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Environmental, Energy & Technical Committee Meetings

September 10-11, 2013
Radisson Hotel, Reagan National Airport
Arlington, VA
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M I N U T E S

TUES-WED September 10-11, 2013

TECHNICAL FOCUS GROUP SESSION

The Need to Balance Steam and Electric Demand When Making Utilities Investments
Jason Philpott, Eastman Chemical Company
Moderator - **Nate Verhanovitz**, Michigan State University

Presenters included **Zach Platsis** of SSOE, Inc., **Rajesh Dixit** of Johnson Controls, Inc.and **John Hodge** of Black and Veatch Corporation. **Jason Philpott** opened the session by pointing out that plants that utilize cogeneration or combined heat and power were designed for a certain steam load and a certain electric load. Over time these loads may change. As needs change, the decisions that are made for new equipment or new types of equipment, need to take into account the overall balance between steam and electric demand.

Nate Verhanovitz, pointed out that Michigan State University was founded in 1855. They have a coal burning plant that is supplemented with biomass, as well as gas generation capability. All boilers are joined to a common header. There are 4 boilers and 5 steam turbines. There is one gas fired combined cycle plant with a duct fired HRSG. There is a 21 Mw grid tie line with the local utility. The gas turbine provides black start capability. The steam is distributed throughout the campus at 90 psig from turbine extraction. About 2.5 billion pounds of steam are sent annually. The max send out during the winter was 541 kpph. In the summer, there is a 32 thousand ton steam absorption chiller that uses 595 kpph of steam at full capacity. The send out steam load is not constant, either on a monthly or daily basis.

The goal of the system is to save money, reduce environmental impacts, and give the best energy value to the university. Both the demand side and the supply side look to be optimized. However, both electric load and steam load are inherently variable. Overall, the average efficiency runs above 55%, but can be as high as 67%. When the send out steam is somewhat higher, the overall efficiency is increased. On one of the low efficiency days, all of the boilers were in operation, including the HRSG. In this case, all of the boilers were operating at reduced load. Grid purchases can also impact the overall efficiency, as the operators tend to keep the boilers on low load for reliability. Thus, maintaining a high percentage of send out steam, reduced redundancy, and more self-generation seem to be the approach.

Zach Platsis of SSOE, Inc. reported on energy efficiency and assessment processes. The objective of an assessment is to develop an actionable plan to reduce energy usage and cost. The idea is to treat this like a "real project", rather than just a "stack of paper". Assessments can be applied to

buildings, industrial plants, and electric generation facilities. There are a number of different firms that can provide these assessments, but in any case, operations personnel must be involved.

There may be a number of drivers, including cost savings, corporate sustainability, regulatory, recognition programs, incentive programs, and capital improvement programs. Recognition programs include Energy Star, ISO50001, and Superior Energy Performance. The Energy Star Program has data from a number of industries that can be useful for benchmarking a plant in one of those industries. The Superior Energy Performance program is a DOE program that goes beyond ISO 50001. There are also utility incentive programs that reward facilities for energy savings. There is a rider in Ohio that provides funds for other programs. In order to get relief from this program, energy savings have to be demonstrated.

An energy assessment should be treated like any other real project. A planning document with goals and objectives needs to be developed and a project team established. The assessment boundaries need to be identified. Energy only actions need to be identified as compared to capital replacement projects (for old or worn out equipment). A list of energy improvement needs and ideas should be developed. The execution methodologies should be identified (i.e. internal maintenance, capital project, vendor supply, outside engineering firm, etc.). The metrics and types of analysis should be identified. The types of savings that will be allowed in the calculations needs to be specified (ie energy only, maintenance savings, soft cost savings, escalation, etc.). The energy units need to be agreed upon (MMBTU, Kwhr, Joules, therms, etc). The data collection step is the most important step. Early and continued access to relevant energy data is critical. Data from all available meters should be gathered (might discover meters that you didn't know you had). Actual bills should be reviewed. Understand the charge rates for your facility. Benchmarks should be established for the particular products and systems in the assessment. Energy intensity metrics should be agreed upon. A baseline for operations should also be identified. The relevant data collection standards should be identified (ie ASHRAE, ASTM, ASME, etc.).

Maximize the project resources by executing the appropriate level of assessment. A thorough utility data analysis should be done first. Walk through all of the facilities to be assessed. Internal reporting standards should be developed, especially if an external vendor will be utilized. Levels of assessment (from ASHRAE as an example) include a walk through analysis, an energy survey and engineering analysis, and a detailed capital intensive analysis. ASME has standards for process heating, pumps, compressed air, and steam systems. The DOE has a number of assessment tools that are available on line. The DOE also has technology assistance centers for small businesses. Assessment reporting should be standardized so that multiple contractors can be used. The data should be reported in XL spread sheets. Detailed cost estimates will require engineering development.

Once the data has been collected and analyzed, the original goals and metrics should be reviewed. Equipment and systems in need of replacement will creep into projects (as a means of justification or otherwise). If possible, sub metering should always be considered. Metering and communication standards should be developed. Enterprise level reporting should be developed to confirm the savings. Measurement and validation are the key to successful assessment projects.

Rajesh Dixit, Johnson Controls, Inc**.,** reported on chillers for air conditioning and refrigeration purposes. There is a broad range of solutions including absorption chillers and electric compressor based systems. One ton of refrigerant corresponds to 12,000 BTU/hr of heat removal. Single stage

chillers use an electric driven compressor with water as the coolant. A steam turbine or a gas engine can drive the motor for the compressor. Variable steam drives are used for energy efficiency throughout the load range. The chilling system in the Empire State Building was first installed in 1951 with constant speed motors. The system was retrofitted with variable speed drives and saved 30% on energy consumption. Depending upon fuel costs and electric rates, two systems can be used where time of day pricing is in effect (gas during the day and electric at night).

Chillers are being applied as heat pumps in several applications. The main product line of centrifugal chillers has a single compressor with HFC 134A refrigerant. The motor has variable speed drives. Condenser water as low as 55 F can be utilized. Two motors and two compressors in parallel provide additional capacity. When compressors are used in series, a two stage system is deployed, which is more efficient. The unit can utilize air cooled condensers. The variable speed drives and steam turbine drives offer good efficiency with variable flow. Chillers can also chill air that is used in a gas turbine combined cycle. The chilled air can overcome some of the problems with gas turbines on a hot day.

Absorption chillers do not use a compressor or motor. Instead, there are 4 heat exchangers with small pumps. For a compressor driven system, roughly 50 Kw are needed to produce 100 tons of refrigerant. The absorption chiller uses waste heat or steam to drive the system. Only about 5 Kw are needed to produce 100 tons of refrigerant. Water is the working fluid. There are restrictions on absorption chillers due to the use of water. Two stage absorption chillers utilize either higher pressure steam or a clean fuel (gas or light oil) as the heat source. These systems can be used as a chiller in the summer and a heater in the winter (hot water up to 180 F). For gas fired units, 9 ppm NOx gas burners are available. Turndown is at least 10/1.

Chiller technology is available to match primer movers such as gas turbines and engines. Exhaust gas temperatures vary from 180 F to 800 F. For combined heat and power, a high load factor is desirable for both steam and electric load. Thermal loads need to be addressed first. Once these are established, the electric production can be designed. The thermal to electric ratio needs to be optimized. These systems are not generally applicable to buildings over 100,000 sq ft. Each system has a thermal to electric ratio (ie refrigerant load to electric load.

Care needs to be taken in using coefficient of performance (COP). A site COP and a source COP needs to be evaluated. The source COP reflects the losses in the electric generation and grid system (about 73%). Solar cogeneration utilizes solar energy as the source of energy. Photovoltaic cells utilize only 10 – 15% of the incoming energy. Rather than use a flat panel PV system, a parabolic reflector directs solar energy onto the PV cells, but with a heat exchanger behind the cells. This produces 200F water that can run an absorption chiller. These systems are applicable in areas with plenty of sunshine and time of day pricing. An organic rankine cycle can also be used for electric generation. This allows lower temperature heat sources to drive electric generation. The waste heat then runs the chiller. Geothermal sources can be used with this type of system. The efficiency is low due to the low temperature heat source.

John Hodge of Black & Veatch Corporation reported on balancing steam and electric demands with combined heat and power. Thermal efficiency in power generation directly impacts fuel costs. The Black &Veatch Corporation recently built a 200 Mw coal plant and an 800 Mw combined cycle plant. The coal plant was a subcritical boiler at 2600 psig and 1055 F. The heat rate was 9884 BTU/Kwhr, or 34%. The combined cycle plant has a triple pressure boiler with 55% efficiency (HHV). Never the

less, the fuel cost for generation is 2.2 cents/Kwhr for the coal plant and 2.8 cents/Kwhr for the gas plant. However, the coal plant also has operating costs for the ash, scrubber, SCR, and mercury collection systems.

A single gas turbine with 19.1 Mw net output has a heat rate of 10,550 BTU/Kwhr, or 32% efficiency. This size unit is typical for a college campus. Fuel cost for this plant would be 4.8 cents/Kwhr. With the addition of an HRSG, an additional 157 kpph of steam flow can be generated with duct firing. Steam at 915 psig and 835 F can be generated. By coupling this steam flow to a back pressure turbine, an additional 8 Mw can be generated. Now the heat rate improves to 9755 BTU/Kwhr (unfired) and the fuel cost drops to 4.4 cents/Kwhr. If no additional fuel is fired, the "cost" of the fuel is free. On the other hand, there are load demands for steam, and so a value needs to be placed on the steam.

Without the cogenerator, the alternative steam source would be a gas fired boiler with 80% boiler efficiency. This might cost $5.70/1000 lbs steam. In the summer, cooling would be used to provide steam load. A one stage absorption chiller takes 18 lb steam/ton hr. The two stage system uses 9.7 lb/ton hr. The steam turbine drive also uses 9.7 lb/ton hr. With duct firing, additional generation can be obtained for both electric and steam load. In this case, the heat rate goes up to 11,840 BTU/hr because the fuel used to fire the HRSG is not utilized by the system in combined cycle mode. Now, the fuel cost of production would be 5.3 cents/Kwhr. If the electricity is priced at the combined cycle cost of 4.4 cents/Kwhr, the steam flow would be priced a little higher. The fuel cost for the steam would have been over $1 million. The savings would amount to 1.5 million annually.

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

Bob Bessette, CIBO, gave the anti-trust admonition. **Bob Corbin,** CIBO Member Services Consultant, introduced the guests at today's meeting. The usual "around the table" introductions were carried out.

Industrial Energy Efficiency – **Patricia (Patty) Garland,** DOE EERE

DOE has several programs to support the President's Executive Order to accelerate investments in industrial energy efficiency. The Order set a goal of 40 Gw of new combined heat and power installation over the next decade. Both DOE and EPA are to convene stakeholder meetings through ongoing regional workshops. Participation in the Better Buildings, Better Plants program is encouraged. A DOE document on CHP was issued in 2012 stating that increasing CHP would save 1 quadrillion BTU with the equivalent CO2 reductions of 1.5 million tons per year. The Regional Clean Energy Application Centers provide market assessments, education and outreach, and technical assistance. There are also State and Local Action Networks (SEE Action). There are 8 working groups, one of which covers CHP. A guide has been prepared concerning policies for standby rates, interconnection standards, excess power sales, and clean energy program standards.

The DOE is providing Boiler MACT Technical assistance, promoting CHP as a compliance strategy. Only coal or oil fired units were contacted initially. Of the 370 companies that were contacted some 80 felt that they were already in compliance. Around 62 companies are no longer in businesses. Technical assistance has been provided to 55 sites that showed interest in CHP. DOE is working on

a report to Congress required by law to provide information on barriers to efficiency and CHP by Dec. 2014. Legal, economic, and regulatory barriers in 10 key areas must be addressed. Examples of policies that have been successful will be identified. Economic benefits are to be estimated on the impact of a potential $5 billion of matching grants for energy efficiency programs. The estimated energy savings from increased use of recycled materials in energy intensive industries should be identified. CIBO has joined the stakeholder group. DOE has issued 2 reports and a copy of a webinar on CHP topics that are available on the internet.

MIT Energy Efficiency Study – **KVS Vinay,** MIT and **Nick Ryan**, Harvard

KVS Vinay is the Program Director about the new Industrial Energy Efficiency program at MIT. This is a joint program between MIT and UC Berkeley. They would like to run field studies with partners (including CIBO and CIBO members) to generate and disseminate "gold standard evidence" on the economic returns to energy efficiency. The McKinsey study on the cost abatement curve for CO2 indicated that there were a number of energy savings that were potentially available, but, perhaps, not utilized. The MIT study would like to identify the causes for some of this "under-utilization". Both consumer and industrial sectors will be covered. Current projects include home insulation in Michigan, fuel economy in the US, schools in California, and factories in India. Randomized controlled trials will be used to both measure the returns and some of the impacts of these programs. **Nick Ryan** of Harvard pointed out that more and less efficient plants differ in thousands of ways.

In general, it is very difficult to say that one plant is more efficient than another plant due to any one technology or policy.

The goal is to attempt to make such causal statements with solid, factual results. The equivalent of a "level 2" energy audit was carried out on over 200 interested plants out of 400 plants in the baseline survey. Of the 200, additional training and follow up has been provided. Now the follow up results are being evaluated. The plants show a significant amount of variation in energy bills. Most of the units were in the textile industry. Some additional details on boiler efficiency or motor efficiency were also obtained. Some barriers include lack of information, lack of skill, cheap labor, and lack of capital. The survey covered the economic and technical aspects of efficiency. Early results, based on a partial review of 230 plants, indicate that plants that take action do invest somewhat more than the control plants in equipment and maintenance upgrades. Plants that take action use more energy than the control plants. These plants also use more electricity. Thus, plants that become more efficient tended to benefit from the improvements and subsequently used more energy to expand their production and actually more energy was used.

This kind of "template" could be used for CIBO members. The heterogeneity of energy efficiency is not unique to India. Issues that might be of interest include the incentive structure, the investment characteristics, the market characteristics, and the utility or process interactions.

Natural Gas Conversion Tax Considerations – **John Gimigliano,** KPMG

John Gimigliano of KPMG was on the tax writing committee in Congress, where the tax code is used to drive energy policies. The paper industry has been looking at Boiler MACT and fuel switching. The EPA has made a big bet on natural gas and is hoping that many coal fired boilers will switch to natural gas. There are tax consequences that come into play with fuel switching.

If the new fuel is biomass, there is a 30% investment tax credit as well as accelerated cost recovery. However, there is a year-end deadline for these incentives. There may be state incentives as well. There are also gas interconnection tax costs. Converting from coal to natural gas entails additional tax costs. Besides the cost of the new boiler and associated plant modifications, there are the costs of extending the gas pipeline to the plant. In tax language, there is a "contribution in aid of construction" (CIAC) tax payment (40%). If a company pays the gas company for the cost of the pipeline it gets a "gross up" for the additional tax cost, which counts as additional income. In the case of a package boiler project, the cost of the package boiler project was $20 million. The gas pipeline was an additional $12 million. The CIAC was $8 million. This doubles the cost of the project. There may be possible solutions in terms of tax treatment. However, most gas utilities will still want to charge the cost and then rebate the cost if the IRS agrees. Another approach would be to have EPA and the Treasury come up with an exception at the request of CIBO and/or other organizations. This type of approach was put forth for the interconnection directed by FERC (a safe harbor provision) and the guidance for the "smart grid" grants (exempt from tax). In the latter case, the DOE and EEI worked with Treasury and the IRS.

Institute for Industrial Productivity – **Bruce Hedman,** Institute for Industrial Productivity

The Institute for Industrial Productivity looks to reduce GHG emissions via energy efficiency improvements in US industry by providing best practices, technologies, and tools to advance industrial productivity. The idea is to bridge the gap between government policy and industrial implementation. There are offices in India, China, and the US. There are databases with best practices for the several major industrial energy users. There are also financial and technology databases. China is now the largest CO2 emitter, but has done a number of things including the implementation of energy management systems for the top 10,000 enterprises. In India, the group is trying to accelerate the deployment of alternate fuels for cement kilns. In the US, roughly 60% of kilns use alternate fuels. In India, only one percent do so. In the US, decision tools, energy measures, and combined heat and power are the focus of activities. The DOE tools were used to look at 804 plant assessments, which identified energy savings of 153.3 trillion BTU/yr. About 20 – 25% of these plants actually implemented some of the recommendations. DOE has developed over 40 tools. The IIP is looking to re-evaluate these tools and take over the administration of these tools' implementation and use. The Institute would like CIBO to provide input to the usefulness and the availability of these tools.

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

The minutes from the last meeting were approved as written.

BMACT Slate of Rules
John C. deRuyter, E.I. DuPont de Nemours & Co.
Jason Philpott, Eastman Chemical Company

Jason Philpott, Eastman Chemical Company, reported on fuel analysis as compliance strategy.

Fuel analysis is one of the requirements in the Boiler Area Source and the Boiler MACT rule. It can also be used as an alternative to stack testing if statistical analysis of the data shows the data meets the emission limits, with a 90th percentile confidence limit. The information in this presentation focuses on the Boiler MACT requirements. The area source rule has slightly different requirements. Requirements in both rules include fuel analysis plans, initial compliance, and continuous compliance. The first step in any compliance plan is to know the fuel. Out of 300 samples, nearly 100 samples were at the non-detect levels. There were a large number of samples that would have met compliance. There were on the order of 50 samples that spiked way up. Coal is variable.

In table 6 of the Boiler MACT rule, there are methods for sampling fuel from various sources (coal belt, truck, coal pile, etc.). If one of these methods is used, a plan must be developed but not submitted. If an alternate method is used, the plan must be submitted and approved. During a performance test, 3 samples have to be taken separated by an hour. For basic samples, the separation must be 10 days. Thus, the compliance limit for chloride value is 0.022 lb/MMBTU. The compliance requirement can be demonstrated with a performance test or by fuel analysis. If a single fuel type is used (ie just coal) and the source is complying via performance testing, a fuel analysis is not required during the performance test. If multiple fuels are used, the test must use the combination of fuel types that give the highest chlorine, mercury, or TSM and all fuels fired during the test must be sampled and analyzed. Thus, during a test, if a unit can burn coal, used oil, and gas 1 fuel, but the two secondary types have essentially no chlorine or mercury, for the test, only coal will be burned during the test and therefore no fuel analysis is required since during performance testing only a single fuel was fired

In cases where one fuel is high in chlorine and low in mercury and another fuel is low in chlorine and high in mercury, it may be difficult to find the "worst case" fuel. With multiple fuels, the average chlorine (or mercury or TSM), of the fuel input becomes the limit for the rest of the year. You cannot burn a fuel mix that would have a higher chlorine (or mercury or TSM) content than the mix that was burned during the performance test. Thus, it may be an advantage to spike the fuel for the test, particularly if some reduction technology is being used. If the initial compliance will be determined by fuel analysis, the 90th percentile confidence level of the fuel pollutant concentration must be used. P90 is equal to the mean plus the standard deviation times the "t" value (from the student "t" test). Thus, the same fuel that looked like it was in compliance will now be out of compliance.

Once the initial compliance has been demonstrated, continuous compliance takes over. Continuous Compliance performance testing requires that the facility ensures that all fuel types and mixtures would result in lower fuel input of Cl, Hg, or TSM than that burned during the performance test. The facility is responsible for knowing the Cl, Hg, or TSM of the fuels before the performance test is done so that they can pick the worst case. For continuous compliance by fuel analysis, sampling should be done with a 10 day interval as required by monthly sampling. If there are 12 consecutive months with compliance less than 75% of the standard, then the sampling is quarterly. For the monthly compliance, the arithmetic average is used. There is also a twelve month rolling average. While the rule states that a unit that burns only one type of fuel does not have to provide a fuel analysis during the performance test, a state can still require a fuel analysis if it so chooses.

John C. deRuyter, E.I. DuPont de Nemours & Co., covered the reconsideration issues. EPA requested comments for specific issues. On start up and shut down, the EPA looked at utility data for a number of types of units. EPA plotted the number of failed starts vs the hours of fossil fuel combustion. They also looked at cold, warm, and hot starts. They also looked at various types of

pollution control equipment, including CFB boilers. CIBO provided comments because some members have units that would be considered EGUs. EPA also indicated that the MATS rule might set a precedent for industrial boilers. Flexibility is critical.

The best approach is a unit by unit designation. Lacking such an approach, the combination of load and time could be a viable approach if enough time is allowed. There was also a question of whether some of the types of units were truly represented. Waste coal units were definitely under represented. This is important due to the time it takes to stabilize the bed for these types of units. There will still need to be unit specific procedures to define the minimum stable operating load conditions. Clean fuels should be those already recognized in Subpart DDDDD. Biodiesel and other renewable fuels should be included. The need for co-firing of gas should be recognized. Some types of APC equipment can start up before others. Certain types of monitoring may not be applicable during start up.

For coal units that convert to gas that have Part 75 CEM issues, units do not become gas fired units until they have 720 hours on gas. Thus, for the first 720 hours, the CEM system has to be treated as if it were firing coal. A petition for exemption of the rule was denied. The flow monitor in the stack would still have to be operated. There is a possibility of Part 76 L but this is time consuming.

Additional items of potential concern could include solid fuel emissions controls, test schedule, boiler performance, sorbent availability, burner availability, craft labor, and replacement boiler availability. Permit schedule may be an issue as well.

Litigation and Reconsideration for BMACT Suite of Rules
Lisa M. Jaeger, Bracewell & Giuliani, LLP

The startup and shutdown issues keep coming up as EPA bounces back and forth between the BMACT rule and the MATS rule in trying to get it right. The SU/SD issues are currently in abeyance relative to the litigation. In all likelihood, there will be litigation again once the "final" SU/SD rules are issued. There are still 4 cases at the DC Circuit Court: BMACT, Area Source, CISWI, and NHSM. In the last two cases, CIBO is only an intervenor for EPA to support the gains that were made. EPA has agreed to reconsider the startup/shutdown issue, the revised 130 ppm CO limit, and the CPMS requirement to certify operating parameters. On top of these reconsideration issues, there are reclarification issues. These will be "fixed" during the reconsideration process. Most of these were industry concerns.

Industry issues in the BMACT case include the energy assessment, the CO issues other than the numerical limit, the operating limits based on performance tests, the 10% penalty for emissions averaging, no health based emission limit, shifting between MACT and CISWI, and "Gas I" does not allow for less than 10% liquid fuel. The Sierra Club has a significant number of issues including subcategories, standards for PCBs (and other organics), floors, the standards themselves, affirmative defense, and full provisions at all times.

Under Area Source, the reconsideration issues include the definition of startup, the new monitoring provisions, the limited use sub category, PM performance testing, and relaxed requirements for certain units. The industry issues include the energy assessment and startup/shutdown. The Sierra Club has a long list of issues similar in nature to the Major Source issues including work practice standards, GACT, and exemption from Title V.

On CISWI, EPA will reconsider the definition of CEMS during SU/SD and the PM limit for burning waste. There are no reconsideration issues for the waste definition because that is not an air issue. The industry issues for CISWI include the no records equals CISWI status, SO2 limits for biomass, inconsistency with standards, no provision for inadvertent burning of waste, emissions averaging, and subcategories. The solid waste rule includes materials that are non-wastes, transfer to 3rd party, sewage sludge equals a solid waste, and discarded tires. The Sierra Club has a substantial number of objections for both the CISWI rules and the NHSM rules. In both cases, we are in support of EPA. In a related case, the sewage sludge incinerator MACT decision, the floors, the use of non-detect data, and several other limitations were upheld. Additional clarification on the upper probability levels was requested of EPA.

There are 2 utility cases: MATS and NSPS. While some of the issues in these cases are of interest to us, a decision is unlikely before next March. That will likely mean that the briefs for our issues will likely be done in BMACT. With the 4 cases that would be staggered by a month to be prepared, it is not likely that the briefs will be done in June 2014. That would mean that at the earliest, we might have a decision at the end of 2014. There has been a request to have only one panel. This would likely mean that the timing would take longer. There is one other MACT case for Portland Cement that has the affirmative defense issue.

Coal Ash Update – **Gary Merritt,** Inter-Power/AhlCon Partners, L.P.

The House bill was passed with bipartisan support. The bill is now sent to the Senate. A similar bill is being worked on in the Senate. However, Senator Boxer has come out against the concept indicating nothing would get through her committee. The Effluent Limitation Guidelines are aimed at utilities. However, states tend to regulate discharges regardless of source. Comments are due in September. The State of North Carolina filed two law suits against Duke for violations related to 12 of their facilities, most of which were impoundments. Of the 12, 7 were at sites that were closed. On a different front, a suit was been filed under the Clean Water Act in the Pacific Northwest for coal blowing off a coal car and getting into a stream. This type of action opens the door to coal blowing off barges. The claim is a toxic discharge.

NAAQS Update – **Ryan Gesser** , Environmental Resource Management

The fine particulate PM2.5 standard was reduced from 15 microgram/m3 was reduced to 12. The background level ranges from 9 – 12 microgm/m3, which makes permitting much more difficult. There is legal action on this standard. New guidance on modeling for PM2.5 is anticipated by the end of the year. This version is expected to consider secondary PM2.5 emissions (ie SO2, NOx, and NH3). There is a potential for double counting as aerosols (ie condensable acid gases) are already reported as PM2.5.

The ozone standard is up for review. A proposal is due out soon. The current legal activity is around the schedule. The SO2 NAAQS had their designations earlier this year. EPA considers SO2 to be more of a "hot spot" issue rather than a larger regional issue. As a result, EPA has been working with states to identify sources and require local modeling. Another approach is a data requirements rule. This rule might include an emissions threshold coupled with population. Once this rule is finalized, the monitoring or modeling requirements would be set.

On the NO2 standard, the modeling continues to be a challenge. The ratio of NO to NO2 that is input to the model is now becoming important.

GHG Update
Maxine Dewbury, The Procter & Gamble Company
Carl Bozzuto, ALSTOM Power, Inc.

Maxine Dewbury, The Procter & Gamble Company, pointed out that GHG BACT determinations are getting tougher. It is important to carefully define the scope of the project. Also, there is a need to discuss CCS availability in the various steps. EPA scrutiny varies by type of project. The courts vacated the biomass deferral. This action puts some doubts on projects that went forward based on the deferral. EPA was supposed to come out with a rule for biomass by the middle of next year. The California GHG cap and trade went into effect in January. The President's Climate Action Plan calls for an EPA proposal by Sept. 20th on GHG emissions. Another issue has been requests for the Social Cost of Carbon. There has been no review process for this.

API and NAM have petitioned EPA to withdraw the social cost of carbon guidance until it has gone through a formal review process. With regard to GHG reporting, an electronic tool is available that could accept data to calculate GHG emissions and create a summary of results. The summary would go to EPA, but not the sensitive business data. The input data would not be stored. **Carl Bozzuto**, ALSTOM Power, Inc. reviewed the highlights from the President's climate speech. Impacts include new rules for GHG emissions, more renewables targets, requirements for federal agencies, more international agencies, restrictions on World Bank and Exim Bank financing of coal plants, and a Quadrennial Energy Review.

Regulatory and Litigation Update – **Lisa Jaeger**, Bracewell & Giuliani, LLP

The ozone NAAQS case was the challenge of the 75 ppb standard. One of the issues was that the primary and secondary standards were the same. The other issue was that the Advisory Committee had recommended 70 ppb or less and EPA used 75 ppb. There was a decision on July 23rd. The EPA figure of 75 ppb was upheld. The decision was "per curiam", meaning that there was no dissenting decision. The secondary standard was remanded for explanation. The parties filed for rehearing. Due to the "per curiam" decision, it is unlikely that the case will be reheard.

On the 2013 ozone NAAQS, the environmentalists have filed to force EPA to a deadline and to change the standard. This is a dangerous precedent because EPA has to establish the science that would be needed to justify a change in the standard. An industry coalition has intervened. EPA and the Sierra Club have opposed the intervention.

The PM NAAQS case at the present time has only industry issues, which challenges the science and analysis done by EPA. The industry brief was filed in August.

The CSAPR rule was to replace the CAIR rule. The CSAPR rule was vacated. Based upon the arguments of a dissenting judge, the EPA has taken the appeal to the Supreme Court. EPA filed a "merits brief" in September. A decision could be forthcoming by June 2014. The issues were jurisdictional and "significant contribution" (ie a state's contribution to regional downwind concentrations). There are two cases that involve GHG SIPs. The states were challenging EPA's requirements for including GHGs. Both cases were dismissed for lack of jurisdiction.

In an affirmative defense case on start up, shut down, and malfunction (SSM), the Texas SIP included "excursions during maintenance". EPA denied this approach. Industry objected and filed suit in the 5th Circuit Court. The Court sided with EPA. The coalition has pursued to the Supreme Court.

On Coal Ash, and environmental group sued EPA over schedule on issuing a proposed rule. The case has been delayed a number of times. A status hearing is now scheduled for Oct.11th. For the water intake rule (316 b), the final rule deadline has been extended to November. For GHGs, the new proposal has been set for Sept.20th. Regulatory actions include DOE IEE Comments, DOE Social Cost of Carbon Comments, and Effluent Limitation Guidelines Comments (due Sept. 20th).

Rule 316 b – **Ann McIver,** Citizens Thermal

The intake water rule has been coming since 1993. The last set of rules was vacated in 2010. The 316 b rule was proposed in March 2011. A final rule was supposed to have been issued in 2012. EPA subsequently carried out a study on mortality due to impingement and entrainment and a study on "willingness to pay". The last settlement agreement required EPA to post on their web site that they are seeking advice from Marine Fish and Wildlife Service with regard to the Endangered Species Act. This rule covers water used for once through cooling.

Section 316 a covers thermal discharge. Heat is a pollutant under the Clean Water Act. **Robin Ridgway** of Purdue University noted that cooling tower discharge is another major issue. States are looking at "126 priority chemicals" in discharge permits (including elements that might leach out of the cooling tower itself). Also, there has been a change on what constitutes "lead free" relative to drinking water in commercial, industrial, and residential buildings.

Government Affairs - **Anthony Reed**, Archer Daniels Midland Company

We do now have an official EPA Administrator (**Gina McCarthy**). There is an official nominee for the Air Office. As of this week, there are 9 legislative weeks left in this Congress. During that time, a government budget and a debt ceiling will need to be resolved. There are also sequestering issues and other problems that Congress must address. There is not likely to be an energy bill. We would like to get a letter from the Hill to support some of the issues that are under reconsideration in the Boiler MACT rule. The House is holding a "mega hearing" next week on the President's Climate Policy. The request has gone to the heads of all federal agencies to report on anything and everything the agencies are doing with regard to climate activities.

Next Technical Focus Group/Environmental & Energy Committee Meetings
TUESDAY & WEDNESDAY, December 3-4, 2013
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2020 Jefferson Davis Highway
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