
- 80% reduction in GHGs by 2050
- 100% auctions from the start
- National RPS (25% by 2025)
- Increase RFS mandate to 60 billion gallons by 2030

- McCain

- Comprehensive cap & trade program
- 60 to 65% GHG reduction by 2050
- Free allocations to start
- Safety valve to limit costs & ensure technology availability
- Opposes national RPS and RFS

CIBO Concerns with Climate Legislation

- High costs associated with auctions, inability to pass on costs to customers
- Stringent short-term reduction requirements, unavailability of removal technology
- Possibility that NSR/PSD will be triggered by energy efficiency and fuel-switching projects
- High allowance costs w/o safety valve
- National RPS, expanded RFS (for biomass users)
- Preemption
- CAA regulation of GHGs

Climate Legislation Cost Impacts

- Increased fossil fuel costs
- Increased biomass costs
- Increased transportation costs
- Increased purchased electricity costs
- Increased costs for chemicals, building materials (steel, cement), etc.
- Leakage overseas
- Reporting/registry costs

Regional Climate Initiatives

- Regional Greenhouse Gas Initiative
 - NE, Mid-Atlantic state utility only program, relatively modest reduction requirements
 - Could affect cogenerators
 - First auction held Sept. 25, \$3.07 allowance price
- Western Climate Initiative
 - Whole economy cap & trade program envisioned; design principles available
 - Individual WCI states will set program details
 - Also envisions RPS, low-carbon fuel standard, GHG reporting/registry
- Midwest Governors Climate Initiative
 - Whole economy cap & trade program envisioned, details under development
 - Like WCI, RPS, low-carbon fuel standards envisioned, also a focus on use of biomass

Concerns with Regional Initiatives

- Potentially additive to a national program: dual allowance programs, dual reporting/registry requirements
- Even with preemption, need for harmonization
- Regional programs may go beyond any federal program, so additional costs likely

Lawsuits & Court Decisions

- Massachusetts vs. EPA
- Challenges to coal-fired utility and refinery permits
- ESA challenges
- NSPS challenges: boilers, refineries, cement
- EAB decision expected soon
- CIBO impact: bad precedents, increased costs; NSR/PSD triggered?

Federal Regulatory Action: GHG Reporting Rule

- Issues
 - Size cutoff
 - Reporting frequency
 - Source, facility, or company-level reporting
 - Measurement protocols
 - Verification methods and certification
 - Exemptions and treatment of fugitives
 - Enforcement
- CIBO impacts & actions: TBD

Federal Regulatory Actions: Regulating GHGs under the CAA ANPR

- **Many problems associated with regulating GHGs under the CAA:**
 - **Emission control thresholds (particularly NSR/PSD, S. 112, Title V)**
 - **GHGs have different temporal & spatial scope: local/regional vs. global**
 - **Locals, states, even RPOs not best-suited to implement measures**
 - **SIPs, regional models may not be useful tools**
 - **Controls unlikely to have significant impact on reductions in short-term**
 - **Once GHGs become “regulated pollutants”, NSR/PSD triggered**

Endangerment Findings

- Under the CAA, air pollutants typically become regulated when:
 - Pollutant at issue “may reasonably be anticipated to endanger public health or welfare”
 - Emissions from [x sources] “cause or contribute” to that air pollution
- Similar endangerment language across the CAA (S. 202(a), 108, 111, 112, etc)
- Endangerment finding triggers EPA action
- Once an air pollutant becomes regulated, PSD is triggered, though EPA is looking for ways to wall this off

Regulation of Stationary Source GHGs: Section 111 (NSPS) Overview

- Would require an endangerment finding
- If GHGs regulated as NAAQS, NSPS only for new/modified sources (111(b)); if no NAAQS or 112 standards, NSPS for new/modified and existing sources (111(d)); latter administered by states
- Cost considerations allowed
- Discretion re: types and sizes of sources regulated
- “Best demonstrated technology”; flexible
- Typically 3-year compliance schedule, though adjustable on a site-specific basis

Section 111 (NSPS) Issues

- Flexible when compared to other CAA sections
- No requirement to regulate any source categories
- Prioritization of sources possible, with phased-in compliance schedules
- Size cutoffs allowable; big emitters only?
- Cost considerations good for distinguishing new/modified vs. existing sources
- Potential for emission trading
- Potential for declining performance standards
- Technology waiver available
- Would trigger NSR/PSD; NSPS limits would be BACT floor

CIBO GHG NSPS Issues

- Benchmarking
 - How to address source diversity
 - How to differentiate industrial & utility boilers
- Setting appropriate metrics for standards
- Cost considerations (capital, O & M, IRR)
- Should cogeneration receive special consideration
- Could NSPS be used for allowance allocations under cap & trade to provide equity?

Regulation of Stationary Source GHGs: NSR/PSD Overview

- Applies if there is a NAAQS: BACT for attainment areas, LAER for n/a areas, also increments, modeling, offsets, etc.
- Some substantive requirements apply even w/o a NAAQS: BACT
- NSPS is BACT floor
- 250 ton/100 ton major source threshold
- Significance levels initially zero, then currently up to 100 tons for criteria pollutants
- Many smaller sources would be pulled into the program (EPA: 200 to 300 PSD permits/yr to 2000 to 3000 per year, at least)

GHG NSR/PSD Issues

- Could major source thresholds be changed administratively? Emission scaling?
- Could significance levels be made high enough to limit impacts? *De minimis* concept?
- Could a PSD program be phased in?
- Would grandfathered sources keep operating to avoid triggering PSD?
- Are there credible PSD avoidance scenarios? PTE limits? Could EPA find a way to wall off NSR/PSD requirements?

GHG NSR/PSD Issues (cont.)

- Permitting burden, both for smaller sources and permit authorities
- What is regulated pollutant?
- AQRV and FLM issues
- What is BACT?
 - General permits
 - Presumptive BACT
- What is LAER?

The Clean Air Interstate Rule

Who “CAIR”s?

Why should we “CAIR”?

Issues & Impacts

- Original purpose and goal of CAIR
- Relationship to other key Clean Air Act programs
- D.C. Circuit Court's CAIR Ruling
- Implications of the Court's decision
 - On Clean Air Act programs
 - EPA actions
 - Individual state actions
- What CIBO members should be on the lookout for...

CAIR: Purpose & Goal

- “Substantial” reductions in SO₂ and NO_x to help 450 counties in the eastern U.S. meet ozone and/or PM_{2.5} NAAQS using “*proven cap-and-trade approach*”
- Improve visibility in southeast national parks
- Reductions in sulfur and nitrogen deposition in surface waters

CAIR and the Clean Air Act

- Implementation of CAIR:
 - States developed rules to implement the requirements of CAIR
 - Allowance allocation mechanisms
 - Energy efficiency / renewable energy incentives
 - Many states subject to CAIR requirements also subject to the NOx SIP Call
 - State CAIR implementation rules superseded the NOx budget trading programs, so those rules were sunset or voided

CAIR and the Clean Air Act

- Implementation of CAIR would achieve reductions in mercury emissions through “co-benefits” realized by installation of scrubbers and SCR
- CAIR annual SO₂ program used existing Title IV (Acid Rain Program) allowances as the currency for program compliance

CAIR and the Clean Air Act

- CAIR formed the basis for *many* ozone and PM_{2.5} attainment plans
- Regional haze program: CAIR = BART for affected utility units
- CAIR also key to meeting visibility glide slope demonstrations for many areas

CAIR and the D.C. Circuit

- “CAIR Rule Thrown to the Wind”
- “CAIR Rule Vacated to the Dismay of EPA”
- “D.C. Circuit Vacates Clean Air Interstate Rule, Creating Uncertainty for Air Regulatory Programs”
- “District of Columbia Circuit Strikes Down U.S. EPA’s CAIR Cap-and-Trade Program”

CAIR and the D.C. Circuit

- EPA failed to explain how cap-and-trade ensures emissions are below a level that avoids “significant contribution”
- EPA’s establishment of state SO₂ and NOx budgets was arbitrary and capricious because budgets were not based on significant contribution

CAIR and the D.C. Circuit

- CAIR 2015 deadline failed to ensure that downwind states have sufficient time to achieve attainment
- Nothing in the statute authorized EPA to change Title IV allocations

In Response to Court's Ruling...

- Legislative remedies discussed
- EPA filed Petition for Rehearing with the D.C. Circuit on September 24
 - McLean and Harnett declarations highlight uncertainties created by the Court's ruling (NOx SIP Call, attainment planning, regional haze planning)
- States looking for solutions to meet attainment requirements and SIP obligations for regional haze and visibility

Does the Court's Ruling...

- Impact or affect state rules promulgated to implement CAIR?
- Impact state plans (and company decisions) for units that relied on “CAIR = BART” for regional haze?
- Impact regulatory (i.e., rate recovery) processes for utilities that installed CAIR NO_x Phase I controls to meet a 2009 compliance?

EPA Region V State Actions

- Midwest RPO meeting on October 15
 - IL: many EGUs under consent orders to achieve SO₂ and NO_x reductions
 - MI: envisions “multi-state collaborative process”
 - OH: seeking reductions from utilities
 - IN: I-CAIR....Indiana developing state rule through collaborative process with NE states designed to hold off §126 petitions

NAAQS Attainment Planning

- EPA issued revised ozone NAAQS in May 2008
 - Lowered standard to 0.075 ppb
- Areas seeking to achieve prior standard (0.08 ppb) now thinking about revised standard
- Implementation rule for NSR permitting related to PM_{2.5} NAAQS issued in May 2008
 - Direct emitted and precursor emissions (SO₂, NO_x)
- Regional haze SIPs tied to NAAQS

Be on the Lookout For...

- State rulemaking notices designed to reinstate the NOx SIP Call provisions
- State rulemaking notices relative to RACT and NAAQS attainment planning, regional haze, visibility
- State rulemaking notices for state-only (or multi-state) CAIR-like programs

PM Test Methods - What it means to CIBO Members

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Presentation Overview

- PM Test Method issue
 - PM 2.5 Implementation Rule
 - Proposal
 - Final Rule
- PM Test Method Update
- State Actions
- What should CIBO members do moving forward?

PM 2.5 Test Method Issue

Proposed PM 2.5 Implementation Rule

- Condensables are important
 - Based on current AP-42 data, EPA estimates that 78% of PM 2.5 emissions are condensable.
- Addition of condensables may increase direct PM 2.5 by a factor of 5 or more.
- Condensable PM 2.5 should be included in
 - emission inventories
 - control measures and
 - emission limits
- States must adopt Reference Method 202 and CTM-40 (which uses RM 202) for SIP approval

PM 2.5 Test Method Issue

- PM 2.5 Stack Test Method Problem:
- Measurement of Condensable PM (RM202)
- RM 202 Issues:
- Particulates are created in test method
 - Probe heated to 250 degrees F
 - Gases then condensed in water-filled impingers sitting in ice bath
 - Impinger contents extracted - extract & remaining aqueous fractions dried and weighed
- Artifacts produced by water and air chemistry result in artificially high condensable PM readings.
- Other interferences – SO₂, Ammonia - options in methods are insufficient

PM 2.5 Test Method Issue

In implementation proposal, EPA recognized:

- Addition of condensables may increase direct PM 2.5 by a factor of 5 or more.
- Changes in source test methods will require re-evaluation and revision of emission limits.
- NSPS and other emission limits were set based on filterable solids without condensable emissions. A simple factor cannot be applied to all limits to make this correction.
- Most current emission inventories data excludes condensables – few emission factors include them.

PM 2.5 Test Method Issue

PM 2.5 Test methods under development

- CTM – 40 – uses RM 202 for condensables
 - not yet an approved test method
 - practical limitations restrict application
- CTM – 39 – Air Dilution Method
 - under development
 - impractical size
 - research tool only
- ASTM D22.03-W1752 Draft - Air Dilution Method
 - under development
 - not commercially available

PM 2.5 Test Method Issue

Final PM 2.5 Implementation Rule (FR 20586, 20651-59)

- Comment: EPA should allow States to base their initial 2008 SIPs on NO_x, SO₂ and filterable PM or PM₁₀ (as a surrogate for filterable PM 2.5). During this transition period a source should be able to continue using Method 5, Method 17 or whatever method was used to set the underlying limit contained in the source's permit. It is unrealistic to develop SIP revisions addressing condensable emissions by 4/08.
- Response: EPA agrees a transition period should be allowed to provide time to resolve and adopt appropriate testing procedures for condensable PM emissions, to collect total (filterable and condensable) PM 2.5 emissions data that are more representative of the sources in their areas and develop effective regulations for control of direct PM 2.5 including condensable PM.

PM 2.5 Test Method Issue – Final

Transition Period

- EPA has decided to provide a transition period for developing emissions limits and regulations for condensable PM 2.5
- EPA will not require that emission limits included in the 2008 submittals account for the condensable fraction of direct PM 2.5 and will not require that limits for total direct PM2.5 including condensable PM be established.
- The period of transition for establishing limits for condensable direct PM2.5 will end January 1, 2011.

Emission Limits:

- “When a source implements either of these test methods addressing condensable emissions the State will likely need to revise the source’s emission limit to account for those emissions that were previously unregulated.”(FR 20632)

PM 2.5 Test Method Issue

Method 202:

- By 12/07 EPA and others will complete work to characterize artifact formation and other uncertainties related to RM 202.
- Result - identification of possible test modifications to minimize uncertainties.
- By 12/08 EPA will propose changes to Method 202 to measure condensable PM 2.5

CTM 039:

- EPA believes a dilution method will eliminate artifact formation and provide the most accurate quantification of direct PM 2.5.
- EPA will perform additional validation of CTM-39 to characterize precision.
- EPA plans to continue participation in the ASTM D22 committee to develop and publish a dilution sampling method and to encourage approval of this consensus method.

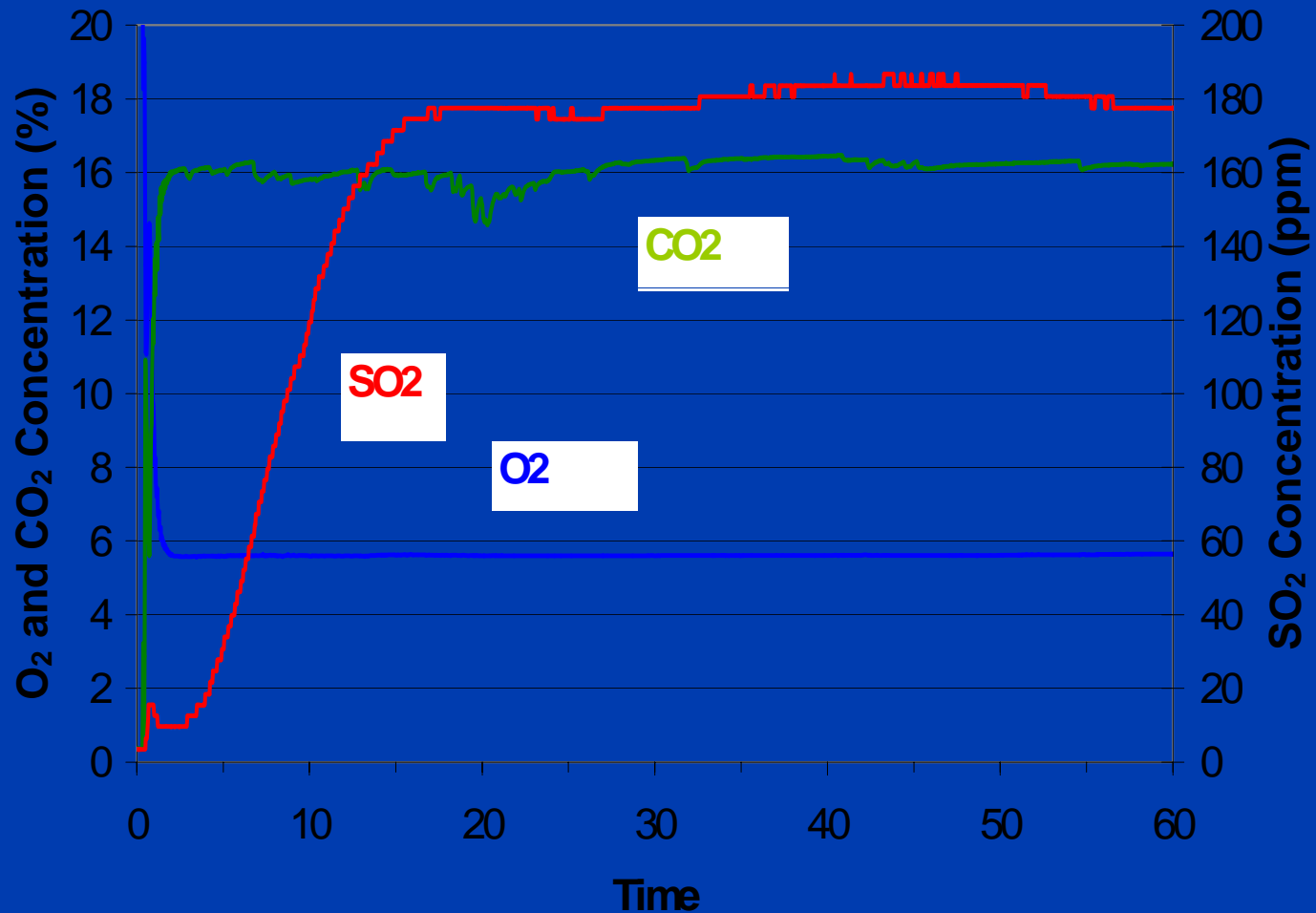
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Condensable Emissions Test Improvements

Condensable Particulate Matter ARTIFACTS

- Compounds in the exhaust gas react to create artifacts under RM 202 sampling conditions, which contribute to a positive bias.
- Example: Combustion sources may contain a significant amount of reactive sulfur under these conditions
 - Oxidation of SO_2 to SO_3
 - NH_4HSO_4 by-product

Immediate absorption of SO₂ in water impingers (RM202)*



*John Richards, AWMA

Condensible Particulate Emissions (CPM)

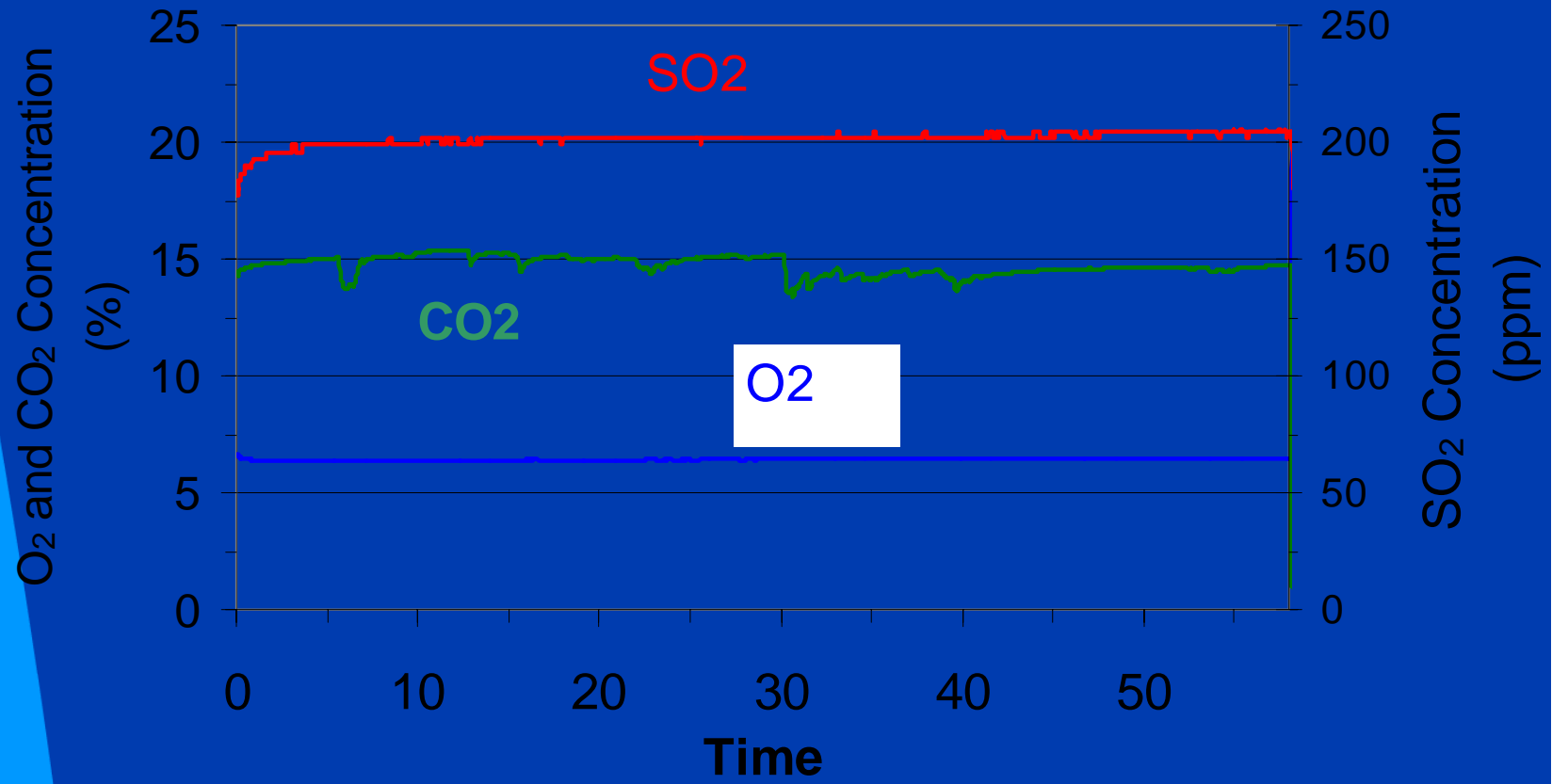
- New Particulate Sampling Method Introduced*
 - Condenser used to cool gases, eliminates water impingers (responsible for artifact formations)
 - Significantly reduces some artifact formations by over 90%
 - Method Hardware easily adaptable to current hardware (cost effective)

* John Richards, AWMA Conference, 11/05



Condenser Method

New Condensable PM Test Method Eliminate water, eliminate interference*



*John Richards, AWMA

New CPM Method Status

- New CPM Method is defined as OTM28. OTM28 is currently available on EPA website and states are encouraged to use it now.
 - <http://www.epa.gov/ttn/emc/prelim/otm28.pdf>
- OTM28 is currently under EPA Internal Review.
- The latest “intel” is that EPA expects it to be published in the Federal Register by December, 2008.

Condensable PM and Implementation

What are the States doing?

- PM_{2.5} NSR rule (Effective July 15, 2008) established:
 - General Provisions for NSR (PSD/NNSR)
 - PSD Requirements (PM significance = 10 tpy)
 - Enforcement policy - EPA will not revisit prior applicability determinations for condensables
- EPA established a transition period
 - Transition period will expire January 1, 2011
 - Or earlier if new method adopted
- EPA will not require including condensables for PM_{2.5} or PM₁₀ during the transition period
 - Some States may elect to require condensables now -
NEED TO EDUCATE THE STATES!

Condensable PM and Implementation – States differ in their approach

- Indiana
 - Requiring condensables for “Information Only”
 - Failing a stack test will not result in enforcement
 - Must test again when new method approved
- Ohio
 - Will not require condensable portion unless part of underlying existing permit limit
 - Otherwise will request for “Information Only”
 - Will not be required to determine permit applicability unless already available

Condensable PM and Implementation – States differ in their approach

- Michigan
 - Will require testing for condensables during transition period
 - Any approved or alternate method may be used (e.g. , method 202 or OTM 28)
 - Test failure using method 202 will not be overlooked
 - It will be up to inspector if NOV is issued
 - Will be required to determine permit applicability
- Check the policy of your local Agency

What Should CIBO Members Do Moving Forward?

- Utilize the new dry impinger method for condensables
 - You may need to educate the state first
 - Should be for “informational” purposes only
- It’s important that credible condensable PM data become part of the state inventories so that the next SIP submittals for PM are based on “real” data (due in 2011)
- Stay tuned for when EPA develops a dilution method which will be the ultimate solution for measuring condensables!

Questions?

Thank you!

