

**CIBO Environmental Committee
Meeting
Boiler MACT & Related Rules Status**

March 5, 2014

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Discussion topics

- UPL approach
- Startup/Shutdown issues
 - Potential approaches
- CO Work Practice vs emission limits
 - Potential Litigation inclusion vs urge EPA to include in reconsideration of minimum CO ppm limit issue

UPL Issue

- SSI court ruling on 99% UPL concerns EPA/OGC
- OGC asking all MACT project managers to characterize their data sets
 - Concern that 99% UPL is not a good statistic for small data sets
 - Especially where adjusted new source limit down to existing source limit
 - Delaying EPA work on several rules
 - This issue is not addressed in the current draft BMACT rule packages

EPA Intended Action on BMACT Rules

- Intended to file last Friday, 2/28/14
- EPA is proposing a **FULL remand** (Area Source, Major Source, and CISWI) for any new AND existing sources that were established on the basis of 9 data points or fewer
- EPA is proposing a **60 day remand** (Major Source and CISWI only) to explain the use of UPL for the remaining numeric standards (anything established on the basis of greater than 9 data points)
- EPA will file a separate motion to **suspend briefing schedule** (not for NHSM) pending resolution of the remand
- If granted, EPA proposes revisions to the start dates of the briefing schedule as follows:
 - Area: 30 days after resolution of remand
 - Major: 90 days after resolution of remand motions
 - CISWI: 120 days after resolution of remand motions

EPA Filing for Area Source Rule- JJJJJ

- **FULL remand for new and existing Hg and CO MACT standards**
 - All are based on 9 or fewer data points
- GACT standards are not impacted

EPA Filing for Boiler MACT- DDDDD

Full Remand of the Following

New or Existing?	Subcategory	Pollutant
Existing	Fluidized bed w/ integrated heat exchanger burning coal/solid fuel	CO (but not alt. CEMS standard)
Existing	Stokers/sloped grate/others burning kiln-dried biomass	CO, Filterable PM and TSM
Existing	Suspension burners burning biomass/bio- based solids	Filterable PM and TSM
Existing	Units burning liquid fuel that are non-continental units	TSM
Existing	Units burning gas 2	CO, HCl, Mercury, Filterable PM, and TSM

Other Subcategories EPA Missed

- Existing coal fired FBC unit CO limit
 - 6 data points
- Existing heavy liquid CO limit
 - 8 data points

DDDDD- Full Remand of:

New or Existing?	Subcategory	Pollutant
New	Units burning solid fuel	HCl
New	Units burning coal/solid fossil fuel	Filterable PM and TSM
New	Fluidized bed w/ integrated heat exchanger, burning coal/solid fuel	CO (but not alt. CEMS)
New	Stokers/sloped grate/others burning wet biomass fuel	TSM (but not filterable PM)
New	Stokers/sloped grate/others burning kiln-dried biomass	Filterable PM and TSM
New	Fluidized bed burning biomass/bio-based solids	CO (but not alt. CEMS), Filterable PM, and TSM
New	Suspension burners burning biomass/bio-based solids	Filterable PM and TSM
New	Dutch overs/Pile burners burning biomass/bio-based solids	CO (but not alt. CEMS), Filterable PM, and TSM
New	Fuel cell units burning biomass/bio-based solids	Filterable PM and TSM
New	Units burning liquid fuel	HCl and Mercury
New	Units burning heavy liquid fuel	Filterable PM and TSM
New	Units burning light liquid fuel	Filterable PM and TSM
New	Units burning liquid fuel that are non-continental units	Filterable PM and TSM
New	Units burning gas 2	CO, HCl, Mercury, Filterable PM, and TSM

Additional EPA Action- DDDDD

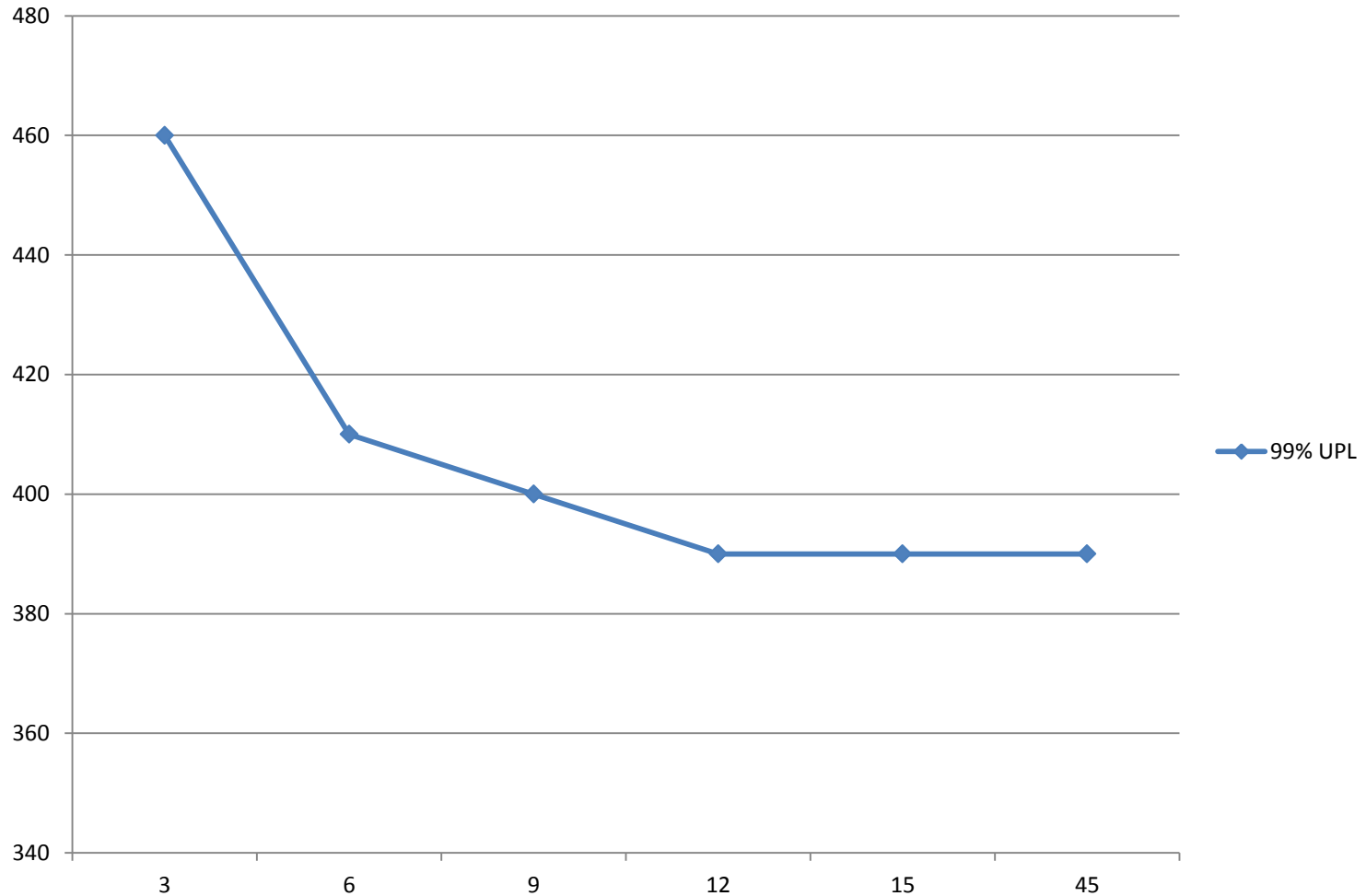
- EPA is proposing the **60 day remand** of the record to explain the analysis of variability used to set numeric MACT standards based on the *NACWA* decision

EPA Action- CISWI- Full Remand of:

New or Existing?	Subcategory	Pollutant
Existing	Energy Recovery Units, Liquid/Gas	All numeric standards
Existing	Energy Recovery Units, Biomass	Dioxins/furans (total mass and TEQ), HCl, Lead, Mercury, Sulfur dioxide
Existing	Energy Recovery Units, Coal	Cadmium, Dioxins/furans (total mass and TEQ), HCl, Lead, Mercury, Filterable PM
Existing	Waste Burning Kilns	CO for preheater/precalciner kilns
New	Energy Recovery Units	All numeric standards EXCEPT for CO, Nitrogen oxides, and sulfur dioxide for coal-fired units
New	Waste Burning Kilns	CO for long kilns and preheater/precalciner kilns, dioxins/furans (total mass and TEQ), HCl, Nitrogen oxides, and Sulfur dioxide
New	Small Remote Incinerators	All numeric standards
New	Incinerators	All numeric standards EXCEPT CO and Nitrogen oxides

Above 9 data points, no change in limit

99% UPL Change With Duplicate Runs Added



Industry Reaction

- Discussion points
 - EPA needs to bolster the record based on NACWA
 - EPA needs to support its MACT limits
 - We likely should support current limits since they could be lowered
 - Would not be increased due to anti-backsliding
 - Uncertainty creates major problems in planning & implementing compliance strategies
 - Ideally obtain collateral extensions of compliance dates

Outlook?

- What else could EPA do to make this rulemaking worse?

Boiler MACT/GACT Issue Discussion

EPA Letter Recon Issues Reminder

- Subpart DDDDD
 - Definitions of startup and shutdown periods and the work practices that apply during such periods;
 - Revised carbon monoxide (CO) limits based on a minimum CO level of 130 ppm; and
 - The use of continuous parameter monitoring systems (CPMS), including the consequences of exceeding the operating parameter.

- Subpart JJJJJ
 - The definitions of startup and shutdown periods;
 - Alternative particulate matter standard for new oil-fired boilers that combust low-sulfur oil;
 - Establishment of a subcategory for limited-use boilers and the applicable standards for that subcategory;
 - Provision that eliminates further performance testing for particulate matter for boilers whose initial compliance test shows that its particulate matter emissions are equal to or less than half of the particulate matter emission limit; and
 - Provision that eliminates fuel sampling at coal-fired boilers that demonstrate compliance with the mercury emission limit by fuel analysis based on the results of the boiler's initial compliance demonstration.

EPA Letter Recon Issues Reminder

- CISWI
 - Definition of “CEMS data during startup and shutdown periods”
 - PM limit for the waste-burning kiln subcategory

Late 2013 OAQPS Discussion

- Reconsideration schedule up in the air
 - Focus on utility GHG rules
 - Had not reviewed draft rule packages with upper management
- EGU GHG NSPS rule was top focus- Fed. Reg. 1/8/14
 - Focus continues on June Existing Source NSPS
- JJJJJ rule may get separated from others due to upcoming compliance date
- Rule packages simply ask for comment on items mentioned in the reconsideration letters & many technical corrections/clarifications based on Q&A documents + OECA/state questions

Late 2013 OAQPS Discussion

- Rule packages do not propose substantive changes to startup/shutdown
- EPA would like to take similar approach to MATS
 - Want a bright line approach like 25% load plus 4 hours
 - CIBO MATS comments and AFPA White Paper advocating site specific alternative approach for those that cannot use
- EPA has said that if a shutdown is not completed, then there is no shutdown event and cannot go back into startup
 - e.g., fuel lost for a short period and recovered
 - Therefore, a malfunction if excess opacity, CO, etc.

Startup Definition Status

- EPA had much data on SO₂, NO_x emissions during startup
 - Supported their percent load/time approach
- However, ENGOs apparently claiming PM emissions during startup are causing great harm
 - EPA has no data on PM emissions during startup
 - But there are cases with ESPs where they must not be energized until temperature and O₂ are proper, so there are PM emissions
 - This appears to have EPA in a standstill, and they need to complete utility approach prior to BMACT

Startup Potential Issues for Resolution

- Draft startup issues and proposed resolutions
- Circulate and get any additional feedback
- Intent to discuss with EPA to ensure they are aware of our concerns

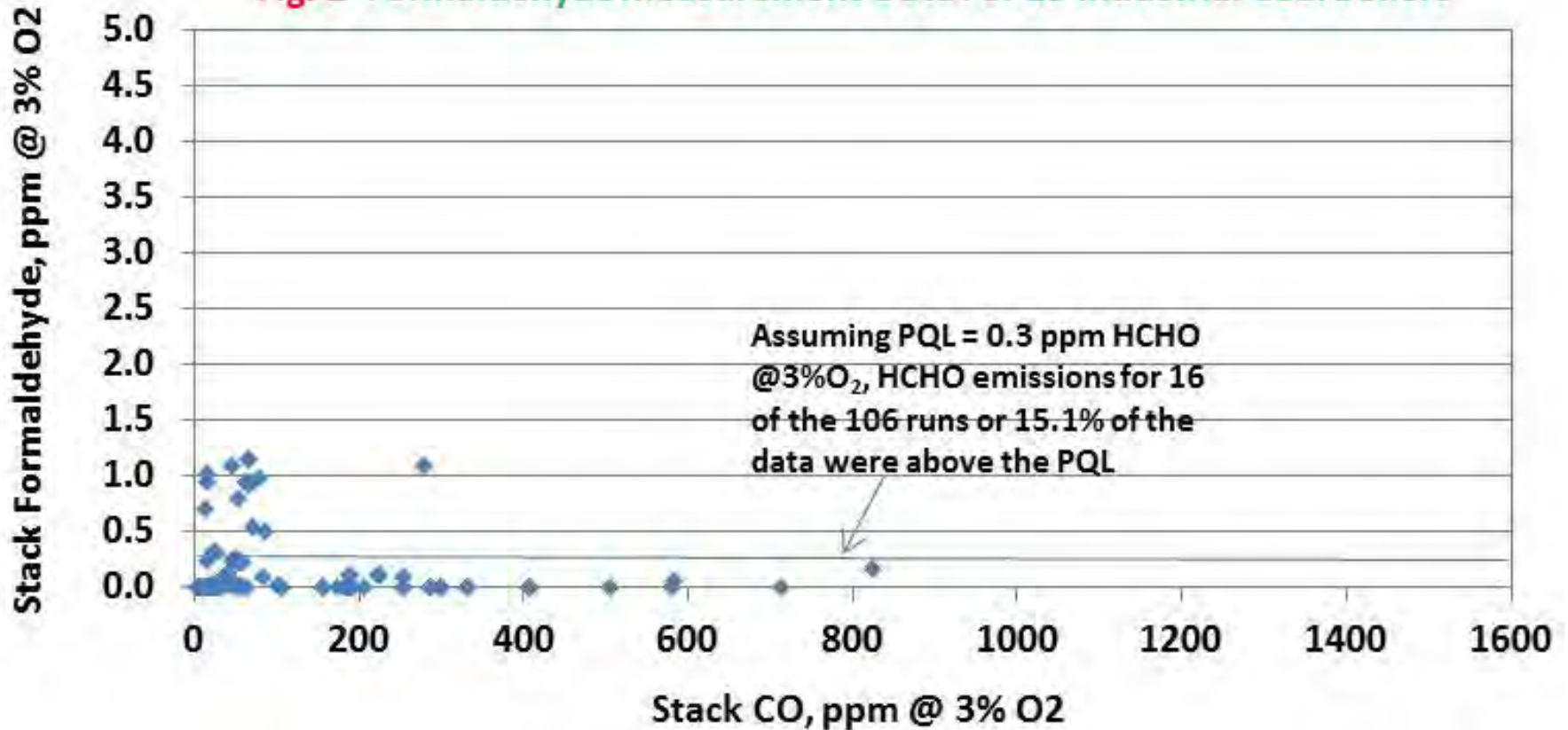
CO Work Practice Issue

CO Issue is Bifurcated

- The issue: EPA data including emissions test data for industrial and utility coal fired boilers shows no correlation of CO with HAP emissions at low CO emission rates; therefore, a work practice is the logical approach to be taken, similar to MATS
- CO lower limits are included in reconsideration
- CO work practice is not included in reconsideration
 - Therefore, would need to raise the issue in initial briefing in order to preserve it
- ENGOs did not brief EGU work practice approach
- Industry concern with implications of raising the issue

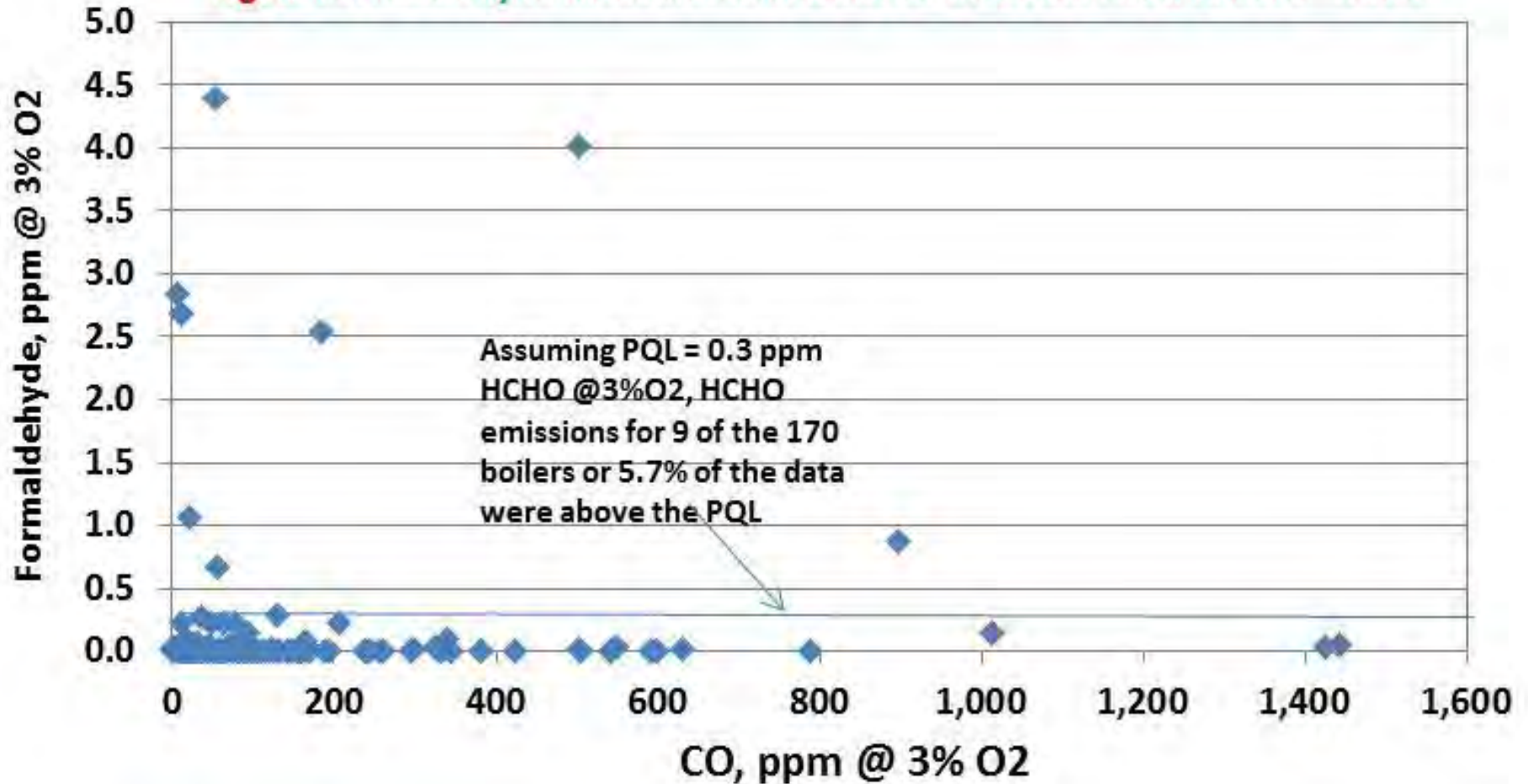
NCASI Evaluation

Fig. 1 Formaldehyde Measurement Data For 28 Industrial Coal Boilers



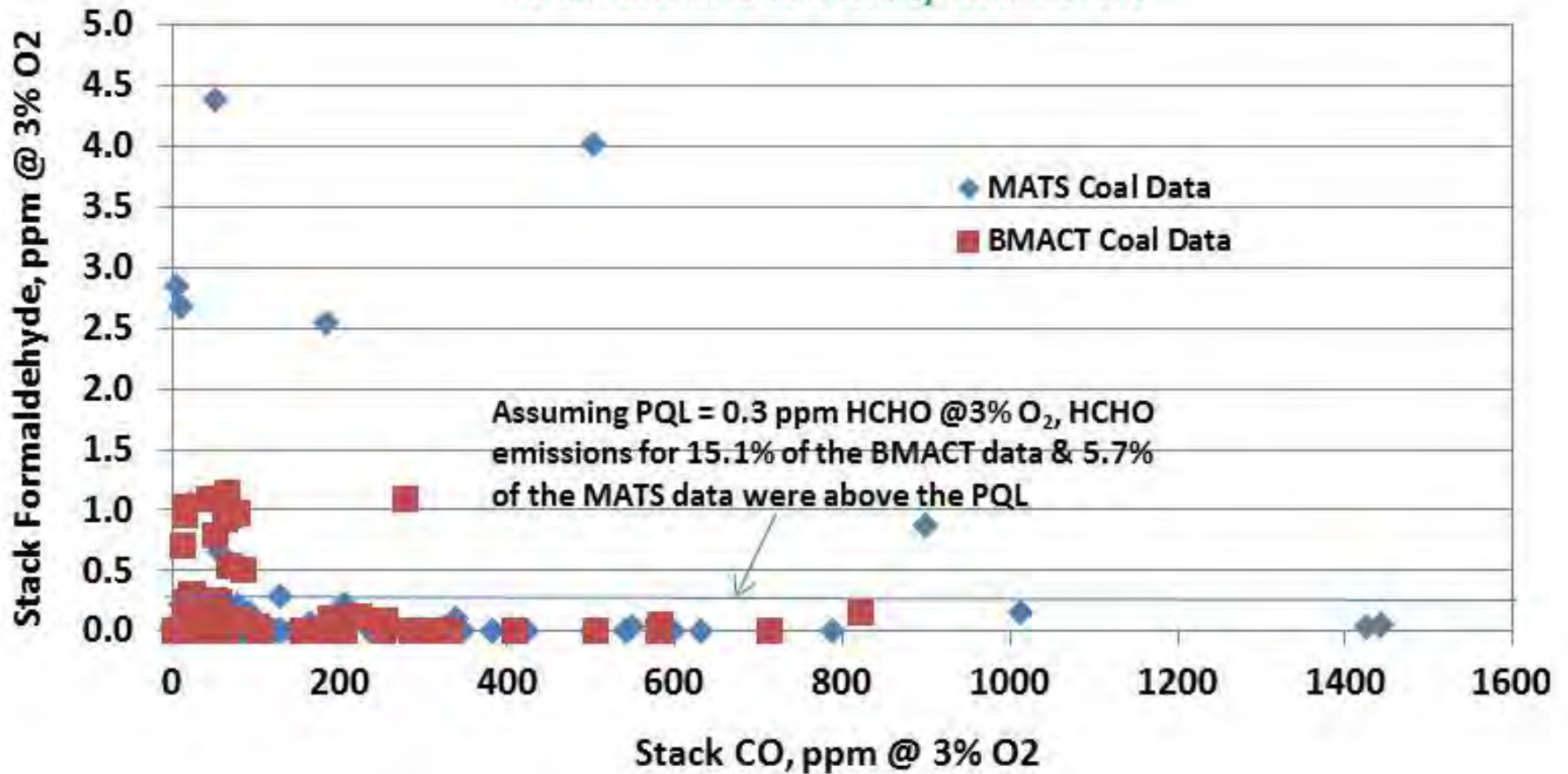
NCASI Evaluation

Fig. 2 Formaldehyde Measurement Data for 170 Coal Fired Boilers - MATS



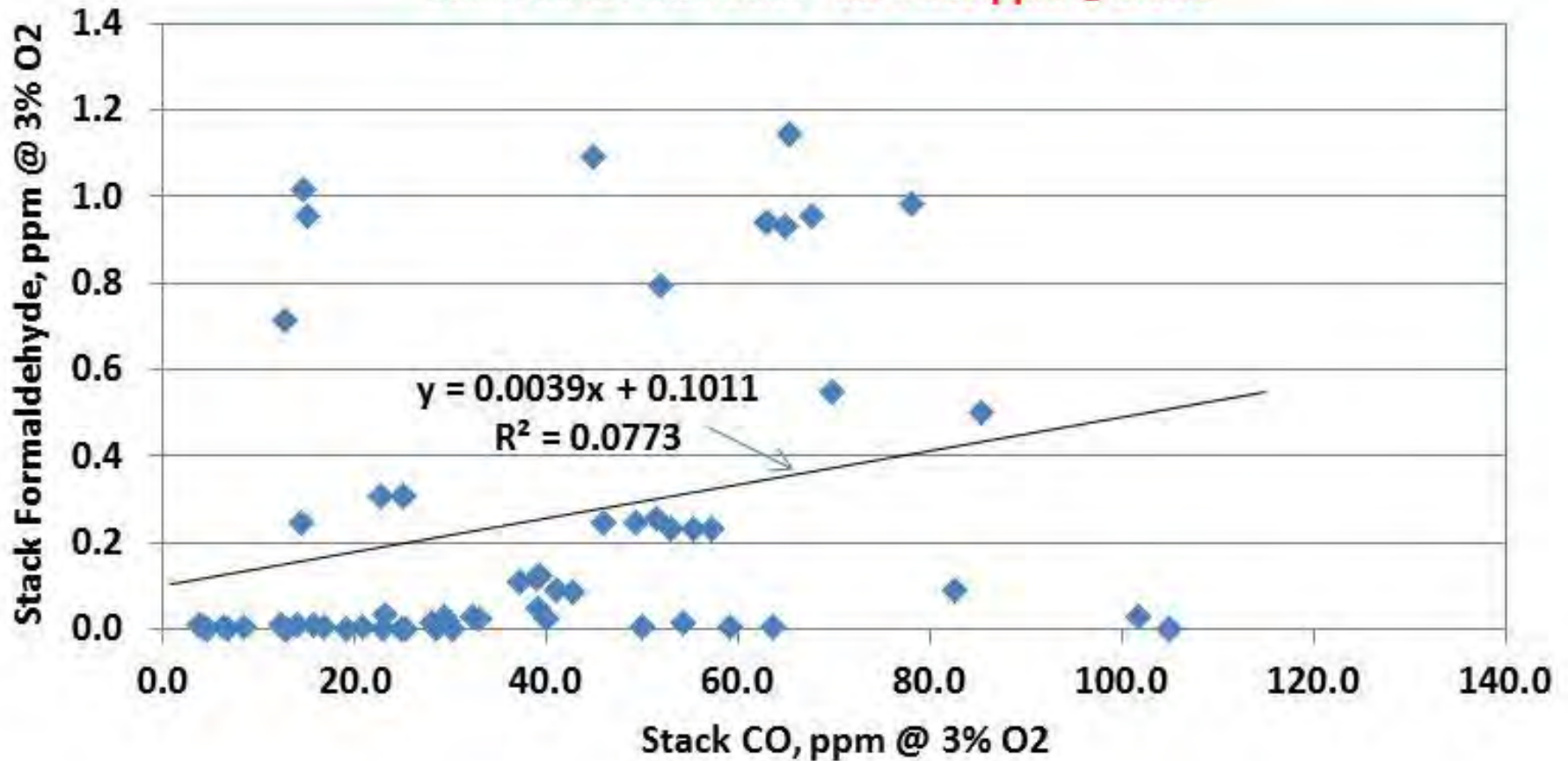
NCASI Evaluation

Fig. 3 HCHO Measurement Data for 28 Industrial & 170 Utility Coal Boilers



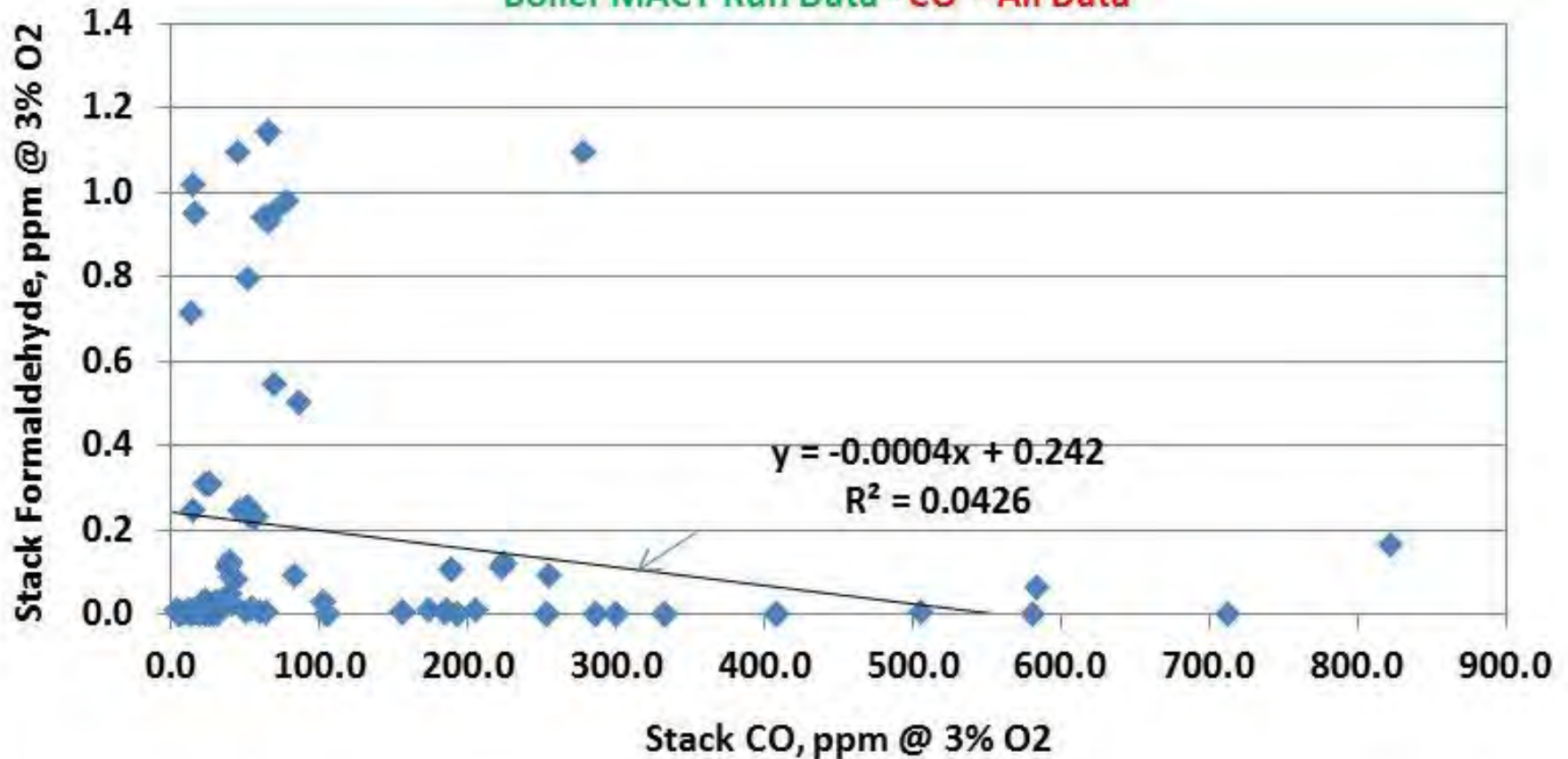
NCASI Evaluation

Fig. 4 CO Vs HCHO For Industrial Coal Boilers -
Boiler MACT Run Data - CO < 130 ppm @3%O2



NCASI Evaluation

Fig. 5 COVs HCHO For Industrial Coal Boilers -
Boiler MACT Run Data - CO - All Data



NCASI Conclusions

- EPA's decision to promulgate a 130 ppm CO standard for coal-fired industrial boilers was based on incomplete analysis of the data available to EPA
- Further analysis suggests that to control the volatile organic HAP emissions, EPA should either:
 - promulgate a work practice standard or
 - set a CO limit of approximately 800 ppm corrected to 3% O₂

Further Points

- There is a very good correlation of CO with HAPs for biomass units
 - Therefore, CO is a good surrogate and emission limits are reasonable
- GCP in the BMACT rule would address organic HAP emissions
 - Tune-ups
 - O2 trim system
 - O2 trim in particular would provide continuous optimization
- Issues with the CO limits include:
 - Inability to ensure continuous compliance under all conditions
 - Costs

Discussion

- A logical approach would be for EPA to include consideration of latest CO/HAP data for coal fired units in its reconsideration process
 - Include evaluation and justification of a work practice for coal fired unit non-dioxin organic HAP emissions similar to dioxin/furan emissions
- This would allow treatment of CO within the reconsideration process without preceding that determination with litigation
- Other thoughts?

Backup Slides

CIBO Comments on MATS Proposed Rule

- CIBO commenting on MATS due to applicability to member facilities and impact on Boiler MACT rule reconsideration
- Support prior commenters' positions; flexibility is critical
- Highest flexibility would be for each source to use unit-specific procedures to determine the end of startup
- Use of a common definition needs to be applicable to a large percent of units to be of value- that means longer time periods
- Combination of load and time is a valid approach to pursue, but detail is critical
- Time needs to be reset if a unit fails during startup to reach the end of startup

CIBO Comments on EGU Startup Assessment

- Unknown representation of all EGUs or the range of EGUs
- Without known representation, it is also unknown to what extent conclusions and proposed numbers are applicable
- Waste coal fired CFBs are particularly under-represented
 - Most were coal fired CFBs
 - Need much longer time to build up bed material and stabilize operation and emissions controls
 - Unit specific approach is needed for those units
- Recognize that EPA had much data from EPA Clean Air Markets on EGUs in order to do even this analysis
 - Similar ICI Boiler/Process Heater MACT unit data is not available

CIBO Comments- MATS

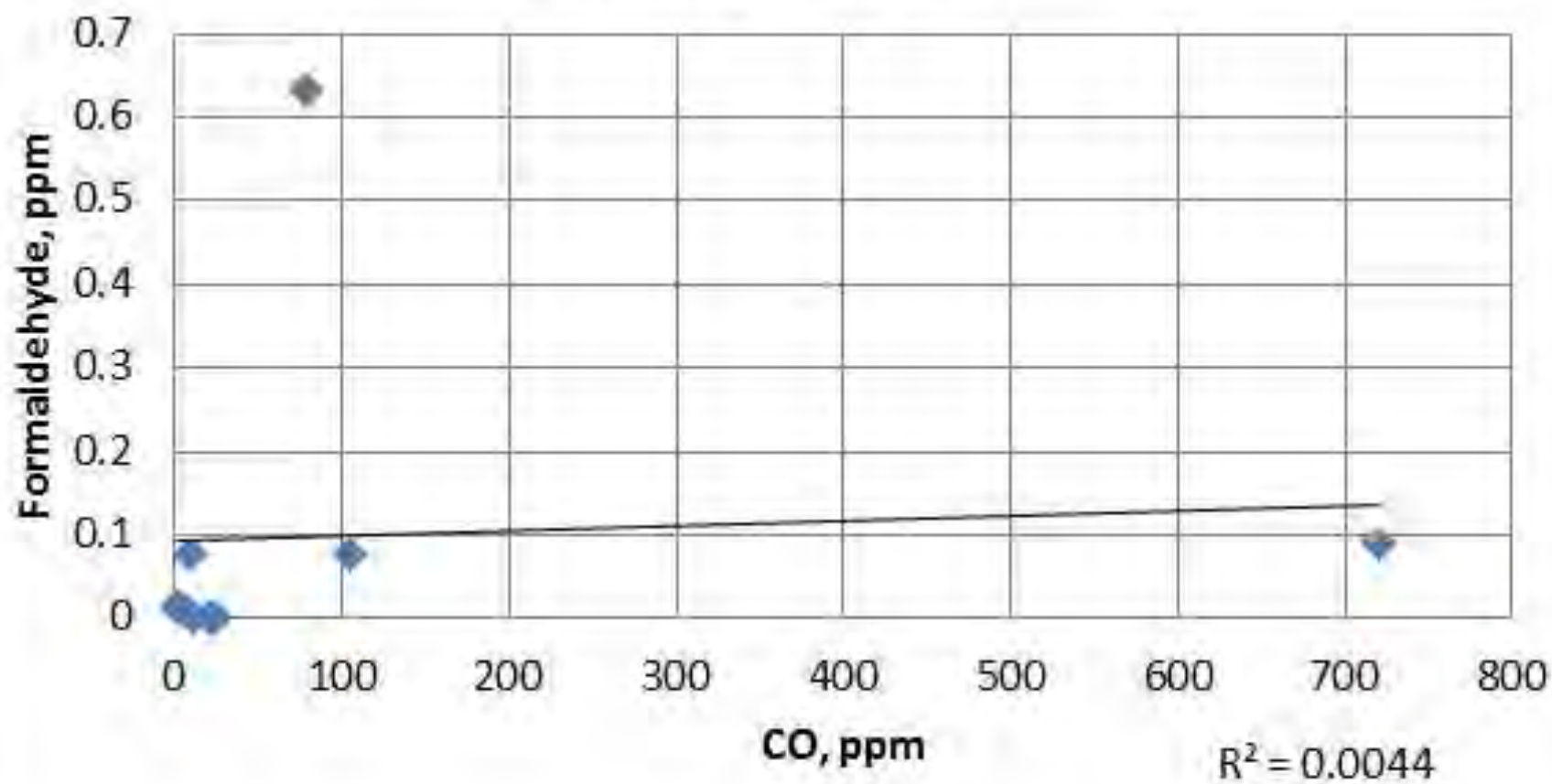
- Undoubtedly all units cannot meet the EPA proposed load/time combinations
- Must also include an alternative approach to defining startup
 - Allow unit-specific procedures to define minimum stable operating load conditions and stable emissions control system operation
 - Procedures can be reviewable and approvable
 - Can also monitor and document startups against those procedures
 - Frame to prevent continual in/out of startup

CIBO Comments- MATS- Other Issues

- Expand clean fuels to include those in Subpart DDDDD
 - Natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas
- Expand clean fuels to include biodiesel and other renewable fuels
- Recognize the inherent need to cofire startup fuel with primary fuel as a transition during the startup process
- Include recognition of need to have appropriate boiler conditions and all APCDs on line during startup
 - Specifically- ESP energization
- Consider use of parametric monitoring or other parameters to indicate normal operation of boiler(s) not in SU/SD mode while 1 or more other boilers are in SU/SD with CEM data not used for compliance during those periods

Additional OHAP vs CO Charts

Heavy Liquid



Light Liquid

