



## Technical Focus, Energy & Environmental Committee Meetings

December 2016  
Westin Hotel  
Arlington, VA

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# MINUTES

### TUES-WED, December 6-7, 2016

#### TECHNICAL FOCUS GROUP SESSION

**Jason Philpott, Eastman Chemical Company**, Technical Committee Chairman

*Combine Heat and Power, Moderator – Fred Fendt, The Dow Chemical Company*

The topic is Combined Heat and Power and its relevance to the industrial markets. **Douglas Jester, 5 Lakes Energy**, gave a review of optimizing combined heat and power. The Michigan Energy Office set up a program to optimize the adoption of CHP technologies in the state of Michigan in response to the requirements of the Clean Power Plan. The task list included identifying CHP technologies, modeling the applications, identifying the barriers, identifying the role of the utilities, and eventually implementing the results.

CHP is more efficient than generating the power separately and using the heat separately. The DOE has a database of potential applications for CHP. Commercial office buildings represent a substantial opportunity for CHP. When combined with universities and hospitals, they represent over 50% of the potential for CHP applications.

Industrial applications tend to require larger plants with custom designed equipment. The commercial market represents smaller applications and could be satisfied with standardized packages that provide on the order of a few Kw up to 1.5 Mw of power. Baseline data for cost and performance were provided an EPA study report. The next step is the refinement of the data and the matching of the performance against the opportunity.

The STEER model was developed to provide a tool that could be used to simulate applications. The model was developed in conjunction with the University of Michigan. The model takes data for existing plants and loads in a given state. Additional constraints were added to account for the requirements of the Clean Power Plan. Plants are operated in accordance with the "merit order", or economic dispatch, that is typical of utility grid systems. The model develops a least cost plan that can accommodate all of the constraints. Without the CPP, but with announced retirements, 4800 MW of new capacity will need to be added by 2030.

Natural gas combined cycle plants are currently being considered, as well as natural gas CHP systems. Network efficiency (grid operation) is the lowest cost approach to reducing GHG emissions. Traditional energy efficiency can help reduce the overall cost of energy for a state (lighting, HVAC, etc.). The natural gas price has a significant impact on the cost estimates for these plants. Without



cogeneration, the future generation strategy is a bet on natural gas price. At high gas prices (\$6/MMBTU), wind and solar start to play a larger role in the generation mix. In the mid-range gas price, cogeneration can play a significant role. In the absence of the CPP, cogeneration plays a lesser role. Utility rates have a big impact on the economics of CHP. Relatively low electric prices make CHP economic viability challenging. Industrial customers have a 1 – 2 year payback requirement. Standby rates are another barrier. These are often confusing in the way they are calculated. Selling back to the grid on reasonable terms is often difficult. Michigan still has 90% of its generation as regulated utilities and, thus, still has PURPA requirements.

Under PURPA, a regulated utility must purchase power from a “qualified facility” at the utility’s “avoided cost”. The state has the authority to set the avoided cost, which was intended to be the full accounting cost of building and operating a new power plant. Demand charges are another barrier to CHP. Statistical analysis of CHP in the state of New York indicated that demand charges are not reflective of actual demand costs. Peak demand doesn’t change that much. Thus, statistically, the change at an individual plant does not really drive the need for capacity needed to keep the system running. Integrated resource planning as done by utilities and PUCs does not generally include CHP. The STEER model is intended to correct that. A final report is due in August of next year.

**Pascal Robichaud, CEM (Cogeneration and Energy Management) Engineering**, reported on battery storage and CHP. In Ontario, the power generation is dominated by hydro power. Ontario deregulated its markets in the 90s. Still some rates have been determined by provincial government. Ontario has shut down all of their coal fired plants, which used to provide over 30% of the power. Nuclear now provides nearly 50%. Renewable programs have been heavily subsidized. As a result, electric rates have escalated. Industrial operations have been focused on their primary product, but due to the rising electric rates have now been embracing CHP.

A number of plants have been built ranging from 5 Mw to 120 Mw. This has all been “behind the meter” operation. There were some issues associated with these operations and battery storage has been considered. Energy storage can be accomplished in a number of ways, ranging from large pumped storage projects to compressed air storage to steam accumulators, to battery storage. Battery storage has been developed for the automotive industry.

Stored energy can be used in the event of a power outage or voltage sag. There are two types of energy storage batteries: flow batteries and solid state batteries. The flow batteries store energy in chemically reactive liquids held in two storage cadmium, or sodium sulfur. A control system is needed to determine when to charge and when to discharge. Also, DC to AC conversion is required. Lithium Ion battery costs are currently around \$550/Kwhr. This cost is based on the Kw capacity and the hours of storage. The inverter and interconnect costs are \$450/Kw. The BMS (battery management system) and control system is about \$325/Kw. The installation and contingency costs are estimated at \$250/Kw.

The benefits for a CHP system include reduced shutdown, reduced restarts, black start capability, turbine load leveling, peak shaving, uninterruptible power source, and silent operation. With CHP, a plant can run in “island mode”, in which case the plant can disconnect from the grid. For plants with high demand charges, zero import of electricity can be attractive. Fuel efficiency and emission reductions can be accomplished by using batteries and CHP together, along with some PV generation. Batteries can also provide frequency stabilization and voltage stabilization. With fewer startups and shutdowns, maintenance costs can be reduced.



ECO-H is providing a packaged system in a shipping container. The battery system smooths out the fluctuations in gas turbine generation trying to follow changing load demand. The US and Europe have the most battery storage installations. Ryerson University has a battery system with 600 Kwhr of storage capacity. The system will be studied for grid response. LBA Realty owns a mixed use corporate complex with 2.1 million square feet. A 1.3 Mw indoor energy storage system will be used to help run the complex. Smart software will be used to manage the system. Typical capacity for a 1 Mw(e) system is around 160 Kwhr for power transient management and 2000 Kwhrs for peak demand and power transient management.

Disturbances on the grid can cause power trips at the CHP plant. The use of batteries can alleviate these power disruptions. Purchased power prices can be high. In Ontario, selling electricity back to the grid is prohibited due to the aging infrastructure of the grid system. There was also pressure to reduce fuel use and CO2 emissions. PV solar can provide carbon free power, and storage can smooth out the fluctuations. Black start capability has to be designed into the system.

The Campbell Soup Company of Canada installed a 4.8 Mw CHP system in 2015. A gas turbine with HRSG with supplementary firing was installed. The plant produces 92% of annual electric and 93% of annual steam needs. The plant will actually use more fuel due to the power generation, but overall, 9300 tonnes of CO2 will be reduced. The boiler (Cleaver Brooks) can be operated separately if needed. A Solar gas turbine supplies the electricity. The system has been running for about 1 year. Frequent power blips from the grid (about 1 every 3 weeks) were causing problems with the CHP system. Purchased power costs during peak periods are quite high (time of day pricing up to \$35/Mwhr). The utility installed a 500 Kw buffer to assure that power was not fed back to the grid. That meant that the plant had to buy at least 500 Kwhrs continuously.

In order to avoid these costs, a 1 Mw storage battery with 2 hours storage in a containerized system has been proposed to allow the plant to operate in island mode. The plant also will install 500 Kw of solar panels. With the battery system, the short term fluctuations in the system are significantly reduced for the gas turbine. The battery follows load faster than the gas turbine and takes the immediate swings. The battery is constantly charging and discharging. A predictive control system provides the management of the battery system.

Current battery life is estimated at 10 – 12 years. The 1 Mw system with 2 hours of storage was estimated at \$6.1 million CAD. The savings include 6000 Mwhr for \$660/yr, reduced lost production of \$600/yr, and CO2 credits of \$50/yr. The \$1300/yr savings would represent a payback of about 4.6 years. A government grant of roughly half the plant cost improved the savings to 2.3 years. Issues that remain include cost competitiveness, industry acceptance, validated reliability and safety, and equitable regulatory environment.

## **GOVERNMENT AFFAIRS SESSION**

**Anthony Reed, Archer Daniels Midland Co.,** *Government Affairs Committee Chairman*

**Robert (Bob) Corbin, CIBO Member Service Consultant,** introduced the guests for today's meeting. The usual "round the table" introductions were carried out.



**Anthony Reed, Archer Daniels Midland Co.**, noted that the pundits were wrong in October. Hillary Clinton carried 20 states plus DC. Donald Trump carried 30 states and is president elect with 306 electoral votes. While a number of cabinet nominations have been proposed, EPA and DOE are still open. The Senate has indicated that the ratification of the nominees will come quickly after the inauguration. The Senate Environmental and Public Works Committee leadership will change to Senator Barasso. The minority position will change from Senator Boxer to Senator Carper. In the lame duck session, the energy bill is still in play and the water resources development act (relative to Flint) will be wrapped up. A continuing resolution will pass to keep the government running. The debt ceiling and other budget issues will come early next year.

The Congressional Review Act can be used look at rules and regulations already in place, but only one rule has been overturned in the last 20 years (out of some 72,000). There are certain requirements that have to be met to qualify for Congressional Review. Joint resolutions can be enacted with a filibuster. That approach might be use for some proposals. Some opportunities for passage might be tax reform, infrastructure, "Made in America", and energy reform. The details remain to be worked out. On tax reform the approach is to lower corporate rates and eliminate deductions. There is a major list of things related to streamlining permits and projects that might help our companies.

Lunch Speaker – **Frank Maisano, Bracewell LLP**

The election result was a surprise to many. A number of states that were traditional blue states eventually went for Trump with his message of bringing jobs back to the US and "making America great again". Now we need to figure out what we need to do. Business, in general, is not very good at getting it's message out. The goal is to play the game the way the eNGOs play. The substance doesn't really matter. The pressure is developed from the perception that is generated. The public doesn't know about the intricacies of any of these policies. They are being told that industrial plants "kill their children". That message resonates with people. We will need a comparable message for industry. The eNGOs will oppose everything and anything that the new administration proposes. The jobs issue will likely be the major message.

## **ENERGY SESSION**

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

**Frederick (Fred) P. Fendt, The Dow Chemical Company**, gave the antitrust admonition. The minutes of the June meeting were approved.

**Michael Kline, The Brattle Group**, reported on the future of existing coal units. Over the last decade, increased environmental regulations and falling natural gas prices have down the generation from coal. In 2005, coal provided 50% of electric generation. Today, coal provides about 33% of generation. Natural gas has picked up the difference and is now at parity with coal. Coal capacity



has fallen by 32 Gw. The bulk of the retirements have been the older and smaller units. Nearly half of the retired units were under 150 MW.

The MATS rule was the major regulatory impact. However, the reduced price of gas was the major driver. Other regulations include CSAPR, Regional Haze, and the Clean Power Plan. While the Trump administration has supported the coal industry, the low price of natural gas and the ease of permitting a gas fired plant will still make it difficult to propose, plan, build, and operate a new coal fired plant.

Over the next 5 years, another 15 Gw of coal units have announced their retirements. The EIA forecasts a decline in coal capacity over time. The existing units may run harder in the near term, but without replacements the aging plants will eventually retire, thus reducing the generation of power from coal. Costs of wind and solar are still coming down. The marginal cost of running these plants is effectively zero with the subsidies. Load growth has been negligible. Without these major drivers, new coal plants will be difficult to justify.

**Dan Skowronski, Saul Ewing LLC**, reported on CHP and DG Access to the grid. Distributed generation puts generating plants out into the distribution system rather than having central generation. Central generation has been utilized for many years, but mostly as a backup system. Since the turn of the century, more DG has been installed, particularly with respect to solar PV. The concept of "net metering" has been used to promote such installations. In some cases, excess generation is sold back to the grid at retail prices. In others, the wholesale price is used. Some locations forbid selling back to the grid. Some locations allow for "community solar", in which a facility can contract to buy power from a large solar installation in another location. There are currently 4400 installations with 82.7 Gw of generating capacity. Some 12% of generation comes from CHP.

The PURPA law in 1978 provided cogeneration plants that "qualified" with no size limitation and a requirement that regulated utilities had to buy the power. With the deregulation of the power industry, generators no longer had to purchase the power from cogeneration plants. Plants could bid to the grid the same as any other generator. The Energy Policy Act of 2005 then set 20 Mw as the level below which CHP plants could apply for a power purchase agreement. Regulated utilities are still subject to PURPA.

Cogeneration for "behind the meter" applications, self-generation drivers include new buildings, replacement boilers, and some economic incentives. Some states have various incentives for CHP. Current federal incentives are due to expire this year, unless renewed. System reliability has been proposed as a reason for CHP (i.e. island generation), but this has not appeared to provide much push for actual installations. Incentives also include renewable energy credits, net metering, feed in tariffs, and 3rd party ownership.

State laws need to be researched carefully so as not to get classified as a public utility. Utilities typically apply a demand charge that is related to the maximum demand for a facility. The justification is that the utility had to have capacity to provide the service. In many rate plans, the charge persists for the next 12 months. The problem for behind the meter operations comes with a CHP plant shut down. At that time, the grid supplies all of the power, which increases the demand charge, which then persists for the next 12 months. An alternative to that approach is to have a "stand by charge" that covers the need to supply the power.





## **ENVIRONMENTAL COMMITTEE SESSION**

**Chuck Hallier, Cargill Inc.**, Environmental Committee Chairman

**Robert (Rob) Kaufmann, Koch Companies Public Sector, LLC**, Environmental Committee, Vice-Chairman

**Robert (Rob) Kaufmann, Koch Companies Public Sector, LLC**, reported on the CPP/NAAQS update. Trump's stated priorities included a revocation of the CPP and the Paris Climate agreement. These would be very difficult to accomplish. Other actions include revoking the following: NEPA GHG Guidance, executive orders, GHG and CAFÉ standards, and the social cost of carbon. The endangerment finding can be challenged, DOE efficiency standards, and Clean Air Act revisions could also be entertained.

The NAAQS review schedule for the 6 criteria pollutants are all coming due. EPA came to a final decision on lead to not change the lead standard. On NO<sub>2</sub>, the proposed standard does not change the standard. SO<sub>2</sub> is due. The PM review is due in the fall of 2017. The CO standard is still to be determined. The ozone standard was proposed at 70 ppb. The PM standard could be a problem, but is not looking like a promulgation until 2021. The eNGOs could file a deadline suit to act faster.

Exceptional events include wildfires, prescribed burns, stratospheric ozone incursions, dust storms, and certain international emissions. It is proposed that exceedances on the days in which these events occur could be mitigated. The eNGOs are expected to challenge this rule in court. There is a proposed implementation guidance for the ozone NAAQS. The proposed standard is 70 ppb. There are several categories of exceedance (Marginal, Moderate, Serious, etc.). These range from 71 ppb all the way up to greater than 163 ppb. Reasonable Further Progress has to be demonstrated. Transport of emissions from other regions has to be accounted for. Section 179B covers emissions from Mexico and Canada. The attainment dates range all the way to 2031 for extreme locations.

Most of the non-attainment areas are in California, the I-95 corridor, Texas, and the Great Lakes. Utah and Colorado also show up, mostly in the winter time. Of the 57 non-attainment areas, 47 are marginal (the lowest level). Modeling standards were approved by OMB. They should be issued shortly. If a unit comes in under the MERP (Modeled Emission Rate Precursors) values, they are done modeling and are considered not to contribute to exceedances of the standards.

**Brad Justus, AECOM**, reported on Boiler MACT and CEDRI. For Boiler MACT the rule was published on Nov. 20, 2015. The package of technical corrections has not been received. The compliance date was Jan. 31, 2016. A compliance test was required within 180 days. There was a court decision on the MACT floor values and the method of calculation. The court vacated that portion of the rules. The parties requested the vacatur be converted to a remand so as to have a rule in place while EPA fixes the calculations. Using the 2012 database with the 99% UPL variability calculation will impact some of these calculations. In some cases, the standard could theoretically increase. EPA has indicated that the mercury and chloride standards will not change much. PM and CO could see reductions or certain types of units, particularly fluid bed unit that co fire coal and natural gas.

The Area Source Rule requires GACT (Generally Available Control Technology). The reconsideration provided some of the requested items in our comments. EPA denied reconsideration for the energy assessment and CO averaging period. EPA revised the electronic reporting



requirements. They also revised the liquid fuel definition. The same court remanded 2 items to EPA for fixing.

On the CISWI rule, the definition of CEMs was revised. The court remanded the emissions standards for cyclonic barrel burners and retort units. EPA approved the addition of a number of alternative fuels that can be considered non-hazardous secondary materials and are therefore not hazardous and will not fall under CISWI.

The Compliance and Emissions Data Reporting Interface (CEDRI) is a web based reporting tool to support EPA's E-reporting rules. Registration is completed on the CDX website. The 3 potential roles are preparer, certifier, and designated certifier. For Boiler MACT, the reporting requirements include performance test results, CEMS RATA results, and semiannual or annual compliance reports. Compliance reports include all of the information needed to identify and show compliance for the unit in question.

The submittal package template has to be created for the first submittal. After creating the package, the types of reports need to be identified. Then the information can be input to the system. Feedback from EPA indicates that anytime a monitor is not functioning (malfunction, down time, other) the information has to be reported in 3 different places. Getting all of the information into the system and getting it up and running is time consuming. Considerable time needs to be allowed to implement this. If a reporting deadline is looming, it is important to get the system into operation so that the reporting deadline can be held.

There are 14 reporting parameters. If a report on a particular requirement is missing, there is an opportunity to make an attachment. If data is missing, a data package must be created and attach it to the report. When all is finally done and validated, a hard copy can be printed to be submitted to a state agency. After that, the certification material can be entered and then submitted.

**Joe Macak, Mostardi Platt**, reported on Air Toxics Testing. Formaldehyde is one of the organic HAPs. More and more permitting agencies are requesting formaldehyde testing. The EPA emission factors in AP-42 are often set at detection limits for purposes of making calculations. The minimum detection limit in the lab is not achievable in the field. For a gas turbine, the rate is about 300 ppb. However, for the GE DLN combustor on a gas turbine the rate is about 15 ppb. For a large machine or combination of machines, the 300 ppb level could put a facility into the major source category (> 10 ton/yr on a calculation basis).

There are a number of test methods, including EPA Method 316. The system uses the EPA Method 5 system for particulate sample. Glass lined probes with ultra-pure water are used to collect the sample. The need for ultra-pure water comes from the very low concentrations that are being collected (ppb). The sample is measured with a spectrophotometer looking at the color. At the lower concentration levels, the sample curve is linear. At higher concentrations, the curve deviates from linearity. In that case, the sample has to be diluted and re-measured.

A continuous monitor is available using FTIR. However, the measurement is only at one point and the system is complex. There are a number of interferences. The signal has to be analyzed mathematically to arrive at a concentration. The detection level is not as good as the wet chemistry method. High moisture in the flue gas provides a major interference. The monitor is quite expensive. Calibration gases for these instruments use surrogate gases. These are typically in the 100 ppm



range (not ppb). Calibration gases at the 10 – 50 ppb level of formaldehyde are not available. With the detection level at 100 ppb, EPA requires that level in the averaging of the samples. Method 323 also uses a point probe. Midget impingers are used to collect the sample in 20 ml of pure water. Another 10 ml is used to rinse the probe. The colorimetric method is used to measure the concentration. This method has a lower detection limit compared to the FTIR system. Since this limit is lower than the 300 ppb from AP-42 or the 100 ppb from the FTIR, it gives a better chance to stay below the major source threshold.

CARB Method 430 uses a gas chromatograph method. For this system, the lower limit looks to be around 7 ppb. The FTIR system provides instantaneous results, but cannot achieve the low levels of detection. Running longer tests for wet chemistry does not necessarily provide better results. Single port locations avoid handling the probe on a regular basis, thus reducing contamination. Extremely low levels of formaldehyde are difficult to measure accurately. Very low sample volumes are used to represent the source. Water purity, QA/QC, dilution, and interferences all represent sources of uncertainty. With the FTIR method, it is not unusual to see major changes in the amount of formaldehyde. This does not appear to be realistic.

In general, combustion sources generate very low levels of formaldehyde. If VOC levels are less than 1 ppm, not much is being accomplished by looking for lower levels of formaldehyde. It was noted that the gas turbine MACT is to be reviewed. The current limit is 91 ppb. EPA has indicated that they have test data with lower figures, which would imply a more stringent standard after the review.

**Scott Darling, Alcoa, Corp**, gave an update on the MOG (Midwest Ozone Group) activities. The new ozone standard will require re-designation of attainment and non-attainment areas. The EPA and the Northeast states keep requesting SIPs from the Midwest, claiming transport from those states is preventing them from coming into attainment. The current level of CSAPR does not include EGUs. NOx budgets have been reduced. Five states have filed a challenge to the proposal. UARG is evaluating whether or not to challenge the rule. MOG will follow UARG. The Northeast states filed a 176A petition to include the Midwest states in the Ozone Transport Region (OTR). EPA has not taken any action. The states have now filed suit in court. North Carolina filed to force EPA to make a decision.

The OTC operates on a “majority rules” basis. They would outnumber the Midwest states. Maryland has filed a 126 petition that identified 36 EGUs in 5 upwind states that have SCRs but are buying allowances. This would provide a 1 ppb ozone reduction (out of 75 ppb). The mobile sources produce 20 – 30 ppb. There are other 126 petitions. Connecticut has challenged the Brunner Island plant. Delaware has challenged the Brunner Island plant and the Harrison plant.

The MOG work is providing modeling to show that ICI boilers are not the problem. The Northeast states have to clean up their emissions before forcing others to make substantial expenditures. The current CSAPR level, is aimed at the 2008 ozone standard. The 2015 standard will likely result in additional control requirements.

**Steve Jelinek, AECOM**, gave an update on the EPA cost manual. EPA has compiled information on air pollution cost information. It is intended to provide guidance to industry and regulatory authorities. Two chapters have been completed (SCR and SNCR). There are 3 chapters currently out for review. The cost estimation methodology chapter is the most important one. EPA has posed 3 questions for





comment. The manual is supposed to focus on “private costs” vs “social costs”. The base year is proposed to be 2012. The manual is intended to be issued in 2021.

Cost indexing is proposed to update cost data to future years. A single index might be used for both labor and capital within a 5 year period. However, EPA does not follow its own recommendation, as cost data is more than 10 years old and by 2021 will be older still. The 7% interest rate is proposed as the discount rate. This figure is low for industrial applications (i.e. private costs). The discount rate includes more than the interest rate on bonds.

Condensing refrigerator data comes from 1990. Data comes from only 2 vendors (not “large”). The thermal oxidizers includes a distinction between incinerators and oxidizers. The original cost quotes are more than 25 years old. The comparisons with current vendor quotes are low by a factor of at least 2. Destruction being retrofit, the remaining life might not be 20 years. Also, retrofit costs tend to be higher than new plant costs.

**Gary Merritt, Inter-Power/AhlCon Partners, L.P.**, reported on the water and ash rules. A lot of the states are thinking about writing the rules at the state level that will include industrial units as well as EGUs. There is a proposal to amend S.612 that would provide for EPA enforcement of a CCR rule if the state does not. That would avoid the drive to classify ash under Title C (hazardous). States could be more stringent than EPA”. This may reduce the potential for citizen law suits.

The current rule is applicable to EGUs. The key path for enforcement has been citizen suits. Water quality and air quality also provide means for EPA to enforce. If an ash disposal site does not meet EPA criteria, it would be classified as an “open dump”. Again, an “open dump” can be regulated and enforced by EPA. The need for citizen suits is minimal.

A surface impoundment has an additional set of rules including the requirement for a web site describing the site activities. Construction and safety requirements are specified. The compliance schedule will become the critical problem for industrials. The EPA has been trying to eliminate the wet impoundments and push for dry, land fill type systems. There is a requirement for 30 year closure and monitoring requirements. There is a web site that has a guide to compliance for the EPA Coal Combustion Residuals (CCRs) rules.

EPA has set up a proposed rule for the hard rock mining industry that would require financial instruments (such as bonding or a trust fund) to provide funding for “safe closure” of a facility. For those facilities that have converted a coal unit to natural gas, there may be a residual ash repository that citizens can investigate and initiate law suits against those companies.

**Lisa Jaeger, Bracewell LLP**, reported on all of the litigation activity surrounding the various rules that we have been following.

Of the Boiler MACT suite, there are issues on remand in 3 of the cases. There are petitions for rehearing in 2 of the cases.

The MATS technical corrections case is in abeyance, along with the revisions. The DC circuit court upheld most of the 30 issues. Some of the standards were vacated as EPA did their calculations incorrectly. There are 4 petitions, one of which is to remand the standards. The likely outcome will be that EPA's petition to remand will be granted.



The CISWI Reconsideration is over.

The Area Reconsideration is over.

On the MATS rule, there are 5 cases pending. The Supreme Court directed EPA to consider costs. Reconsideration, startup, and supplementary finding cases have been combined. The technical corrections are held in abeyance until these other issues are settled. EPA was also directed to evaluate the impact on coal jobs. The court asked for a plan to do this evaluation. EPA filed a 2 year plan to seek advice from a Science Advisory Board. Industry has asked the court to issue an injunction. The 130 ppm standard is still in play.

The eNGOs are still challenging CO as a surrogate for organic HAP. Work standards for startup and shutdown have been challenged. Affirmative defense provisions have been removed from the rules. The court case is scheduled for spring (May). Briefing was completed in October.

The UPL is under remand to be better explained. There are also some smaller categories of units that EPA has to set standards for. For the 2008 ozone implementation, oral arguments are scheduled for spring. For the 2015 ozone rule, no court dates have been set. On the GHG rules, the Supreme Court stay is still in place.

The Clean Power Plan suit had oral argument in September. The NSPS rule is scheduled for oral argument in April. Implementation is ongoing.

The Clean Water Act 316(b) case is scheduled for briefing in February. The industry petitioners have objected to the roles of USFWS and NMFS and the Biological Opinion using a wrong baseline.

The eNGOs have asked for best available technology to be closed loop for existing units and the new units should include replacement units. There were a couple of applicability comments that were sent to EPA. EPA addresses them in their brief. In one case, we will ask the court to request specific clarification from EPA for applicability. In the other, we will remain silent.

In the Effluent Limitation Guidelines case, briefing has just started. CIBO comments included applicability, isolating waste water streams, reclassifying low volume waste sources, zero discharge in ash transport water, and daily loads as permit conditions. Both utility and environmental groups have filed on both sides (i.e. as petitioners and intervenors). This is unusual. However, procedural issues are applicable to both sides.

On Waters of the US (WOTUS), there is a jurisdiction issue between the District Courts and the Circuit Courts. The NAM has asked the Supreme Court to settle the jurisdiction issue. The coal ash rule case has been briefed. Oral argument is expected in the spring. A part of the rule has been severed for remand to EPA. While the overall rule was acceptable to industry, there were some issues that still needed resolution. The eNGOs are attacking the basic rule, particularly for unlined ponds.

Additional items that were commented upon during the year included over 2 dozen individual submittals. There are still comments to be submitted on 3 more issues. These are the PSD GHG



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Other issues that are coming up include Regional Haze, Ammonia as a Criteria Pollutant, and the NOx Control Cost Manual. CIBO did get some questions from EPA concerning the residual from boiler cleaning solution. Some utility units are using the boiler to evaporate the water and just collect the particulate in the particulate collection system. It is not known where EPA plans to go with this, but there are issues if the solution is treated as a waste and used in a boiler.

The Hazardous Waste Generator Improvements rule is supposed to make RCRA more "user friendly". There are some labeling issues and exemption issues that may need some attention.

The refrigerant management program was intended to control the ozone layer depletion chemicals. EPA wants to expand this program to include GHG substances. Industry is opposed on the grounds that EPA does not have the authority to regulate these substances.