Boiler MACT Database Questions for EPA/ERG
(sent to EPA January 11, 2010; with notes from 1/13 EPA call)

1/14/2010 9am call attendees: Bob Wayland/EPA, Brian Shrager/EPA, Jim Eddinger/EPA, Amanda Singleton/ERG, John Pinkerton/NCASI, Rob Kaufmann/Koch, Amy Marshall/URS, Doug Mc Williams, Mel Keener/CRWI, David Buck/sugar, Kathy Lockhart/sugar, John deRuyter/DuPont, Steve Gosset/Eastman, Steve Woock/Weyerhaeuser, Glenn England/Environ, Bob Bessette/CIBO, Jim Griffin/ACC, Matt Todd/API, Tim Hunt/AFPA, Jeremy/Golder

Original questions in black, EPA responses, either written or verbal, in red. [Some notes also added from subsequent conversation between Amy Marshall/URS and Amanda Singleton/ERG on 1/14/2010.]

1. There are no boiler size or utilization data in the current version of the database. Will that be added back in (NO – not into emission data base), and is EPA considering subcategories based on boiler size? (NO – design only, and only for certain pollutants) Will there be a possibility for a limited use subcategory? (NO –possibility of work practice instead of emission limit for units less than 10 MM BTU, since that's what they're doing for area source MACT)

2. There is no information on boiler or process heater type in the current version of the database. Will that be added back in (YES), and is EPA considering subcategories based on boiler and process heater type (e.g., stoker, fluidized bed, etc? (YES, for certain pollutants) Another 15 test reports being added in with combustor design – available on the website next week (probably Tuesday)

3. Will boilers and process heaters be treated differently? (NO – only design differences)

4. How were the fuel categories determined and how were the different fuels put in the various categories? What does the "other" category mean and how will the different fuels in that category be considered? Fall into subcategory with primary fuel usage. What are the breakpoints between categories like wet/dry biomass, heavy/light liquid, and gas1/gas2? Can we split the coal category into coal type (e.g., bituminous, sub-bituminous)? Not splitting coal into bituminous and subbituminous, not splitting biomass up, not splitting oil up, only splitting gas up. Any coal might be coal-fired; or more than 10 or 25% coal use being considered; biomass boiler would be one firing any biomass and no coal; not looking at subcategories for wet and dry biomass, oil fuel; coal, gas (refinery/NG), other gases (lower Btu gases like coke oven gas), oil, and biomass – 5 fuel subcategories. Start-up fuels – not considered in subcategorization (a biomass boiler that started up on gas or oil would be a biomass boiler). Pet coke majority units in with coal subcategory except if burn some biomass then EPA uncertain where it would fall- came up with OGC/utility MACT. A TDF/biomass boiler

would probably be a biomass boiler, air staff pushing hard for TDF to be fuel, but not so sure on whole tires.

5. For the biomass and coal subcategories, will there be further subcategorization according to (a) boiler type, (YES for organic HAP) (b) fuel type, e.g. bagasse, agricultural residues, wood, wet biomass, dry biomass, etc., (NO – only the 5 fuel subcategories) (c) heat input capacity, (NO) or (d) capacity utilization (NO)? Would further subcategorization be done for all pollutants or just selected pollutants, e.g., gaseous products of incomplete combustion? (YES) Inorganics – just 5 fuel subcategories; organics (e.g., THC or CO) and dioxin – split into the following fuel/boiler design subcategories, coal stoker with and without NOx controls, coal PC with and without NOx controls, coal fluidized bed, biomass fluidized bed, biomass stoker/suspension, biomass dutch oven/fuel cells, oil, gas1, gas 2; based on data received and CO. Leaning to using THC for non dioxin organic HAPs, so if CO not used, the categories for with and without NOx controls might go away. Will probably develop a separate dioxin standard. Since there were some discrepancies in how people answered the question on boiler type, or people answered "other," they have developed a "hierarchy" to categorize the boilers by type – if it's a coal boiler and there are multiple answers and one of them is PC, then the boiler is PC, if it's burning biomass and one of the answers was stoker, then it's a stoker (should become more clear with next week's version of the database, where boiler type will be in there). Total metals standard – total select metals plus PM OR just metals standard for TSM8 or 9 (method 29 gets Hg and other metals); PM filterable (Method 5)

6. Will boilers that burned fuels that got put in the "waste" category be taken out of this database and put in the CISWI database? (YES, if there is a change in the waste definition from our current understanding); They think that they units that are in there now are all boilers, based on the information that they have, and if they thought they were really CISWI then they have already been pulled out; if stop burning waste then become boiler; if unit says stop burning in survey or burning such a small amount then not use in either database for floor development; data not used in MACT floor analysis but kept in Boiler MACT data base for other purposes (impact, etc). TDF – unresolved, Matty Stanislaus talking with Gina McCarthy on definition of solid waste; better than average chance of being a fuel (whole tires separate issue) – dispute more with Matt Hale and Michael Galbraith than Stanislaus.

No extension on the proposal deadline of any of the boiler rules – absolutely not by political level; may lead to negative attitude of court to EPA rules; new ideas to EPA by March 1st (going through internal review to AA); March 15th the latest to OMB; only a proposal so opportunity to explore new approaches that may come up – possible extension of final rule date if new ideas embraced; avoid logical outgrowth issues; welcome to new ideas even if OGC may not be favorable – before proposal or during proposal as well – open to dialogue. They will likely tee up a lot of issues they want

comments on in the proposal, and they will continue to look at the data after the package has gone to OMB.
Mary Johnson lead on area source Boiler MACT; Jim Eddinger still available for consulting after the proposal date, but Brian Shrager will be the Boiler MACT EPA project manager. [Note – Brian had said last week that Toni Jones is the new CISWI project lead, but Amanda says she is about to go out on maternity leave.]

7. When will the CISWI database be available? (This week – shooting for Friday 1/15)

8. How will combination fuel boilers be treated? For example, is a biomass boiler burning more than a certain percentage of coal be a coal boiler (YES), will EPA develop subcategories for combination boilers burning various percentages of a fuel type (NO), or is EPA considering an NSPS like approach of pro-rating emission limits based on fuels actually being burned? (NO) If burning more than % coal, then testing used in MACT floor for coal units. Per subsequent conversation with Amanda, they are still not sure whether they will categorize by any amount of coal, >10% of coal, or >25% of coal.

9. Will MACT floors by fuel subcategory be based only on boilers burning 100% of a particular fuel? (NO) They will use data based on predominant fuel burned (or whatever % cut point they come up with for coal). They will not use data for units burning waste in MACT floors for boilers.

10. Will information be put back into the database on date of boiler or control device installation so we can determine if the equipment was installed after the date of the original boiler MACT? (Not into the emission database, it is in the survey database) They will use data from boilers with controls installed to comply with the first MACT if those boilers are in the top 12%. (They are ignoring the MACT on MACT issue per guidance they have been given.)

11. For subcategories with a smaller number of units, should we look at the top 12% of the total number of units (NO), or the top 12% of the number of units for which data are available (YES)? If less than 30 units, then 5 top units; using minimum of 5 units (even if only 12 data points which would lead to 2 units otherwise in floor)

12. How should we use Phase 2 data versus Phase 1 data, given the fact that there may be differences in how non-detects were treated between the two data sets? (EPA will be using both if it was collected using appropriate methods) – contacted units in top 12% for test reports; using the detection limit in our analysis (not half the detection limit); methods folks looking at multiplier approaches – data sent to EPA methods staff; ND put into floor analysis at method detection limit; using the Med Waste approach for variability, 99% confidence limit, fuel analysis data during testing could be used to add another variability; use CEM data if see load changes affect emissions as well as Hg,

metals, and HCl. Per Amanda, they will look at fuel data during test and test result to determine a % control for Hg, they will apply the % control to all the fuel analysis data for that boiler, and then they will look at variability of controlled emissions.

13. For units with more than one test for a given pollutant, will the average of all tests or just individual tests be used for determining the 'best performers' and the variability in emission rates among the 'best performers'? yes, average all test runs if unit in top 12%, including old tests; average of multiple tests might pull a unit out of top 12% (**willing to look at what units might fall out of floor group if only use average of test results**) Amanda agreed subsequently that it made sense to look at the lowest test in the dataset to determine the top 12% and then add the other data back in to see the variability (e.g., might have a high test for a former top performer that would knock it out, but industry thinks that's a great example of how emissions vary even for top performers).

14. Will variability be calculated from individual run data or unit averages for the 'best performers' in each subcategory? (Based on test runs using the Med Waste methodology)

15. Will the blanks in the data set be filled in (e.g., there are a lot of blank cells in the %fuel columns)? Some test reports didn't indicate the percentage of heat input form each fuel, just listed the fuels burned during the test. The info that EPA has is in the database.

16. Will the test data be quality assured (e.g., will paper copy test reports be used to check that the electronic data are correct)? (YES, as best we can) If a paper test report has a different number than that in the database, which number will be used in the analysis (The Paper Copy) ? Will a "sanity check" be done on the data to examine whether any outliers are data entry errors or bad data? (YES) Checked reports for lowest emitting units against electronic submissions; assessed any outliers; mercury analysis of Method 29 (John Pinkerton found there were some problems with how the fractions were added up back in the laboratory analysis sections of some reports) – they took the Hg values reported in the front of the report and didn't look at the laboratory analysis to ensure the result was calculated correctly.

17. Will the full electronic dataset be made available, or will the full test reports be made available upon request? (It will be in the docket at proposal)

18. What is EPA considering as the appropriate surrogate for organic HAP? CO, formaldehyde, CH_4, THC? (Not yet determined, although leaning toward THC rather than CO)

19. For dioxin/furans, will the basis for a limit (or surrogate) be the total for the 17 individual congeners (mass or TEQ basis) or just selected congeners? If TEQs

are used, which TEFs will be used? (Not yet determined, but we envision total mass or total TEQ, or both) Med Waste did both, which TEQ? Not sure (WHO used in recent MACT but WHO changed)

20. Does any of the data in the emissions test data table include periods of SSM? (Not that we are aware of) 30 day CEM for THC and CO does include SSM events for organics; averaging time may help address (minimum of daily, possibly 30 day average for monitored units); corrected for oxygen may change values (7% for solids, 3% for oil and gas –they are all at 3% in the database now)

21. Are there any sector-based categories that will be considered? (NO at this time)

22. How should we be looking at the PM data – total PM or $PM_{2.5}$? Filterable PM? Filterable $PM_{2.5}$? Will there be an alternative metals limit? If so, will it be a total for all 10 metals plus phosphorus, or will phosphorus not be included? Would there an alternative metals limit for each subcategory? (No phosphorus, since the measured phosphorus compounds are not a HAP) Look at filterable PM (Method 5) only, may be a TSM8 or TSM9 alternative.

23. What additional pollutants might have limits beyond the pollutants in the original Boiler MACT? (Dioxins) by boiler fuel and type. Not expected to use formaldehyde data to set separate limit, using THC/CO instead; hope formaldehyde track with CO/THC. May be open to further subcategorization of gas2 subcategory (coke oven, etc.) if data support; blast oven gas should be exempt again. Natural gas and refinery gas will be grouped together.

24. Will data from boilers that are shutdown be eliminated from the database? (If we are aware that they have been permanently shutdown); some already pulled out. If boiler is only temporarily shutdown, the data will be used.

25. Will test data from a boiler equipped with one type of control device be removed from the database and excluded from the floor analysis if the control device was replaced with a different device after the test was conducted? (Yes, if we have TEST data on the new controls); example - scrubber replaced with ESP is no longer top performer for HCl. EPA would probably use anyway since it represents what a scrubber can achieve.

26. Where a data point is noted as being below the detection limit, does the value indicate the test or fuel analysis result evaluated at the detection limit or at half the detection limit? Sometimes there is a note in the comment field to indicate that half the detection limit was used and sometimes it is blank or not noted, so what should be assumed when the comment field is blank? Use the column with the method detection limit in it if the sample was noted as non detect.

27. In the CO and THC CEMS table, what does “CEq86” represent in the equation used columns? Look up tables and memo will be posted in next web posting; standardizes data (equations)

28. In the CEMS table, what do the equation references correspond to in the conversion equation columns (e.g., HI4, FF4)? Look up tables and memo will be posted in next web posting; standardizes data (equations)

29. Although the README file indicates the database contains only indirect fired process heaters, it appears that there are some data from wood products facilities that include both a boiler and a dryer (e.g., the combustion unit is used to both produce steam and to provide direct heat to a wood products dryer, and all the exhaust might ultimately go to the dryer and its emission control device). Can these sources be removed from the database, especially where it is clearly indicated that the results include emissions from more than just the boiler? (YES)

Can EPA identify which units are MACT floor for each subcategory? May be able to do/ERG has done for EPA (will get it on website by early next week after internal discussion)