



Representing the Interest of America's Industrial Energy Users Since 1978

# Environmental, Energy & Technical Committee Meetings

June 7-8, 2011  
Radisson Hotel, Reagan  
National Airport  
Arlington, VA  
(703) 920-8600

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## MINUTES

### TUES-WED JUNE 7-8, 2011

#### Technical Focus Group

PM and Hg Measurement and Monitoring - **Eric Hallman**, Cargill Inc., Moderator

**Brian Conway**, Sick Maihak, Inc., started the presentations with a report on PM measurement and monitoring. The Industrial Boiler MACT covers 13,555 boilers and process heaters in 11 subcategories. Of these, 11,500 are gas fired, leaving about 2,000 boilers that are solid or liquid fuel fired.

Testing requirements include an initial compliance test, including a 7-day drift test with a PS-11 correlation requirement. At least 15 reference method tests at 3 particulate levels of mass concentration must be tested. The correlation coefficient must be at least 0.85 with a confidence level greater than 95%. There are annual performance test requirements.

Emissions averaging is allowed among existing units in the same sub category. A correlation curve is established and then verified over time with additional testing. Isokinetic sampling is not necessarily required under PS-11. EPA currently identifies particulate matter as coarse particles with a size greater than 2.5 micron and fine particles that are smaller than 2.5 micron. Monitor types include light scattering, beta attenuation, charged particles, opacity, optical scintillation, and inertial microbalance. Beta attenuation is expensive and non-continuous. Charged particle is sensitive to moisture and particles size with no direct correlation to particulate concentration. Optical scintillation lacks sensitivity and correlation to particulate concentration. Opacity is similar. Inertial microbalance is non-continuous and very complex. Light scattering is sensitive to moisture. It is also sensitive to low levels of dust.

Light attenuation depends on different application parameters. An application specific regression curve is created by correlating with gravimetric measurements. This provides a relationship between the dust concentration and the scattered light level. The device operates continuously. The span, contamination, and zero point measurements can be done automatically on line. Sick now offers automatic self-alignment to account for temperature changes in the stack (night to day or summer to winter). At one location at a 525 Mw plant, the stack diameter was 21 ft with a flue gas temperature of 290 F. The mounting location was at 100 ft. Testing against Reference Method 5b at two different time period showed excellent results with the initial correlation.

For "wet" stacks, the sampling system includes a heated compartment which assures that water drops are not present. The sample is drawn into a measuring cell to avoid measuring drops in the



duct. In the first installation, PM spikes were observed that correlated with the rapping system on the ESP. The rapper sequences were adjusted and optimized. The spikes were eliminated and the average emissions level was reduced by 50%. For multi-fuel applications, testing will be done this summer to look at a wide variety of fuels and mixtures. The analyzer was designed with the capability to accept two separate correlation curves in the event there are some fuels that do not fall on the initial correlation curve.

There are also devices to measure CO, CO<sub>2</sub>, H<sub>2</sub>O, and velocity. This data is needed for combustion calculations and flow measurements. Accurate flow measurements are critical to obtaining accurate emissions rates on a lb/MMBTU or lb/Mwhr basis. These units are for filterable particulates only. Condensables are not measured. The Utility MACT rules require both filterable and condensable particulate. For chlorides, there are continuous monitors available using IR and FTIR technology. These units must be done in the hot, wet condition.

Brian also reported on continuous mercury analyzers. With the new proposed rules, the sensitivity has been improved so that the measurement range can be from 0 - 10 micrograms/m<sup>3</sup>. The MACT rules for utility and industrial boilers have very low mercury emission requirements. The units that were designed for European cement and incineration units were not really capable for these low levels. Again a heated cell is used with a sample line. Coated sample lines are used that are less than 50 m long. Longer lines tend to have mercury hang up in the lines. The small quartz cell is heated to 1000 C. The various mercury compounds must be converted to elemental mercury, at these temperatures the compounds breakdown into elemental mercury. Thus, a continuous monitoring capability is provided with no consumables. The actual analyzer cell makes use of the Zeeman Effect. The cell uses a mercury source and a magnet to provide specific spectral lines that can be analyzed. At this point, rather than looking at 254 microns, the device looks at 253.6455 microns in order to make detections. This eliminates most interference.

With no consumables, maintenance costs are greatly reduced. Field testing at a waste incineration plant and a cement plant were done on the new monitor. The new analyzer tracks the prior analyzers with consumables very well. The sensitivity is such that the new analyzer can monitor 0 - 5 micrograms/m<sup>3</sup> down to 0.1 micrograms/m<sup>3</sup>. The Utility MACT standard is 1.2 lb/trillion BTU which is pretty close to 1.2 micrograms/m<sup>3</sup>. The base price of the monitor is \$160 K with about \$30 K for installation followed by RATA testing.

**Vince Brisini**, Leonardo Technologies Inc., gave his perspective on mercury and CEMS systems. For existing units, the 4.6 lb/trillion BTU for industrial units can be measured accurately. For the new units at 1.2 lb/trillion BTU, there are some issues. Unburned carbon that is captured on the probe filter can capture some mercury, which will give a lower reading. There can be probe interference using a platinum probe. A quartz probe has fewer problems. The probe length is important. Temperature, connections, and flow are important aspects as the levels being detected are quite low.

The issue is not the analyzer. The issue is getting a good sample to the analyzer. Cold spots in the sample line will cause condensation of mercury compounds. Connections have to be insulated and maintained. Command and control limits are different from Part 75 limits. Part 75 was developed for trading. Absolute emission rate limits require higher quality data as any exceedance can be considered a violation. Averaging can help this problem. Speculated data is needed to help develop a strategy for mercury control.



Sorbent trap systems tend to be more accurate than other methods. The sample flow rate and duration can be adjusted to get down to the lower levels in the existing rules. The Utility MACT limits for new units on fuels greater than 8,300 BTU/lb are a problem due to the sampling system and not the analyzer. There is a category for "low emitting EGU" existing units. To qualify the mercury emission rate must be less than 10% of the emission limit set for that unit or less than 22 lb of mercury per year. Performance testing must be done annually. Multiple operating loads will require multiple performance stack tests at these desired loads. Continuous parameter monitoring, as set from initial performance testing, must be maintained until the next required performance test. Some 28 - 30 days of testing will be required.

For PM monitoring, the PS-11 installation and performance procedure will be required. There are also QA/QC requirements, including daily QA, quarterly QA, correlation tests, and written step by step procedures. Opacity and optical methods can be correlated on site specific applications. Correlation tests are needed to establish the data needed.

**Scott Darling**, Alcoa, Inc., provided an owner's perspective. Alcoa's Warrick plant in Newburgh, Indiana has 3 "industrial" units at about 150 Mw each that are wholly owned and a utility units at 300 MW that is 50% owned by Alcoa and 50% by the local utility. The industrial boilers serve the aluminum smelters. The whole plant makes about 680 Mw and is all consumed by Alcoa. With the addition of SO<sub>2</sub> scrubbers and unit up ratings, New Source Review was triggered. Particulate Matter (PM) CEMs were installed to replace the opacity monitors. A number of systems were evaluated and the Sick PM system was selected. The monitors offer continuous measurements of very low to medium dust concentrations in wet gases. The wet scrubbers at this plant do get a significant amount of particulate capture. The sampling system extracts a sample that is over heated to vaporize any water droplets. The system is not isokinetic. A state waiver was obtained for this installation.

**Dan Todd**, Air Quality Services, LLC, reported on the actual operation of the devices at the Alcoa plant. The position of the probe is important, especially for wet gases. The probe was tilted downwards at a 15 degree angle to avoid any moisture condensation on the probe getting into the sample lines. Because the type and characteristics of PM vary from source to source, a single PM correlation applicable to all sources is not possible. Thus, each monitor must have its response correlated to the PM concentrations for each operating condition.

A minimum of 15 valid test runs with at least 3 different loadings. Paired trains are recommended by EPA. In order to evaluate monitor responses prior to the official correlation testing, some preliminary testing is in order. In order to determine the "full range" of normal operations of the source, the particulate collection device has to be "de-tuned" to get a high loading, even to the point of pushing the compliance limitation. With this testing, a preliminary correlation curve can be obtained.

The correlation curve generation is a complicated process. There are no instantaneous results. The development could take as much as a week on site. Statistical analysis is required and not just a little. Some 18 - 20 test runs are used to compare measured PM concentration to the PM-CEMS response. Use the EPA's spreadsheet to calculate the regression curves. This spreadsheet is very helpful to set up the curves and evaluate the statistics and determine the best model, if any. The selected curve is then used in the PM-CEMS.

There are 5 models: linear, polynomial, power, exponential, and logarithmic. After certification there is an Absolute Correlation Audit, which measures the response compared to reference standards. This



is required quarterly. There is a sample volume audit that evaluates the sample volume measurement against an independent reference volume measurement. The sample nozzle needs to be cleaned on a regular basis. There is a Relative Response Audit (RRA) that is required annually. This compares the PM CEMS measurement against a reference method measurement by an independent entity at the as found source operating conditions. Every 3 years, there is a Response Correlation Audit (RCA) that essentially redoes the correlation. A minimum of 12 tests are required with 3 different PM loadings.

Replacement parts in the first 3 years included silicon tubing for purge air, gas temperature sensor (corrosion issue), mixing piping (wear and tear), and laser replacement. For this reason, it is probably a good idea to keep a spare test cell in stock. Audit filters take some time to get re-certified and cannot be intermixed. Latex gloves should be worn to avoid stains and other exposure to hands. Labor estimates include 140 technical hours/yr for routine work. The annual RRA needs an additional 10 hours, while the triennial RCA required 24 additional hours. Spare parts is estimated at \$20 K. Initial testing is \$30 K, with the annual RRA testing at \$6 K and the triennial RCA at \$12 K.

Scott pointed out that the PM-CEMS is, on a very basic level, a particle counter. Considerable variation can be introduced as particle makeup changes. Scott's units start up on natural gas. The CEMS show that the unit is out of compliance on start up. When the coal is introduced, the unit comes back into compliance. This counter-intuitive result is likely due to the different type of particle that is formed when burning natural gas (likely from dust in the combustion air). Nozzles need to be cleaned on a monthly basis. The greatest success in establishing a high range came from de-tuning the ESPs. Reducing scrubber sprays gave little variation.

During start up, even small particle counts can result in very high lb/MMBTU values. This needs to be considered for activities like chemical cleaning with periods of gas firing to heat tubes. PM-CEMS can measure emissions following scrubbers and have a longer compliance averaging period to avoid excursions. These systems require much more attention than other, more traditional CEMS. Correlations and QA/QC activities are much more complicated and costly. They require test crews and many hours of testing for yearly audits.

## **ENERGY COMMITTEE SESSION**

**Frederick P. Fendt**, The Dow Chemical Company, Energy Committee Chairman  
**Robin Mills Ridgway**, Purdue University, Energy Committee Vice-Chairman

**Fred P. Fendt**, The Dow Chemical Company, reported on the DOE development of tools to guide EPA energy efficiency requirements. An energy audit is a requirement of the Boiler MACT rules. In addition, energy efficiency is BACT for GHG permits. For a number of years, the DOE has been working on various tools under the Steam Best Practices program. A number of ASME standards have resulted from these activities along with some of the software tools. CIBO has been involved in providing input to a number of these tools at DOE's request. Identification of gaps in these materials would be appreciated by the DOE. It is also worth mentioning to people in Washington that energy efficiency should belong to DOE and not EPA. We also get draft copies of IEA reports for comment. Send comments to Bob Bessette.



## **Energy Assessment Protocol Development for Boiler MACT - Mike Budin, RMT, Inc.**

RMT was sold to TRC Environmental yesterday. The MACT rule is currently under a stay. The proposed rule has a number of features. The scope is dependent on total annual heat input. For major sources, there is a one-time energy assessment that is on source basis. For area sources, there is a one-time energy assessment of the boiler or process heater system. There is an evaluation of the operating characteristics, fuels, and sources of energy. For major sources, there is a review of A&E plans, facility O&M, process logs, and fuel usage. Energy savings are to be identified along with a definition of energy management practices. A report is required with a list of major energy conservation measures.

A list of the energy savings potential of the energy conservation measures must be identified. The comprehensive report must detail the ways to improve efficiency, the cost of specific improvements, the benefits, and the time frame for recoupment. There is some conflict in the rule between the preamble and the body of the rule. In the body, issues such as building lighting, HVAC, motors, and other plant practices outside of the boiler and energy systems are included. However they are not in the preamble.

For facilities with a total heat input of less than 0.3 trillion BTU/yr (34.2 MMBTU/hr) the boiler system and energy use system accounting for at least 50% of the energy output will be evaluated. For facilities between 0.3 and 1.0 trillion BTU/hr, energy use systems accounting for 33% of the energy output must be assessed up to maximum of 3 days. For facilities with a total heat input of more than 1 trillion BTU/yr (about 100 million BTU/hr) energy use systems accounting for 20% of energy output must be considered. The energy system can include process heating, compressed air systems, machine drives, process cooling, facility HVAC, hot water systems, the building envelope, and lighting.

A cost effective energy conservation measure is a measure that is implemented to improve the energy efficiency of the boiler or facility that has a payback of 2 years or less. Energy management practices include practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, staff responsibilities, energy metrics, energy goals, action plans, operating procedures, reporting requirements, and periodic review intervals used at the facility. The audit must be done by a "qualified energy assessor".

A qualified energy assessor is a person who has demonstrated capabilities to evaluate steam generation and major energy systems. The rule no longer requires a "certified" energy assessor. There is no requirement under this rule to carry out any of the identified energy savings. However, one can imagine that if a facility triggered NSR for GHGs (a major source that increases CO<sub>2</sub> emissions by 75,000 ton/yr), this list of actions can form the basis for top down BACT on GHGs. It was pointed out the 4 ASME standards for assessments already exist and a fifth one on fans is being developed. Limiting the EPA required audit to these standards would be one way to provide consistency and limit the extent of process issues (concerning actual production of a product, which may have confidential information) that EPA could attempt to force upon a facility.

A sub-committee sign-up sheet was circulated to come up with some kind of framework on this issue before the September meetings.





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## **Strategic Directions in the Utility Industry - Mike King,**

Black and Veatch Corporation does a survey of the utility industry each year. This year they had some 700 responses. The respondents included investor owned, municipal, and independent utility companies. The questions were grouped into about 10 classifications. Aging infrastructure, reliability, and regulations were the top 3 concerns. Technology moved up to number 4, including cyber security. Environmental concerns were 5th followed by long term investment.

Energy and commodity prices will tend to drive costs up. Carbon pricing will also add to costs. Renewable technologies will eventually get to the point where they could be considered competitive on costs (PV and wind). Average annual energy growth is expected to be 1 - 1.5%. Recent growth rates have not exceeded historical rates for most of the utilities. Water management rose to the top of the list of technical concerns. Energy storage is on the utilities wish list. Retrofit CCS technology and particularly sequestration is expected to be needed.

Over the next 5 years, Mergers & Acquisitions will continue to be important. The need is to strengthen the balance sheet to enable the owners to make investments. Costs have already been driven down. Future investment is what is at risk. On environmental concerns, CCS is at the top along with water supply. Mercury comes next followed by the conventional pollutants. The utilities still see that coal is needed, particularly when fiscal realities are considered. Natural gas and nuclear energy are still regarded as growing in their contribution. Cost barriers are still cited as the major barrier to competitiveness of renewable energy. Shale gas is expected to play a significant role in holding gas prices in check through 2020. The issue of "fracking" was not thought to be a major barrier to increased shale gas production.

There are a number of plants that are more than 50 years old. They estimate that up to 64 Gw could be candidates for retirement. Wind, thermal, and biomass can be competitive with coal and gas fired units with CCS. Solar is only competitive with subsidies. The utilities are also concerned about the time frame required for compliance with Utility Boiler MACT. They see the 3 year time frame as inadequate to bring all of their units into compliance.

## **ENVIRONMENTAL COMMITTEE SESSION**

**Maxine D. Dewbury**, The Procter & Gamble Company, Environmental Committee Chairman  
**Robert (Rob) Kaufmann**, Koch Companies Public Sector, LLC, Environmental Committee, Vice-Chairman

Introductions and Meeting Minutes - **Maxine D. Dewbury**, The Procter & Gamble Company

The minutes from the last meeting were approved as written.

Boiler MACT slate of Rules - **John C. deRuyter**, E.I. DuPont de Nemours & Co.

**John C. deRuyter**, E.I. DuPont de Nemours & Co., went through the notices that have been issued by EPA. The Federal Register notices came out on March 21st. Rules for major source industrial boilers and process heaters, area source boilers, commercial and industrial solid waste incinerator



NSPS, non-hazardous waste definition, the completion notice, and the reconsideration notice were issued. The completion notice states that the EPA completed emissions standards required by the Clean Air Act for 112(c)(3) and 122(c)(6). This was to satisfy the court order imposed upon EPA.

The EPA costs estimates for the capital cost for \$1.8 billion for major sources, \$1.4 billion for area sources, and \$650 million for CISWI. Operating costs were also estimated. For existing boilers, those firing gas have an annual tune up with no numeric emission limits. An annual tune up is required. For limited use boilers and area boilers, the rules are similar. For solid, liquid, and biomass fired units, there are prescribed limits for 5 compounds for new and existing units. Certain gases that could be considered like natural gas can now be classified as Gas 1 units and only have work practice standards. Gases that do not, are classified as Gas 2 and have standards.

For solid fueled units, the new unit limits are extremely difficult to meet, if not impossible when all operating conditions are considered. For the CO limit, the EPA has dropped the CO CEMS requirement. Dioxin/furans has changed to a one time emissions test. The rest of the compounds require an annual emissions test. If 2 years of testing show the unit to be less than 75% of the limit, a test can be skipped for 2 years. The plant cannot operate at more than 110% of the average operating load during the most recent performance test. A PM CEMS is required for all units over 250 MMBTU/hr. Start up and shut down provisions have been changed such that limits do not apply during start up and shut down. The manufacturers recommended procedures have to be followed. The limits do apply for malfunctions. Affirmative defense provisions are considered for excess emissions during malfunctions. The administrator must be notified by telephone or fax as soon as possible but no later than 2 business days after the initial occurrence.

Area sources have numeric limits for coal units larger than 10 MMBTU/hr for mercury and CO, plus a one-time energy assessment. Gas fired boilers are exempt. Small boilers can use tune ups instead of numeric limits. Emission limits were changed to GACT from MACT. The 2 ppm CO limit for oil units was dropped. The tune up requirement must be done by March 12, 2012. With 187,000 units under the area source rule, which means that more than 500 units per day need to have a tune up.

A new incinerator is one that commences after May 20, 2011 or reconstruction or modification after Sept. 21, 2011. Burn off ovens, cyclonic burn barrels, lab analysis units, and chemical recovery units are exempt from this rule. Incinerators, energy recovery units (boilers), waste burning kilns, and remote incinerators. Emission limits are applied to each sub category for 9 total compounds. The limits are very low and require annual testing.

The solid waste definition determines whether a unit is a boiler or a waste incinerator. Traditional fuels include fossil fuels and their derivatives as well as alternative fuels which include used oil, currently mined coal refuse, and clean cellulosic biomass. These fuels do not have to meet legitimacy criteria. To maintain their status, these materials cannot have been discarded. Secondary materials that are not solid waste when combusted are those that remain in the control of the generator or that are used as an ingredient meeting the legitimacy criteria. Materials and ingredients that are discarded but then reprocessed to make them into a fuel can be considered fuels. Anything else is a waste. A unit that burns any waste is then an incinerator.

EPA also announced on May 21st their intention to reconsider provisions in the Boiler MACT, Area Source MACT/GACT, and CISWI. Topics on which additional public review and comment are appropriate include revisions to the proposed sub-categories, fuel specification, affirmative action



provisions, GACT, and issues that arose after the comment period. CIBO has filed petitions for reconsideration under Boiler MACT, Area MACT and CISWI. CIBO also requested a stay of the Boiler MACT & CISWI as well as a stay of the Area MACT/GACT and the Solid Waste rule.

Issues included Gas 2 specifications of 4 ppm H<sub>2</sub>S and arbitrary Hg and H<sub>2</sub>S standards, dioxin/furan limits, PM limits on new units, test frequency, THC alternatives, liquid floor problems, solid fuel HCl floor problems, oxygen CEMS requirement, malfunction affirmative defense, health based exemption, TSM, compliance time, and energy assessment issues. Additional issues include the 50% heat input for other MACT control, limited use definition, gas curtailment, timing of tune up and energy assessment, hybrid suspension/grate boiler definition, output based limits, CEMS requirements, maximum fuel CI level, and fuel and analysis burdens.

For Area Source MACT/GACT, a number of similar issues were identified. For CISWI, issues included contained gaseous materials, startup and shutdown to be similar to major sources, work practice for malfunctions, definitions, homogenous waste demonstration process, waste coal considerations, solid fuel energy recovery sub category, emissions averaging, annual emissions testing, existing technologies for SO<sub>2</sub>, and no PM CEMS.

Earth Justice and Sierra Club also submitted petitions. Objections included setting the floors at 3 times the method detection limit, revised categories unjustified, CO limit, inconsistent parameter monitoring, and use of PM as a surrogate for non-mercury HAP. Additional issues include use of HCl as a surrogate for acid gas, no numeric standards for gas, work practice standard for Gas 2, work practice standards for startup and shutdown, work practice standards for small boilers, and affirmative defense for malfunctions. For Area sources, standards for each HAP, CO as a surrogate, and averaging times were similar. For CISWI, they want PCB and POM standards, average performance, 3X detection limits, standards for burn off ovens, subcategories, beyond the floor analysis was unlawful and affirmative defense.

The petitions for administrative stay were filed by the industry coalition on April 27th. The stay was issued on May 21st. The stay was issued under an administrative ruling to give EPA more time. Petitions to the court have to have been submitted for comments. Additional data and comments are requested by July 15<sup>th</sup>. Reconsideration will take time. The process will likely take a year. The new unit date will not likely change. Existing units will likely get an extension. The Area Source rule and the Solid Waste definition have not been stayed. There are discussions underway at the Dept. of Justice about these rules. The case by case permits for MACT are also called into question. At least one state is issuing permits under 112(j) using the old rule.

**Amy Marshall**, URS Corporation, reported on the cost study update. The costs from the original study were updated in view of the new rule. EPA claimed that the costs of the new rule reduced the estimated cost in half. The industry cost is still considerably higher than the EPA estimate (\$14 billion vs. \$5 billion by EPA). The reduction was on the order of 1/3. Alternate standards would result in somewhat lower costs for coal units. The EPA inventory database included data on 1594 boilers including fuel type, design heat input, existing emission controls, and emissions data for some units. For those units that did not have controls, EPA proposed control technologies were assumed to need to be installed. Only up front capital costs were considered. Lower cost incremental controls were assumed for units with control equipment, but not meeting the standards. Median costs were used. No escalation was applied. Costs were developed from actual units that had installed controls. There are some units that do not have space and there are some units that will shut down. No specific





attempt was made to identify such units (i.e. all units were assumed to install controls or improvements).

Base costs were established for each control technology. Unit size was scaled using a 0.6 power. Units less than 10 MMBTU/hr were assumed to use work practice standards. Feedback from owners that had evaluated compliance costs were considered. Several scenarios were examined (i.e. alternate limits, no dioxin/furan, lower cost HCl sorbent injection). The EPA base case had a very low cost for mercury control and no cost for dioxin/furan control. This appears to be unrealistic. The EPA base cost for mercury was \$6 million. The URS cost was \$1.4 billion. If the alternate limits are allowed, the cost for coal only drops to \$4 billion. Using the final rule with alternate limits and no dioxin/furan limits, the cost for coal comes down to \$3.7 billion. The EPA is still using 1998 costs from the OAQPS cost manual. The URS study used recent actual costs for actual installations. For compliance issues, the EPA assumed that a mere tune up would meet the CO limits (under all conditions). Again this does not appear to be reasonable especially when NOx emissions have to be taken into account. For HCl compliance, EPA assumed packed bed scrubbers with very low costs. This assumption is not realistic. For dioxin/furan EPA assumed zero cost. From the prior study done by IHS, for every \$1 billion spent, 16,000 jobs were at risk. At \$14 billion some 224,000 jobs would be at risk.

**Lisa Jaeger**, Bracewell & Giuliani, L.L.P., reported on the reconsideration process. The reconsideration petitions have been filed on most of the rules. There has not been a petition filed on the solid waste rule as yet. Petitions have been filed with the court on all rules. If a petition is filed with EPA, the court is not deprived of jurisdiction, except for RCRA. Since the petitions have been filed with the court, it might be desirable not to file with EPA, which could deprive the court of consideration. RCRA does not have reconsideration language. At this point, no one has been willing to risk the court case by filing a request for reconsideration for the solid waste rule. At the moment, the docket is closed, even though EPA has requested additional information by July 15th. Petitions have to go to EPA and then EPA can (when it has the time) put the comments in the docket for others to see. Of course, EPA can take things into consideration on their own. The time limit for petitions to the court is June 20th. After that date, the court will issue a schedule for submission of arguments. Then EPA can request that the case be put in abeyance while EPA does its reconsideration. EPA has sent a definition of solid waste under sub Title C for hazardous waste to the Office of Management and Budget (OMB). EPA has stated that they want to have consistency between the two rules.

On the litigation side, the HMIWI case still has not been decided. The pollutant by pollutant argument is part of that case. The Portland Cement MACT has a similar issue. In this case, the floor was not set by units with controls, but with units that have low emissions. The best units with controls do not meet the standards (the limestone is high in mercury). A decision is expected next year. EPA is reconsidering two start up and shut down issues. The rest are part of the case.

### **Utility Boiler MACT – William (Bill) Campbell, AECOM Environment**

The Utility Boiler MACT was published May 3rd. The EPA released its Utility Toxics Study Report to Congress in 1998. The CAMR rule was issued in 2004 which was vacated. The new rule will replace the CAMR. This rule only impacts electric generating units (EGUs) that burn coal and oil. It regulates mercury emissions with numerical limits and PM and HCL for Coal units. The EGU definition means a fossil fuel unit of more than 25 Mw electric that serves a generator for sale. A cogeneration unit that



supplies more than one third of its potential electric capacity and more than 25 Mw to any utility power distribution systems for sale. To be considered fossil fuel fired, a unit must have fired coal or oil for more than 10% of the average annual heat input during the previous 3 years or more than 15% during any one calendar year. Alternative surrogates allowed for non-mercury metal HAP include total PM, total non-mercury HAP metals, and individual HAP. If an SO<sub>2</sub> scrubber exists, SO<sub>2</sub> can be used as a surrogate for acid gases. Emissions averaging can be done between existing units that are in the same sub category. Affirmative defense is provided. Fuel analysis for liquid oil HAP metals (including mercury) can be a compliance method on a monthly basis. Waste coal is included in the coal category. Every time a performance test is done with a fuel analysis, if the fuel analysis is used for compliance, it sets the level for that compound until the next performance test.

Gas and biomass EGUs are not in the Utility MACT. Health base emissions limits are not included. There is no minor source category. New unit limits are of concern and apply at all times, including start up and shut down on a 30 day average. Cherry picking of emission rates is a problem. The compliance time frame is too short. The compliance cost is high according to utilities. A rate increase of 20% has been requested in Kentucky (2 wet scrubbers and 12 fabric filters). The PJM auction for 2015 showed increases of \$2 - 3 billion. DOE filed a complaint that EPA made a conversion error in converting lb/trillion BTU into lb/Gwhr. The error was by a factor of 1000. There was a further problem of EPA using an average heat rate of 8,000 BTU/Kwhr.

#### **RCRA Ash - Robin Ridgway, Purdue University**

**Robin Ridgway**, Purdue University, pointed out that there are several terms covered under regulations for coal ash, including fly ash, bottom ash, bed material, slag, scrubber sludge, mill waste, coal combustion residuals, coal combustion residues, coal combustion byproducts, and coal combustion products.

Fly ash has been used in construction activities since 1949. In 1976, the Resource Conservation and Recovery Act (RCRA) was enacted. In 1980, the Bevill Amendment was passed which excluded coal ash from Subtitle C regulation. A number of reports to Congress declared that coal ash was non-hazardous. In 2010, the EPA issued a proposed rule that indicated that coal ash could be regulated under Subtitle C or Subtitle D. Comments were due in November 2010. The rule was targeted at electric utilities. The preamble suggests that the rule is not applicable to beneficial use, mine fill, or industrial facilities.

Four different frameworks were proposed: 2 under C and 2 under D. Due to the number of comments, the EPA has indicated that a final rule will not be out until after 2012. The advocates for Subtitle C claim that this makes any rule federally enforceable. There could be exclusions, but the stigma associated with "hazardous waste" would make beneficial use difficult, if not impossible. The Subtitle D option is not federally enforceable, although there could be enforcement if an activity is not compliant with D through the classification as an "open dump". There are no exclusions, but there is considerably more flexibility in the application of the rules. States can craft their own programs to fit their needs. One proposal was to list coal ash as a "special waste" subject to Subtitle C. Land Disposal Restrictions (LDR) and treatment standards would apply. Ground water monitoring would be required. Surface impoundments must meet the LDR and liner requirements within 5 years or close within an additional 2 years. An alternative would be to create a classification on Subtitle D that would



identify requirements and then only use Subtitle C for states that did not develop enforceable Subtitle D regulations and submit them to EPA for approval.

The EPA received over 450,000 comments on the proposed rule. Congress is considering legislation that would forbid EPA from regulating coal ash under Subtitle C. Many organizations have weighed in including state agencies, public utilities, the Department of Transportation, local governments, energy companies, academia, labor, and business. The Office of Surface Mining has announced plans to move ahead with mine fill regulations.

### **GHG Regulatory Developments - Maxine D. Dewbury, The Procter & Gamble Company**

The compliance date for the GHG Reporting Rule deadline was deferred to Sept. 30th. There are "practice" reporting opportunities on the EPA site. Confidential business information is still a problem. Prior interpretation was that only emissions rates would be public information, but operating rates and other information would be held in confidence. EPA now says that any information that goes into the calculation of GHG emissions would be public information. This data would be available worldwide (to anybody with internet access). In the latest announcement, EPA has deferred certain information disclosure to 2014. For data to be excluded, the EPA wants companies show that release of such data would actually cause harm to companies. EPA indicated that production and throughput data that is not needed to calculate GHG emissions would be treated as confidential. A few that have used the reporting tool have indicated that it appears to be working.

The Tailoring Rule temporarily raises the permitting thresholds for GHGs to 100,000 ton/yr from 100 ton/yr. Beginning July 1st, any source that requires a PSD permit will need to include GHG considerations. The increase threshold for GHGs is 75,000 ton/yr. Once a facility is a major source for one regulated pollutant, the facility becomes a major source for all regulated pollutants. This requires a federal permit rather than just state permits. Some facilities can attempt to take a "synthetic minor" permit based on actual emissions rather than "potential to emit". Enforceable limits on "potential to emit" would be required. States need to adopt the thresholds.

EPA is planning to issue NSPS for GHGs. This could obviate the "temporary" higher threshold in the Tailoring Rule. A draft rule for utilities is expected by the summer and for refineries shortly after. These rules will likely apply to both new and existing sources. These actions came about as a settlement with environmental groups without input from any other sources. Most states have made adoptions. Texas is an exception. EPA has issued a FIP (Federal Implementation Plan) for Texas. There are 4 law suits pending by Texas against EPA.

GHG BACT guidance has been issued. Energy efficiency is considered to be BACT. For existing facilities, the emission unit being modified would be the source that efficiency projects would apply to, although states can elect to go further into the plant. New facilities would be subject to plant wide efficiency improvements. The guidance provides consideration for CCS. The guidance calls for evaluation of fuel changes as well as scope changes to be considered. The Energy Star Program and other white papers are referenced and need to be considered. Cost can be considered, but cost effectiveness is not defined. It is not clear how numerical metrics for efficiency can be applied, especially to facilities that have multiple products.



EPA has announced a 3 year deferral for biogenic CO<sub>2</sub> emissions. Biomass could be considered as BACT for GHGs. Comments were due May 5th. A substantial number of comments were received. The 3 year period is supposed to include a 2 year study and a year of rulemaking.

### **Cooling Water Intake Structure Rulemaking - Ann McIver, Citizen Thermal**

Cooling water is water used for contact or non-contact cooling, including equipment cooling, tower make up, dilution of effluent heat content. Impingement occurs when organisms are trapped against the outer part of the screening device of the intake structure. Entrainment covers organisms that get past the screen, but can't get out. Section 316 b has been in the Clean Water Act since 1972. Phase II was primarily an electric generator rule. Phase III was intended to cover industrials. After a settlement with the environmental groups, Phases II and III were consolidated. A proposed rule was issued on April 20th. Comments are due July 19th. A final rule is expected in July of 2012. Compliance with the rule is no later than 8 years after promulgation.

For utilities, which were in Phase II, it was assumed that studies were already underway. They need to get permit applications in place within 6 months after promulgation. The rest will have 3 years to do the permit applications. The rule is applicable to a point source with an NPDES permit. The CWIS has to have a total design intake flow of 2 million gal/day (relatively small). The other requirement is that 25% of the intake water is used for cooling. These figures are on an annual average basis for each calendar year. Make up water for process is not included, nor is emergency water or fire protection systems. The general approach to compliance for impingement and entrainment includes closed cycle cooling, velocity reduction, physical barriers, modified screens, collection and return systems, and changes to intake location.

For sites with more than 125 million gal/day requirements, impingement must be less than 12% on an annual basis and less than 31% on a monthly basis. An entrainment study must be conducted. For units more than 2 MMGPD but less than 125 MMGPD, the numeric limits apply, but the study is not required. For impingement, the numeric limits have to be demonstrated (fish counts) or demonstrate that the velocity through the screen is less than 0.5 ft/sec. For entrainment, for large facilities, an entrainment characterization study must be completed and must be peer reviewed. An entrainment mortality data collection plan must be included. Monitoring is required once/week, with an average calculated each month. The figures are reported on monthly reports. Adverse conditions (floods, ice flows, etc.) and inclement weather (storms, etc.) are a problem. EPA requested comments in 28 specific additional areas. EPA will conduct a "willingness to pay" survey. The ongoing amount of work to meet compliance will be substantial.

### **NAAQS Update - Rohit Sharma, LyondellBasell Industries**

The current 8 hour ozone standard is 75 ppb. The proposal in January has a range of 60 - 70 ppb for the primary standard. The secondary standard is being proposed as 7-15 ppm-hours for a cumulative seasonal standard. The Schedule for compliance would be for SIPs in 2014-2016 depending upon severity. A final rule decision is expected by the end of the July. The 8 hour ozone implementation rule is expected in the third quarter. This rule will have definitions on non-attainment areas for ozone. The ozone review is scheduled for proposal in 2013 with a final rule in 2014. This standard impacts



the requirement for the Clean Air Transport Rule, which was just issued. That will have to be modified if the ozone ambient standard is lowered.

On the NO<sub>2</sub> standard, the new 1 hour standard is 100 ppb. For SO<sub>2</sub> the standard is 75 ppb. These standards are requiring modeling to show impacts and attainment. More monitors are being requested. Unclassified areas (those without monitors) need to be modeled by 2012. This modeling vs. monitoring issue is a major problem. States do not have the capacity to run all of the modeling that will be required.

On PM<sub>2.5</sub> there is the 2006 standard in place. This standard is under review. The level that is being looked at is 11 - 13 micrograms/m<sup>3</sup>, with EPA recommending 11 - 12. This standard is somewhat dependent on the daily standard.

The CO standard was retained on November 2, 2010 at 8 ppm. However, more "near road" monitors are being required. A draft of "exceptional events" guidance is under review. This is to cover events like forest fires, wild fires, volcanic events, etc. Comments are due June 30 th.

The Texas Commission on Environmental Quality has issued a Flare Study Report. The requirement for the flare is to meet 98% destruction efficiency. One of the conclusions was that the best destruction efficiency came at operating conditions close to the smoke point with a visible flame (and relatively high noise). The prescriptive rules in the present standard may not be meeting the 98% destruction goal.

#### **Litigation Update - Lisa Jaeger, Bracewell & Giuliani, L.L.C.**

The CEMS and RICE suits are in settlement discussions. On NSPS, EPA has pushed back the revised Utility NSPS to September. On the ozone case, the EPA has now stated that its reconsideration will be done July 29th. The interveners have requested that this date become a court ordered date. Instead the court has stated that the case will be re-instated either 14 days after the reconsideration or August 12th.

On the SO<sub>2</sub> NAAQS, the court has to issue a schedule. There are two main issues. One is the level of the standard. The other is the modeling issue. The final rule required modeling data and, in fact, would give modeling data precedence. Many states are in this law suit.

On the GHG lawsuits, the Endangerment Finding is being challenged in a massive law suit. The briefing schedule has been issued. All of the GHG cases will be fully briefed by the end of the year. Oral arguments will likely be held in the spring. The PSD Interpretive Memo Rule case will see briefings starting June 20th. At this time, those petitioners dealing with biogenic emissions have asked for severance and abeyance of their petition as EPA has delayed their rule making for 3 years. On the light duty vehicle rule opening briefs were filed on June 3 rd. Final briefing is expected in December.





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## **GOVERNMENT AFFAIRS SESSION**

**Anthony Reed**, Archer Daniels Midland Company, Government Affairs Committee Chairman  
**Karen Neale**, Hummingbird Strategies, LLC

A number of new Congressional members were visited in March relative to Industrial Boiler MACT. The theme was that the revised rule was an improvement, but there were still many industrial issues. The primary visits were to those states where members had facilities. Over 230 Congressmen sent letters to the Administration requesting a MACT rule that protects public health while still protecting jobs. There are a number of bills in the current Congress, but none have progressed very far. One bill did provide for loan guarantees for manufacturing efficiency improvements. There have been some proposals in the House of Representatives on coal ash supporting Subtitle D regulation. With all of the budget issues in Congress, it will be difficult to get agreement amongst the House, the Senate, and the President on any other bills. With EPA putting off any regulation on coal ash until after the 2012 elections, it is not likely that Congress will put forth any bill on coal ash. On Boiler MACT, CIBO will continue to request health based emission limits and appropriate work practice standards for these rules.

### **Next Technical Focus Group/Environmental & Energy Committee Meetings**

**TUESDAY & WEDNESDAY, September 13-14 2011**

**Radisson Hotel Reagan National Airport**

**2020 Jefferson Davis Highway**

**Arlington, Virginia 22202**

**Ph: 703-920-8600 ~~~Fax: 703-920-4033**