



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

Environmental, Energy & Technical Committee Meetings

September 16-17, 2008
Radisson Hotel, Reagan
National Airport
Arlington, VA
(703) 920-8600

MINUTES

TUES-WED September 16-17, 2008

CIBO SEPTEMBER 2008 COMMITTEE MEETINGS

Introductions, **Bob Bessette**, Council of Industrial Boiler Owners & **Bob Corbin**, CIBO Consultant

Bob Bessette gave the anti-trust admonition. Bob Corbin introduced new member Michael Acree of Combustion Components Associates. Debra Lane is now with Rayonier and is a prospective member. Mike Turner and Marcus Neal of Perdue Agribusiness are also prospective members. Ann Curnow is now with HDR Engineering along with David Johnson and are prospective members. The usual round the table introductions were made. The minutes of the last meeting were approved as written.

ENVIRONMENTAL COMMITTEE SESSION

Maxine D. Dewbury, The Procter & Gamble Company, *Environmental Committee Chairman*
Ann McIver, Citizens Thermal Energy, *Environmental Committee Vice-Chairman*

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

Section 114 information requests have been sent out. The survey is somewhat different from what was reviewed earlier. A number of questions have been raised. On the EPA web site, there is now a FAQ section that attempts to answer a number of these questions. CIBO sent in some questions. Responses were passed out at the meeting. Any further questions should be sent to Bob for response from EPA. AF&PA held a webinar on the topic where some 60 questions were asked of EPA. Responses were tabulated and sent to EPA for clarification. Several sites did not get letters due to some processing errors. Some letters went out, but the real site could not be identified. A list was distributed by EPA as to where letters were sent. An updated status as to corrections and receipts was suggested. If a site did not get a letter, there is no obligation to submit data, although EPA indicated that they would accept such data. The tracking number needs to be supplied for those that received letters. The web site is <http://survey.erg.com/ss/wsb.dll/s/7g8d>. Other questions related to good operating practice frequency resulted in some confusion. Answering "daily" seemed to be the right approach.

Bob Bessette showed the theoretical curves for combustion efficiency, NO_x, and CO vs excess air. There is an excess air level for peak efficiency where higher levels of oxygen increase the NO_x and decrease efficiency, while CO is decreased. These curves need to be described narratively and



included in the CIBO NACAA response. It is important to include any available information like this in responses to the EPA survey.

Additional considerations on Boiler MACT include the definition of solid waste, the rule making time line, EPA guidance, and the 112(j) approval from OMB. In addition, NACAA responses for legal, technical, and deployment need to be finalized.

The EPA team working on the definition of solid waste has experienced some turnover. A new team is in place. They plan to issue a notice of advanced rule making to get public comment on the issue. As EPA needs the definition of solid waste to determine which units need to be tested, there is pressure to get this notice out to the public.

A further complication is the area source MACT deadline. Another extension to mid November has been proposed. Earth Justice has to sign off on the time line proposed by EPA. This extension takes some pressure off the timing for the notice of advanced rule making. Lisa Jaeger pointed out that EPA can accept technical data at any time. There is no reason why the efficiency/CO/NOx curves cannot be sent to EPA with an appropriate explanation and get this information into the record so that EPA can construct their test requirements appropriately. Lisa proposed that we "de-NACAAitize" our responses to make them more general so that members could use them in the event that states propose any activity. The technical response could be fleshed out and sent to EPA.

AF&PA identified some inconsistencies in the NACAA data for the paper industry. Sharing some of this data might lead to some analysis of some of the other units in the list. Lisa will request some of this information from some of the industry groups. This would be a more positive way to bring out our points.

Adding further to the debate, the environmental activists are claiming that Sections 112 (g) and (j) are self executing. Under this interpretation, the States can take action without EPA approval. EPA can't act on its own in imposing a burden on a regulated community. The EPA has to get approval from OMB. The fact that EPA went to OMB seems to indicate that EPA does not feel that the Sections 112 (g) and (j) are self implementing. However, a new administration could interpret the statute differently. For that matter, the state could interpret the statute differently.

GHG Regulation - **Rob Kaufmann**, Georgia-Pacific LLC

Rob pointed out that the advanced notice of proposed rule making on regulating greenhouse gases under the Clean Air Act represents EPA's best thinking on this subject. The EPA identified several authorities under the CAA. The Courts directed the EPA to provide some reasonable explanation as to why it cannot or will not exercise its discretion as to why it will not carry out an endangerment finding on greenhouse gases. In 2007, the President proposed a "20 in 10" program which would have provided a 20% reduction in gasoline use in 10 years. The "20 in 10" program was superseded by the Energy Independence & Security Act of 2007. However, EPA was nearing completion of draft regulations, including a GHG "endangerment finding". Controversy ensued. As a result, the Advance Notice of Proposed Rulemaking (ANPR) was issued.

This topic represented one of the biggest issues on EPA's future agenda. Tensions within EPA as well as OMB and the White House and other Federal Agencies resulted in a number of reactions. The EPA Administrator stated that none of the views in ANPR represent Agency recommendations. OMB, CEA, CEQ, and a number of other agencies commented negatively on the ANPR as being overly



burdensome and not necessarily resulting in any real benefits. Electric generation provides 33.7% of the CO₂ emission while industry provides 19.4%. Technology options include efficiency improvements and biomass fuels, as well as carbon capture and sequestration. Climate change can influence traditional pollutants and vice versa.

Many large emitters are already regulated under the CAA. Some GHG controls have co-benefits, while some have dis-benefits. There is a concern about technology lock-in. In applying the CAA to GHGs, there are some significant issues. One is the mandatory thresholds, which could bring large houses under regulation. Serious concerns include leakage, enforceability, administrative feasibility, and unintended consequences. In order to regulate, EPA would have to make an endangerment finding. If such a finding was made, it would be difficult to "wall off" the finding to a particular section. Likewise, an endangerment finding would trigger the PSD program.

Options for regulations include the NAAQS. This would require an endangerment finding from diverse and numerous mobile and stationary sources. There was no air quality criteria before 1970. Air quality criteria encompassing any and all health benefits would have to be established. Standards would have to be set (with the advice of CASAC). Standards would be reviewed every 5 years. Since the gases are well mixed, the whole country would be either in attainment or non attainment. There would be SIP requirements. There would have to be a compliance schedule. Sanctions would have to be defined.

The MACT section could be invoked with review every 8 years. Now nearly every source category would have to be created. A MACT floor would be an interesting exercise. Covered sources would be exempt from PSD or NSPS. Section 129 could be applied for units burning solid waste and emitting GHGs could be a source, but not likely.

Section 111 (NSPS) for stationary sources appears to be the most likely authority. This would require an endangerment finding. Cost considerations are allowed. Best demonstrated technologies to be used. GHGs and sources can be selected. This section has more flexibility. Size cut offs are allowed. There is a potential for a declining standard. A technology waiver could be applied for. The basic negative is that NSPS would trigger NSR/PSD. Industrial boilers were identified as potential sources since there are 45,000 units larger than 10 MMBTU/hr leading to nearly 20% of the CO₂ emissions. Efficiency improvements, process improvements, and fuel switching are potential control technologies without having to resort to CO₂ capture technologies. Improved control systems, feed water and condenser improvements, improved fans/pumps, and improved fuel moisture are potential areas for improvement.

Bench marking, appropriate metrics, cost considerations, and cogeneration are potential NSPS issues. Questions for GHG applications include raising major thresholds (emissions scaling), higher significance levels, phased in PSD, grand fathered units, and raising size limits are raised. What level would be considered BACT (or LAER)? Permit burdens would increase drastically. Thousands of new permits would be required each year. Title V permits would increase to over 500,000/yr. Permit fees are usually in \$/ton. The tons of CO₂ are enormous. Cap and trade programs, rate based emissions credit programs, fee programs, and hybrid programs are all potential approaches to a regulation.

Basically, this is a big mess. Congress is holding hearings and setting the agenda for the debate in the next administration. Whether Congress can come together to provide legislation that would amend the CAA and create a separate set of laws for GHGs is yet to be seen. States, however, are moving ahead with various programs. EPA is rumored to be working on a notice of proposed rule



making for next year. It might be helpful to provide information about why EPA should not have to file an endangerment finding.

It is likely that CIBO will file comments. The CAA is not a good platform for regulating GHGs nor was it ever the intent of the CAA to regulate GHGs "A no regrets" type of strategy would be the most efficient for the nation (efficiency, biofuels, etc.). Longer run actions should await appropriate technological development. If further reductions are deemed necessary, legislative action should be taken which would amend the CAA and provide a separate set of laws for GHGs. Lisa pointed out that there are two constitutional arguments that would support the EPA not issuing an endangerment finding. The first is that other agencies are involved in the requirements that would be needed for GHG regulation under the CAA. This could be a separation of powers issue. Further, with the national level of the scope of the problem, EPA does not have authority to craft a national policy. Only Congress had that authority. John requested an outline of comments. The outline would be circulated to the membership. The outline would also be sent to potential organizations that could support us. From there, a draft would be prepared in time to submit comments to EPA. A rough draft would be required in time for the annual meeting.

Rob summarized the regional and state greenhouse gas initiatives. The most active is the RGGI in the northeast. There is also the Western Climate Initiative and the Midwest State Governors Association. Several states including California also have programs.

RGGI has the first mandatory cap and trade program for CO₂. The goal is a 10% reduction in CO₂ only from a 2009 baseline by 2018. The program is aimed at utilities, but cogen plants could be included. The program favors auctions of allowances. The first auction will be held on Sept. 25th. The minimum price will be \$1.86/ton. A pre-auction market developed with a price level of \$5 - 8/ton. However, the allowance base was calculated on 2005 and emissions have decreased since then. Thus, there is a fear of over allocating allowances. There are early reduction credits, banking, price triggers, and offsets. There is an annual true up and a 3 year compliance true up. There is no borrowing.

The Western Climate Initiative was launched in Feb. 2007. A number of Western States and Canadian provinces are members. Some Mexican states are observers. The goal is a 15% reduction in CO₂ equivalent below a 2005 baseline by 2020. The program launch is Jan. 1, 2012. It was pointed out that Ontario has joined the Western Climate Initiative and RGGI, as well as the Mid-west Governors Association. The Western Initiative applies to electric generation, industrial/commercial/combustion, industrial processes, and residential/commercial/industrial fuel combustion for small units, and transportation. The de minimus level is 10,000 tonnes/yr. There is a 3 year compliance period with an annual cap. Auctions vs free allowances are under discussion. There is credit for early reductions. There is unlimited banking, but no borrowing. There is a rigorous offset program with a potential 10% limit.

The Mid-west Governors Association is less far along. They are looking at a program like the Western Climate Initiative. Details are expected this fall. In addition, to the cap and trade system, there are a number of other initiatives being proposed including a low carbon fuel standard, a renewable fuel standard, CCS, advanced coal and natural gas technology, integration of wind energy, biofuels, regional electric transmission and energy delivery, and maximum investment in energy efficiency.

California was ahead of everyone else, making them the leader on climate action. Components of a California cap and trade system are moving forward but not without controversy. A phased in auction program is being contemplated. Additional considerations include a low carbon standard, an increase



in RPS to 33%, restrictions on land use GHGs, delayed offset standards, and mandatory reporting. Oregon and Washington were originally looking at their own program, but have joined the Western Initiative.

They have mandatory reporting, low carbon fuel standards, RPS, and a focus on energy efficiency. Florida has a new, massive energy plan as of this summer. This includes a cap and trade program initially focused on utilities. There are many other elements similar to other states. The stakeholders are unanimous that Florida not go alone. Florida is now considering linkage with RGGI or WGI (or both). Any real action needs legislative approval. The other Southeastern states are not particularly interested in forming an initiative. Wisconsin was originally thinking of its own cap and trade, but has changed due to stakeholder input. There is a big focus on energy efficiency and biorefinery. The RPS and renewable fuels standards are in play. There has been recognition of cost impacts.

There is a permit case going on for a coal fired plant. The utility has proposed a number of activities that would "offset" the emissions from the plant, including biomass firing, wind power, planting trees, and shutting down an older plant. The local NGOs agreed that there were no adequate sequestration sites in Wisconsin and did not require any capture targets. A decision is expected shortly. South Carolina has an advisory committee. The goal is to reduce GHGs to 5% below 1990 levels by 2020. Energy Efficiency programs, combined heat and power, RPS, support for nuclear, clean car program, alternative fuels, forest and agriculture activities, and GHG reporting. North Carolina also has an advisory committee. GHG reporting is required. Biomass projects are proliferating. New plants would have to meet BACT standards. Smaller biomass units less than 600 horsepower do not have to go through this program. Iowa has a GHG reporting requirement for Title V facilities. Massachusetts passed a law calling for a 25% reduction by 2020 and a 70% reduction by 2050. It will be interesting to see how Massachusetts prevents autos from the surrounding states from entering the state and increasing the CO2 emissions.

The costs of these programs are quite high. With the economy heading in the wrong direction right now, it remains to be seen how quickly these costly programs will be implemented. The universities have been getting pressure to declare that they will strive to be carbon neutral. Several universities are looking at the Chicago Climate Exchange to buy offsets. There are some questions about whether these "offsets" are really verifiable, rigorous offsets. A mandatory, 3rd party, auditing system for an entity wide program offers the opportunity for a wide variety of input errors to databases on things like oil invoices, coal deliveries, biomass fuel deliveries, natural gas invoices, etc.

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

Lisa distributed a chart covering a number of environmental issues. The CAIR rule was vacated. The CAIR rule created a 28 state region cap and trade program for SO₂ and NO_x. The goal was a 70% reduction in SO₂ and a 60% reduction for NO_x from 2003 levels. Although there was a trading program under Title IV and the NO_x SIP rule under Title I. However, the program crossed over into Title V. Some states, utilities, and industrials challenged the rule from either the SO₂ or the NO_x provisions. EPA and the environmental groups defended the rule. The DC Circuit Court vacated the CAIR Rule in its entirety rather than remanding it to EPA.

The Court mandate was delayed to allow all petitioners to file for appeals. North Carolina claimed that CAIR was illegal because the NO_x trading program was illegal because EPA did not consider state contributions and state programs but did this on a regional basis. They did not consider how this program would "interfere with maintenance". Further, EPA did not evaluate the air quality threshold



properly and set up the NOx compliance pool incorrectly. State budgets were not based on significant contribution to downwind nonattainment. Further, the NOx budget cannot be based on just burning oil or gas, since under the CAA, these units have a lower factor than coal.

On exempt units, it was illegal to require Title IV participation, since the EPA did not have the authority to terminate or limit Title IV allowances. Texas and Florida tried to claim that they were illegally included. The Court disagreed. Minnesota was to be re-examined. The Florida Association of Electric Utilities argued that certain vintage credits were eliminated illegally. The Court mandate is now scheduled for Oct. 25th. In the interim, the rule is theoretically in effect. However, many states are changing back to their old rules in view of the decision. Compliance deadlines are non-existent. Controls installed and under construction are still underway. The market price for allowances has dropped.

There are a host of other rules that either relied on CAIR or planned to take advantage of CAIR results. The Court's decision was unanimous. There were several judges that recused themselves, making a new panel difficult. A full hearing could be requested. The parties could come to a settlement and propose this to the Court. Since all petitioners would have to agree. EPA will likely defer fixing this to the next administration. Congress could set up a CAIR type program. There are few proposals including a straight CAIR implementation, a phase I implementation, or something different. Congress is now looking at doing something this year. A continuing resolution will be needed to keep the government running. CAIR provisions could be attached to a continuing resolution to get it too pass. The difficulty will be that some of the petitioners that won in Court could lose their position. The environmental groups are supporting and lobbying for Congressional action. States could be filing 126 petitions against other states. NACAA has announced that they would come up with a "model CAIR rule".

In NSPS, the case is fully briefed. Oral argument is to be scheduled. The CO2 part was severed from the case and remanded to EPA. On PM, we are supporting the rule. The states have attacked the EPA decision not to lower the primary standard. The Court focused on fine particulate. EPA's reliance on CASAC (or lack of it) is part of this case. On the ozone implementation, the Supreme Court denied the petition for certiorari. The DC Court decision to vacate the plan stands and is remanded to EPA. The CAMR rule was also vacated. The Supreme Court extended the time for filing for a writ to Sept. 17th. On the ozone NAAQS, no briefing has been scheduled. In addition, there was a Part 75 Issue concerning the use of protocol gases and the requirement of certified gases. The case is in abeyance as the groups try to come to a settlement. The January deadline is in jeopardy. No protocol gas verification program is in existence. The monitoring rule was also vacated by the Court. States wanted the right to require more monitoring than was specified in a federal rule.

NAAQS Update - **Patricia Strabbing**, Chrysler LLC

EPA is evaluating test methods for fine particulate. Any rule proposal is being delayed to next year.

Energy Efficiency Options for Industrial Plants - **Tony Munisteri**, Sigma Energy Solutions, Inc.

With all of the issues brought forth, energy efficiency is becoming more important. Emissions compliance, GHG regulations, CO2 registries, and DOE programs all lead towards energy efficiency improvements. Although efficiency cannot provide the total solution to GHG emissions, as much as 10% can be achieved in this manner. The process includes the normal project management functions with the key feature of economic ranking to provide the opportunity of having a longer term capital



plan. Testing and verification is important to demonstrate to those concerned that actual improvements have been achieved.

The important place to start is the review the design basis of the plant. A baseline should be established. Plant modifications may not have been integrated with the total process. Operations may have been established to resolve an issue that is no longer applicable due to improved controls or monitoring systems. New perspectives bring potential energy savings.

The next very important aspect is unit performance testing. These test results can be compared to the design basis and the baseline. Equipment constraints need to be identified. Instrumentation has to be verified. Heat and mass balances need to be performed (2 - 3% closure). Energy losses can then be identified. These can then be compared and rank ordered. Identify low hanging fruit. Mitigate capacity constraints. Every recommendation must be boiled down to an economic result. This allows the recommendations to be rank ordered.

Balance of plant equipment is critical to support the plant. The thermal system is modeled in Gate Cycle. The electrical system is modeled in ETAP. Reliability is an important consideration. In one facility, an SO₂ reduction system was to be installed. The power system was to be optimized to improve the output at 3 x 144 MW units. BOP and turbine improvements allow a significant improvement in plant output. At an industrial boiler facility, recommendations identified \$4.5 million in savings. At a CFB unit, the heat rate had degraded over a 6 year period. Energy improvements recovered about half of the lost heat rate. At a supercritical power plant, the heat rate had degraded by about 1000 BTU/Kwhr (10 - 12%). Again improvements were identified to recover that energy loss.

GOVERNMENT AFFAIRS SESSION

Karen J. Neale, International Paper Company, *Government Affairs Committee Chairman*

The two main topics are climate and energy. On the climate side a small group met with Senator Dorgan's staff on a committee that has been established to answer 7 proposed questions on the continued use of coal under a climate change regime. Questions about cost, timing, development, and impact are being raised. CIBO tried to stress two key points. Industrial needs are different from utility needs. Consideration needs to be given about funding methods, technologies, allocations, etc. that are likely to be different for industrial plant owners. The other key consideration is to assure that the definition of an EGU should be the same as the one in the acid rain program. The Congress is in a short session and wants to get an energy bill and set the stage for a climate bill.

Some of the issues for climate requirements include the problem of allowance auctions for industrials, the potential for energy savings, the cost of abatement, the limited capital budgets, and sequestration issues. Comments have been submitted to some of the key staff personnel. Representative Dingle indicated that climate change legislation is high on his list for next year. With the Supreme Court decision, many of the key congressmen feel that the science argument has been closed. Congress needs to provide some legislation that sets policy for EPA.

Rep. Boucher is looking at a "wires charge", or some similar mechanism, in order to fund the development of carbon capture and sequestration. The energy bill that passed the House last night will not be satisfactory to the Senate. On the Senate side, there was a group of 10 democrats that



sent a letter to the leadership that indicated that they could not support the Lieberman Warner bill in its current form. This group continues to meet.

There is a bill (Blackburn) that would prohibit EPA from regulating CO2 under the Clean Air Act (at least in its current form). There is a request for signing on to support the bill. A letter requesting support will be sent to the committee. The sense of the membership was that legislation is preferable to regulation under the CAA.

The energy bill that just passed the House has a compromise position on drilling and no revenue sharing. The Senate is against the "no revenue sharing" provision. The President has indicated that the 50 mile compromise for drilling is not acceptable and will likely result in a veto. Whether an energy bill could come out of the Senate or a conference session to bring a bill to the President is an open question.

TECHNICAL COMMITTEE SESSION

Harvie Beavers, Colmac Clarion, *Technical Committee Chairman*

Vincent M. Albanese, Fuel Tech, Inc., *Technical Committee Vice-Chairman*

Real Time Metering, Power Quality, Demand Management - **Michael Corbin**, SATEC

SATEC is working with the utility industry on such technologies as smart grids, infrastructure systems, reliability, and power surge capacity. Measurement, power quality, and fault information products provide solutions for voltage and current requirements, data transmission, and output conversion. Energy efficiency, sub-metering, demand response, data acquisition, renewable generation control, and emissions data are all tied to appropriate management of information. A web based service option can be used for power quality monitoring.

A software management system provides a triple redundant SCADA system, an integrated historian, advanced alarm notification, a relational database, power quality, reports, and a web server. Power quality impacts motors, compressors, actuators, and computer systems. Equipment failures and reliability are impacted by damage from poor power quality. Individual sub metering and billing reduced building energy use after one year by 25%. The ability to measure and directly pay for energy provides a means for people to conserve. There is a database that keeps track of incentives for renewables and energy efficiency. The web site is <http://www.esireuse.org>.

Mercury Testing and Mitigation Overview - **Harvie Beavers**, Colmac Clarion

Shaw Engineering has been developing mercury measurement systems. The developer used to be at the University of Kentucky. They are also developing a process for CO2 capture with the production of a fertilizer type product. The product needs to be utilized within one year as the product breaks down and subsequently releases the CO2. We hope to have someone from Shaw at a future meeting.

DOE "Save Energy Now" Update - Bob Bessette

The proposed standards for steam systems, pumps, compressed air, and process heating have been



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generated in beta form. These were being tested at various sites in Texas. Once the feedback has been obtained and any changes made, the documents will go to the ASME process for final approval. In the interim, guidance documents are being prepared.

Next, Energy, Technical & Environmental Committee Meetings

TUESDAY & WEDNESDAY, December 9-10, 2008

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