



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

## Environmental, Energy & Technical Committee Meetings

March 13-14, 2012  
Radisson Hotel, Reagan  
National Airport  
Arlington, VA  
(703) 920-8600

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### MINUTES

#### TUES-WED March 13-14, 2012

Technical Focus Group Session

Energy Assessments and Boiler Tune Ups

Moderator - **Mike Budin**, TRC Environmental Corporation,

Real World Case Studies - **Laura Girard**, Burns & McDonnell

**Laura Girard**, Burns & McDonnell, presented a couple of examples from university and industry. There are four approaches to energy efficiency. These include the internal approach, the 3rd party audit, the energy performance contract, and the energy "kaizen" approach (which combines the others with continuous improvement). The internal approach has the advantage of staff familiar with the facilities. The disadvantage is that often, this is not the primary focus of the staff. The external approach provides this focus, but there is always a learning curve for outside resources.

The University of Missouri - Kansas City consisted of 27 buildings on 3 urban campuses with 2 million square feet. The university was experiencing increasing utility costs, the need to replace an aging chilled water plant, and sustainability issues. As their budget was limited, the energy performance contract was selected. For this project, the utility history for 3 years was evaluated as a baseline. Benchmarking was done to compare with other facilities. An equipment inventory was carried out to identify energy consumers. An analysis and evaluation was done and recommendations were prepared. In this case, a major construction project was required to replace the central chilled water plant. The project cost was \$19.4 million with an annual savings of \$1.3 million and a payback of 15 years. The measured results showed a 20% savings in energy consumption. The energy performance project was used as a funding mechanism which provides for aggregation of several energy projects. The disadvantages include the length of time to do the project, the focus on capital projects, and the typical limitation of to "low risk" opportunities.

The second case study covered an industrial case using the energy "kaizen" approach, which emphasizes continuous improvement. The goal is to eliminate instances of waste one by one at minimal cost. The key is to use cross functional teams that involve stakeholders. Clear deliverables with a defined time line (typically less than a week) are set. The approach emphasizes creativity before capital expenditure. The idea is to do what can be done with what is available before resorting to spending money. The sequence involves pre-work (data collection, etc.), event week, and follow up (verify calculations and implement plans). In this case study, a waterfall diagram was created showing the various proposed actions and the amount of energy that could be saved. This diagram shows what is needed to reach the targeted savings. This approach evaluates both O&M and capital



improvement opportunities and provides cost and savings justifications. The disadvantages are that the process requires significant investment in time and internal resources. The process does not provide financing and does not provide a final written report (which would be required for Boiler MACT).

A Boiler MACT energy assessment must include a visual inspection, an inventory of major energy consuming systems, a review of available A/E plans, a review of a facility's energy management practices, a list of major energy conservation measures, and a comprehensive report. In general, many of these industrial practices cover more than what is required. Current approaches to energy efficiency could be compliant with Boiler MACT assessment requirements with some modifications.

#### Boiler Tune-ups – **Norb Wright**, Consultant

MACT and GACT rules require boiler tune ups. MACT applies to major sources. Large units (greater than 10 MMBTU/hr) require an annual tune up. Small units require a biennial tune up. The requirements include burner inspection, flame pattern inspection, control system inspection, optimized CO emissions, general tune up, and a record of CO emissions before and after, as well as describing all findings and corrective actions.

The GACT requirements are differentiated by size and fuel. Gas units for area sources are not covered. The GACT requirements include burner inspection, flame pattern inspection, control system inspection, and optimized CO emissions. A record of the CO emissions before and after the tune, as well as the findings and corrective actions. EPA has tapped the DOE to prepare a Boiler Tuning Guidance Document. Given the diversity of the boiler population, the guide will inherently be more generalized than specific in nature.

Each facility will need to tailor the guide to conform to the installed boilers and boiler combustion control systems. Before tuning commences, written procedures should be in place that contain boiler and emission limit data. Flue gas sampling locations should be identified. A home for the steam needs to be identified, particularly at high load. Roles and responsibilities need to be assigned. During the tuning, the tuning should be done across the firing range. Check the minimum fire for stability, repeatability, and percent of full load. The flue gas combustible/CO and O<sub>2</sub> levels at each load point should be checked. The air preheater and economizer performance should be evaluated. The flue gas recirculation should be checked to make sure that it is operating properly before testing. For liquid fuels, the atomizer assembly should be checked for proper assembly. The tuning should be consistent with emissions limits. After the tuning, all data should be properly recorded and all regulatory requirements met. The boiler should be exercised to confirm that the system responds without issues. The data should be obtained from the tuner (in rough draft form) before the tuner leaves the site.

#### Real World Case Studies – **Chris Henderson**, AAI-JMP Engineering

Tune-ups, whether for efficiency or emissions, are basically about fuel, air, and the fuel air ratio. From a tune up point of view, the primary losses that can be controlled are the stack losses. These losses include moisture loss, dry gas loss, and stack temperature. Mixing of air and fuel is a critical aspect of combustion. Excess air can be safely lowered if the mixing is correct. For stokers, oxygen concentrations as low as 3 - 3.5% can be achieved. PC units can get to 2.5 - 3%. Oil can get down



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to 2% and gas can get down to 1.5%. With these lower levels of excess air, fuel cost savings can be achieved.

The tune up procedure should include physical inspections. These inspections should include the locations of sensors, the proper installation of equipment, the right locations for probes and analyzers, the proper alignment of actuator and damper linkages, and the general condition of the boiler. At one plant, the oxygen probes were reading high on one side. Traverses were done and the results seemed to be uniform. The probes were switched and the one side was still high. It turned out that the calibration procedure allowed tramp air into the device (due to a lost cap). This explained the difference between the two sides. Transmitters need to be matched to the system. Calibration frequency should be checked. Flows can be checked by traversing. If the oxygen measurement is accurate and the fuel composition is known and measured. The flows can be calculated from combustion calculations. Cross limits need to be implemented correctly. The control system needs to ensure that there is always enough air for the fuel entering the boiler.

The control philosophy needs to be understood, particularly if the air flow is split so that the PID controller can be tuned correctly. The actuator characterization should be checked with position vs flow. Most problems occur on the air side rather than the fuel side. On one actuator, 90% flow was achieved with 12% damper opening. Full flow was at 80% open. At full opening, the flow was actually reduced. Hysteresis occurs due to loose linkages. Sometimes the linkage binds in certain positions. The key to getting low excess air is to maximize the mixing effectiveness. Spin or swirl vane adjustments are often made by visually looking at the flame. However, measurements can be more helpful in providing the proper location. In some cases, the vane adjustments can be automated to optimize over the load range. Load ramps are then tested both with single boilers and multiple boilers under controlled and natural ramps.

This is What You Need to Do - **Mike Budin**, TRC Environmental Corporation

A tune up means adjustments made to a boiler in accordance with procedures supplied by the manufacturer to optimize efficiency. This definition in the Major Source rules for Industrial Boiler MACT. This does not appear to apply to process heaters and is not defined in the Area Source rules. Major sources need to show initial compliance by the compliance date and then an annual tune up for large boilers and a biennial tune up for small boilers. For very small boilers less than 5 MMBTU/hr have a 5 year tune up requirement. Area sources have an initial compliance date of March 21, 2012, but EPA is indicating March 21, 2013. New sources do not require a tune up. For solid fuel units less than 10 MMBTU/hr, a biennial tune up is required. This also applies to oil units greater than 5 MMBTU/hr and all biomass units. There is a proposal the seasonal units and small oil units have a 5 year cycle.

The requirements include burner inspection with a clean and replace proposal every 36 months. The flame pattern should be inspected. The fuel to air ratio control system should be checked, calibrated, and functioning properly. The CO and oxygen concentrations must be measured and reported before and after the tune up. An onsite biennial report with CO concentrations, corrective actions, and the type of fuel used must be maintained.

A one time assessment to identify cost effective conservation measures must be done. The focus is on major energy using systems. Conservation measures, with energy savings potential and payback, must be identified. The scope is dependent on the total annual heat input to all boilers at the facility.



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The assessment must be performed by a “qualified assessor”. A comprehensive written report must be submitted to EPA. The one time assessment is required for all major sources and all area source boilers over 10 MMBTU/hr. Cost effective is defined as a 2 year payback.

The focus is now on the generation of steam and the use of steam on the site. An inventory of the major systems consuming energy from the affected boilers and process heaters which are under the control of the boiler owner/operator. A review of the facility's energy management practices is required. A list of major energy conservation measures that are within the facility's control is required, along with the energy savings potential. The assessment must be performed by a “qualified energy assessor”. A comprehensive report must be submitted. A signed certification of energy assessment completion must be submitted with the notification of compliance status. This energy assessment is required for an environmental permit.

## **ENERGY COMMITTEE SESSION**

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

### Coal Conversions to Alternative Fuels for MACT Compliance

The usual “round the table” introductions were carried out. **Bob Corbin**, CIBO Member Services Consultant pointed out that we have two new members present at the meeting from Darling International Inc.. Lisa Jaeger gave the anti-trust admonition. Lisa pointed out that the origins of the anti-trust rules were for consumer protection to give the benefits of competition to consumers. The first amendment to the Constitution provides for an exemption to the anti-trust rules under the right to petition the government. Thus, trade associations can work together to petition the government (with regard to rules and regulations). That being said, most allegations involve conspiracy theories with regard to prices and markets. Since circumstantial evidence can be used to “prove” a conspiracy, any conversations that involve prices or markets need to be avoided.

#### Case Study Conversion of Coal to Biomass Firing

**Donna Wirick**, Recast Energy, LLC

**Ronnie Burnette**, Recast Energy, LLC

**Ronnie Burnette** and **Donna Wirick** of Recast Energy reported on a coal to biomass conversion in Louisville, KY. Recast currently owns 3 facilities and is operating 3 other facilities. At their Kentucky plant, a coal fired unit will be converted to biomass. The unit is a 240,000 lb/hr boiler. There is a natural gas unit on site that provides 100% backup. Originally, there were 4 stokers firing Kentucky coal. After the conversion, three stokers will fire biomass to provide the steam load to the plant.

Recast purchased the existing powerhouse and assumed the operations and maintenance. The permits were transferred. A temporary, gas fired package boiler was installed to ensure a reliable supply of steam to the two remaining chemical companies on the site (a third chemical company went out of business). The oldest coal fired boiler and the oldest gas fired boiler were retired. These retirements were a key factor in obtaining the permits. The existing gas fired boiler and the temporary gas fired boiler are currently being operated. The largest coal fired boiler is being converted. The boilers have been torn down. The coal pile land has been remediated. The existing economizer has been removed, along with the overfire air fan and ducting. The coal feeders were removed. An ESP



is replacing the old baghouse. The ID fan has been rotated to meet new earthquake requirements. The new fuel handling and receiving system has been installed. (This is the critical part to get right.) The overfire air system is being modified to include an additional level. A new control system is being installed. The existing electrical system is being upgraded.

On the permit side, the keys were to avoid PSD by netting, avoid Boiler MACT, avoid fuel controversy, and maintain a separate source. The original plant was a World War II Office of War Production rubber plant. The plant was subsequently split up into sections owned by 3 different companies. The permitting agency was the county, with oversight by EPA. Ultimately the agency agreed to a separate source as since there were 3 different companies involved. By shutting down the older units, netting was available. However, with CO from wood firing being higher than coal, there was not as much room on the CO limits. A creative permit structure was required. The district did not have any experience with wood fired units. Background data had to be resurrected to give a baseline. The potential to emit had to be calculated for the wood fired fuel. From there, the significance levels were estimated. As CO was the major issue, a higher limit was imposed under a site wide bubble. Although the old plant had been investigated for health issues due to the close proximity to home owners, most of those issues were resolved in the past.

In general, as long as the word "wood" was used (rather than biomass), there was relatively little local opposition to the plant. The final permit was issued as a separate source (staying out of MACT), a Title V permit, particulate controls (ESP), area source designation, no PSD triggers, and a facility bubble limit for CO<sub>2</sub> and PM<sub>2.5</sub>. The application was submitted in Dec., 2010 and the permit was issued in June, 2011. Construction started in June, 2011. The unit is expecting first fire this June.

#### Case Study Coal to Natural Gas **Ann McIver**, Citizens Thermal

Citizens Thermal is a public charitable trust (non profit) in Marion County, Indiana. The group is the district energy provider to the City of Indianapolis. The plant has 8 boilers of which 3 are coal fired, 3 are gas fired, and 2 are distillate oil fired. The steam pressures are 650 psi and 250 psi. There are two steam turbines of 5 and 15 Mw (thus below 25 Mw and not an EGU). There are two topping turbines of 1.7 Mw. The steam sendout to the city does not result in condensate returns. Consumers include industrials, hospitals, universities, city buildings, and citizens.

Increasing costs and competition have resulted in rising steam rates. This includes fuel cost increases of 49% and operating cost increases of 38%. The economy also caused a loss of load of 8%. On the other hand, the cost of natural gas has declined in recent years. In addition, pending environmental compliance costs may add to their cost issues. As a result, a review of the steam business was taken to try to arrive at competitive steam rates, a sustainable steam business, and improvement strategies.

Given the price of gas delivered to the burner tip of \$6.7/dth, a gas fired boiler would provide a lower cost of steam with gas. The plant had spent \$12 million to meet the MACT I rules in 2006. The estimate to meet the currently proposed MACT rules by 2014 was \$24 million. The future of the steam business revolves around limited customer load growth. Continued conservation measures by customers (to save on fuel/steam costs) will continue to limit load growth. There could also be a sharp decline if an industrial customer relocated due to cost issues.





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A base case and two options were evaluated. The base case is the current operations. The compliance case is the base case plus Boiler MACT. The new case is the coal to gas conversion. Projections were done on the sensitivity to natural gas prices. The projected break even case was at a gas price over \$10/dth. Future gas price projections in the US do not support such a price at this time. As a result, it was recommended to convert 3 coal fired units to gas. Natural gas reliability and pricing is a risk. The current steam contract for the waste to energy plant is indexed to coal. One additional downside is that the O&M staff will likely be reduced when the conversion from gas to coal is completed.

CHP for MACT Compliance

**Jessica Bridges**, United States Clean Heat & Power Association

The initials stand for the US Clean Heat and Power Association. They are a trade association that supports CHP for commercial, industrial, and residential CHP. They support all fuel sources, but particularly natural gas. There are 82 GW of CHP in the US. Their mission is to increase the deployment of combined heat and power and waste energy recovery systems to benefit the environment and the economy. They are an advocate for federal incentives for CHP. There is a proposed CHP investment tax credit, a grant program (1603), and the recently introduced Bingaman Clean Energy bill. The USCHPA takes no position on implementation. They have favored CHP as a potential compliance strategy.

The CHP investment tax credit applies to 15 - 50 Mw systems. No waste heat recovery is included. This has limited the applicability. USCHPA is pushing for 25 Mw and up along with waste heat recovery. House legislation is stalled. Senators Bingaman and Snowe have indicated an update to S. 661, but they are both retiring. The 1603 grant program expired in December. Grants were issued for 14 projects totaling \$7 million. The group is seeking an extension.

There is a Senate bill (S. 1000) called the Energy Savings and Industrial Competitiveness Act. This bill is aimed at building and industrial efficiency. There would be \$400 million loan authorization for building EE retrofits over 10 years. There would also be \$400 million for state revolving loans to commercial and industrial manufacturers. The House bill is HR 4017. The goal is to double CHP deployment to 170 Gw by 2020. The Bingaman bill (S.2146) proposes to have utilities obtain 40% of their energy from "clean" sources by 2035. Credit is awarded based on carbon intensity. CHP is awarded additional credit to reflect use of heat versus installing a separate boiler.

There is also the Duke proposal which would provide a 20% tax credit for utility investment in new distributed generation. The credit would be 20% for waste heat and 10% for CHP (existing limit). There would be a 50% ownership restriction on utility ownership. The asset can then be turned over to an industrial.

R-22 Phase Out

**Frederick (Fred)P. Fendt**, The Dow Chemical Company

**Fred Fendt** of The Dow Chemical Company, pointed out that the T-12 fluorescent tube light bulbs are being phased out. They will not be able to be imported. Estimates are that supplies will run out by the fall and certainly by the end of the year. In thinking about replacements, it might be a good idea to look at lighting system revisions for efficiency. In a similar vein, the R-22 refrigerant is designated to be replaced and phased out by 2020. However, there are already signs that R-22 supplies are



tightening. Again, in looking at energy efficiency projects, the chiller system may be a target for more efficient refrigeration systems.

## **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

**Maxine Dewbury** opened the environmental session. The minutes from the last meeting were approved unanimously. The Boiler MACT rules were the primary topic for the afternoon session.

Boiler MACT Slate of Rules

**John C. deRuyter**, E. I. DuPont de Nemours & Company  
**Amy Marshall**, URS

On March 21, 2011 the final rules on Industrial Boiler MACT, CISWI, Area Source MACT, and the Solid Waste definition were issued. In December, the proposed rules were modified. The MACT rules were changed. The CISWI rules were issued as modifications to the 2001 rules, not the 2011 rules. The Solid Waste rules were also modified. Although the rules were modified as a result of additional data, the cost for compliance is still high. The URS estimate is still on the order of \$14 billion. There were some units that shifted from being CISWI units to being boilers as a result of the rule changes. Comments were due in February. An extension was requested, but was denied.

The EPA still has some kind of agreement with the eNGOs to issue the final rules by April 30, 2012. Compliance would be 3 years from the date of issuance in the federal register. There is the potential for an additional year if equipment or schedule bottlenecks occur.

The proposed changes include work practice standards for dioxin/furan (good), split PM limits by boiler design for coal and biomass units, generally lower CO limits (not good), lower limits on Cl and Hg for coal units (not good), Gas 2 specifications to be considered Gas 1 with work practices dropped H<sub>2</sub>S (good), oxygen CEMS in stack replaced with oxygen trim for CO compliance (good), operating parameter limits changed to 30 day rolling average (good), start up/shut down definitions based on 25% load (good), and hot water definition includes units less than 1.6 MMBTU/hr (good). The CO limits have some very low numbers. The PM limits have been segregated by fuel and boiler type.

URS went through the database to attempt to determine if any units can make all of the limits (with reasonable assumptions) without installing capital. For example, there are 188 PC units in the database, with 11 potentially compliant. This is close to 6%, which is the average of the top 12%. However, there are 378 stoker units of which only 5 can meet all of the limits simultaneously, or 1.3%. On the other hand, 26 of 34 CFB units in the database could make the limits. Only 3 heavy oil units out of 293 could meet the limits, or 1%. There are no light oil or non continental oil units that can meet all the limits.

The main comments from CIBO included supporting the dioxin/furan work practice, the Gas 1 work practice, and the Gas 2 specifications that could become Gas 1. For solid fuels, the HCl and Hg limits were based on the lowest emitting solid fuel fired boilers. If the limits were split for biomass and coal and set based on units burning 90% coal and 90% biomass, the limits for coal go up and the



limits for biomass go down. This doesn't help much. However, a histogram shows that there are 2 distinct groups of fuel for mercury content. For the chloride, there were more "spikes" in the data. This could result from coal from different regions (such as Illinois coal).

On natural gas curtailment, EPA is still using the word "halted". This still needs work. On oxygen monitoring, more flexibility was requested in the location of the oxygen probe. Also, some ability to adjust the setting for flexibility and safety reasons was requested. For those units with scrubbers, it was requested that the SO<sub>2</sub> CEMs count for Cl compliance. Flexibility on sorbent injection over load was requested. PM CEMs should not be required. The quarterly operating parameter data submission should not be required. The scope of the energy assessment should be further limited. A liquid fuel alternative chloride compliance approached based on water content as in utility MATS.

Earth Justice comments include new subcategories are unlawful, use of surrogates is unlawful, floors are unlawful and arbitrary, work practice standards are unlawful, arbitrary, and capricious, output based standards are unlawful and arbitrary, beyond the floor approach is unlawful and arbitrary, and affirmative defense is unlawful and arbitrary. The American Lung Association and the National Association of Clean Air Administrators have also filed comments against EPA's limits (not stringent enough) and work practice standards (should not be allowed).

On Area Source MACT, the initial tune up requirement was set at 2 years instead of 1 year. However, compliance by March 2013 may still be an issue. The coal emission limit was increased due to correction of EPA errors. The work practice standards, where applicable, were a plus. On CISWI, the limits were not changed in the December proposal. The last proposal was that a unit became a CISWI unit if it burned any solid waste in the prior 6 months.

Comments were submitted to allow a unit to switch back and forth between the boiler and incinerator designation (ie a unit is an incinerator if it burns solid waste and a boiler when it does not). Environmental groups claim that subcategories are illegal, more pollutants should be included, no units should be exempt, and the floor setting and monitoring approaches are unlawful. For the Non Hazardous Secondary Materials rule (definition of solid waste), certain fuels were clarified, specific fuels were designated as fuels, the legitimacy criteria were revised, and the EPA allowed for petition to categorically list a material as a fuel. Environmental groups have commented that scrap tires, resinated wood, pulp and paper sludge, and clean demolition wood should not be designated as fuel.

The current situation, the District Court decided on Jan. 9, 2012 to vacate and remand the stay that was in place. That put the March 2011 rules back into effect. The judge was critical of EPA actions. EPA issued a "No Action Assurance" letter on Feb. 7th explaining that no enforcement action will be taken. EPA will issue a stay under the CAA if needed. They will continue with rule making and schedule for final rules this year. However, states may still require the filing of notification letters. In Congress, a bill was introduced to give EPA more time via a legislative stay. The House bill passed, but the Senate bill fell short of the 60 votes required. At this point, there is still a lot of uncertainty as to what the final rule will be and the final results of the law suits will be.

**Lisa Jaeger**, Bracewell & Guiliani LLP, provided an update on the various litigation activities that are either in abeyance or in play. The District Court vacated the delay notice (the stay) in January. The Circuit Court case is in abeyance, which may dispute the District Court's jurisdiction. The completion case has to do with the issuance of the final rules scheduled for April (but possibly later). EPA stated that it completed its obligations under Section 112. Environmental groups are objecting on the





grounds that EPA did not show how they reduced PCB, POM, and HCB by 90%. EPA will file its brief on March 30th. With regard to the delay notice, the EPA issued the stay at roughly the same time as the proposed rule. The EPA chose to use the Administrative Procedures Act to obtain a longer amount of time and to do so without notice and comment. EPA actually won on those two counts (ie the stay was not a substantive rule and the EPA could use the Administrative Procedures Act). The final count was that the EPA could use the Act subject to judicial review if justice so requires. The Court ruled that EPA had to meet a judicial standard for a stay. This imposed additional standards on EPA. This ruling sets an undesirable precedent. In a case in Michigan, a golf course was issued permits to construct and construction had started. A plaintiff subsequently asked for a rehearing on the permits. By the time the case came before the court, the golf course was completed and a year of operation was already passed. The judge found in favor of the golf course. The plaintiff has asked for an appeal.

NAAQS Update - **Mike Remsberg**, Trinity Consultants, Inc.

**Mike Remsberg** reminded us that the NAAQS are required to be reviewed every 5 years by statute. The Administrator is required to ignore costs in setting the NAAQS. The Administrator has certain discretions in the implementation of the standards. The latest revisions poses risks to existing facilities by modeling requirements either from the source itself, the state, or a nearby source (when that source has to model). New units or plant modifications are at risk when modeling is required. Air quality analyses for PSD permits require modeling. The Nox standard is 100 ppb for 1 hour. The SO<sub>2</sub> standard is similar (75 ppb). The new standards include a 3 year average of either the 98th or 99th percentile of annual distribution of the daily 1 hour maximum. The PM<sub>2.5</sub> is 35 micrograms/m<sup>3</sup> for 24 hours. Background concentrations are often close to the standard level. Significant impact levels are so low that many PSD projects trigger full modeling requirements. The current ozone standard is 75 ppb for 8 hours. Ozone is not modeled directly. On SO<sub>2</sub>, SIPs are due this June. Compliance is due by August of 2017. The SO<sub>2</sub> ambient standard is the lowest in the world (half the EU standard). States are required to define areas as attainment, non-attainment, or unclassifiable. EPA recommends the use of a combination monitoring data and dispersion modeling analyses to demonstrate attainment. At the moment, this is unique to SO<sub>2</sub>. The NO<sub>x</sub> standard will not require modeling. EPA considered the biggest threat to attainment will be urban areas (difficult to monitor). Therefore, more monitors will be put in place. However, the standard represents an 85% decrease from the existing annual standard. Should a facility require modeling, the modeling impacts are complex. SIL levels are so low that nearly all PSD projects trigger full impact modeling. The background concentrations are frequently close to the standard. Intermittent sources have difficulties. The models actually look at NO<sub>2</sub>. The actual ratio of NO to NO<sub>2</sub> may become important as NO is oxidized to NO<sub>2</sub> over time. The models take this into account. The standard assumption is 90% NO. If actual data is available to show that the mixture is more like 95% NO, it will help to lower the calculated NO<sub>2</sub> concentration. With the lower NAAQS, there is less compliance margin. The short time period impacts the accuracy of the model. The model is deterministic and based on the worst 1 hour. Downwash modeling has been changed and is no longer "on/off". For the 1 hour standard, a more detailed weather model is being used (less calm periods, more low wind speeds, more details). Additional modeling requirements may come from Earth Justice issues (adverse impacts on "the poor") or air toxics issues.

Utility Update (CSAPR & MACT) - **William (Bill) Campbell III**, AECOM Environment



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The Utility MACT is now MATS (Mercury and Air Toxics). The MATS rule is in effect. The rule is data driven, technology based regulation. The rule only applies to coal and oil fired units. Gas is not impacted. Biomass comes under Industrial Boiler MACT. The 3 regulated compounds are mercury, chlorides, and particulates. There are two coal sub categories (BTU basis). There are 4 oil subcategories, including non continental oil fired units (ie Hawaii and Puerto Rico). For a unit that burns more than one fuel, there is a 10% threshold (averaged over 3 years). The PM rule is based on filterable particulates. If an SO<sub>2</sub> control system is installed, SO<sub>2</sub> can be a surrogate for acid gases (HCl). If not, HCl is the surrogate. Emissions averaging is allowed for units in the same sub category. Affirmative defense is included for start up, shut down, and malfunction. Work practice standards are included. Law suits are underway. The CSAPR rule is the replacement for CAIR. The rule was supposed to go in effect on Jan. 1, 2012. However, the Courts delayed the rule pending a Court case. The rule is intended to address upwind state emissions causing violations in downwind states (ie Ohio emissions traveling to Connecticut or Massachusetts). The rule reduces SO<sub>2</sub> by an additional 73% and NO<sub>x</sub> by an additional 54%. Twenty eight states are required to reduce both annual SO<sub>2</sub> and NO<sub>x</sub> emissions. EPA implemented a FIP (Federal Implementation Plan) unit! SIPs (State Implementation Plans) can be approved to speed the implementation directed by the Court. Due to the "need for speed", the rule was rushed. Now some states are suing that they didn't get adequate public comment period. Since this is a trading program, EPA has to set the number of allowances. Air modeling was used to determine the "significant contribution" from each major source. A 1% threshold was then used to identify those states that contributed 1% or more to the adjacent state's ambient concentrations. An Integrated Planning Model was used to develop a base case using the years 2004 through 2007 inclusive. From these figures, a "state significant contribution" was determined based upon a cost per ton target. Group 1 was estimated at \$500/ton for 2012 for SO<sub>2</sub>. The figure goes up to \$2300/ton for SO<sub>2</sub> in 2014. For NO<sub>x</sub>, the figure was \$500/ton. Once CSAPR becomes effective, CAIR will no longer be in place. For those industrials that "opted in", it is not clear how these units will be treated. The units are likely in the individual state plans. Thus, states will likely have to deal with how these units will be treated. CSAPR allowances are not available to industrials. Round 2 of this rule is coming in view of the revised NAAQS.

#### GHG Update - **Maxine Dewbury**, The Procter & Gamble Company

One of the problems with the Clean Air Act with regard to GHG emissions is that PSD applies to all regulated pollutants. The threshold is 100/250 ton/yr. If a source is a major source for one pollutant, it is a major source for all pollutants. For CO<sub>2</sub>, the firing rate could be as low as 0.5 MMBTU/hr, which would bring in over 6 million units into Title V permit requirement. These rules are based on "potential to emit" (ie assumed full load for 8760 hours/yr). For most industrial units, actual emissions are much lower than potential to emit. As a result, EPA issued the Tailoring Rule which set the threshold at 100,000 ton/yr. The limit is scheduled to be reduced to 50,000 ton/yr this year. Recently, (March 8), EPA proposed to keep the level at 100,000 ton/yr. However, they have proposed two new programs to "streamline" the regulation. One is GHG PALs (Plant wide Applicability Limits). With the 100,000 ton/yr limit, about 530 new major sources were added to the permit programs. As this number is reduced, about 3,500 additional sources will become major. The "GHG only" concept would allow a facility to be a source that is major only for GHG. An alternative would be for the source to remain a minor source, but have a GHG PAL. All PALs are based on



actual emissions. Another approach would be to provide a federal synthetic minor source authority. States already do this. EPA talks about potential gaps and Indian territories. Other issues include general permits for GHGs and presumptive BACT. PSD permitting is already a problem with the new NAAQS requirements. Adding to this problem with thousands of new sources will serve to make the situation that much worse. Litigation is already underway on these rules. Title V permit applications are due July 1, 2012. Facilities should be reviewing their "potential to emit", which triggers the permit requirements. If possible, try to get a synthetic minor designation.

RCRA Ash - **Gary Merritt**, Inter-Power/AhlCon Partners L.P.

**Administrator Jackson** was asked if a subtitle C rule was off the table (in view of the delay). The answer was, "No!". Environmental groups have submitted a notice of intent to sue. ECOS has stated their concern that a settlement may be reached with only EPA and the eNGOs, with no other input. The American Coal Ash Association has expressed its intent to sue. A House bill, avoiding a subtitle C, has passed. There is a parallel bill in the Senate. Again, 60 votes are needed. Supporters are looking for 10 Democratic Senators to achieve this vote. In a recent case, in Region 4, dust from a coal pile blown by the wind was deemed sufficient to bring the coal pile under RCRA regulations. Gary noted that in a similar case, the adjacent property was purchased to avoid litigation.

Litigation Update - **Lisa Jaeger**, Bracewell & Guiliani LLP

On CSAPR, briefing has been completed and oral argument is scheduled for April 13, 2012. The petitioners claim that the thresholds are arbitrary and imposing unnecessary requirements on states and facilities. EPA has claimed that "control only" would be more costly. This is strange for EPA since cost is not supposed to be a consideration. On the NAAQS, the ozone reconsideration suit was dismissed. The original law suit is going forward. On the SO<sub>2</sub> NAAQS, oral argument is scheduled for May 3, 2012. Both the science and the modeling vs monitoring issues are in play. While the courts typically give great deference to EPA with regard to the science, the question of "who reviews the science" may be considered. In particular, EPA has required modeling over monitoring for compliance. There is also a claim that EPA "cherry picked" data to support their case. There have been no changes to the NSPS cases.

There are 4 cases challenging EPA GHG rules. The endangerment finding, the light duty vehicle rule, and the Tailoring rule are being challenged. In addition, the historic PSD rules are being challenged. Oral arguments were held on Feb. 28 and 29. The arguments on endangerment and the light duty vehicle rule did not really make much impact. The only pressure appeared to be on why 6 GHGs were being regulated from tail pipes and only 4 actual GHGs are emitted from tail pipes. On the Tailoring rule, the Court appeared to be holding to the clear language in the Clean Air Act of 100/250 ton/yr and that the Supreme Court has deemed CO<sub>2</sub> as a pollutant. On the PSD historic rules, the judges pointed out that the law provides that if another interpretation of a statute would avoid the "absurdity", the agency should go with the other interpretation. This means that EPA would have to go back and narrow the interpretation of when PSD is triggered. Since there are no NAAQS for GHGs, there would be no PSD trigger solely due to GHGs. If a facility is already in PSD for other reasons, then a GHG BACT requirement will still be required.



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QA for COMs - **Ann McIver**, Citizens Thermal

**Ann McIver** has pulled together the various comments and suggested that we come to some agreement about what comments we want to submit. The proposed rule would establish QA/QC requirements for continuous opacity monitors (COMs). The compliance time is very short (on the order of a month) and does not allow sufficient time to implement compliance procedures. The rule establishes far reaching applicability without adequate public comment. A number of issues including quarterly audits, 6 month re-certification, excessive zero alignment, and a number of procedural issues have been raised. There is another similar rule coming out for other instrumentation

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

**TUESDAY & WEDNESDAY, June 12-13, 2012**

**Radisson Hotel Reagan National Airport**

**2020 Jefferson Davis Highway**

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