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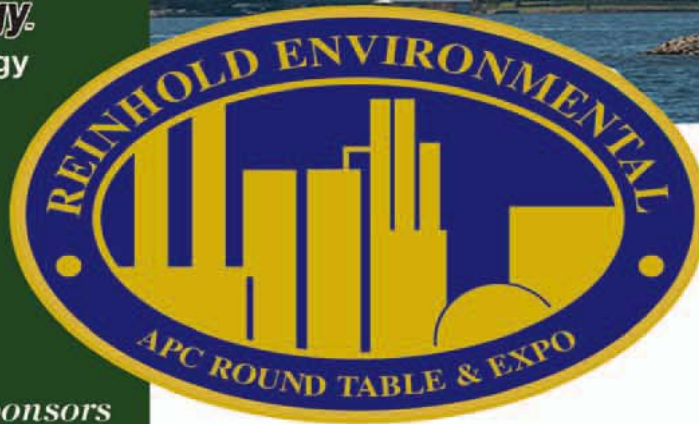


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July 18-20, 2010
Marshall Plant

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SOUTHERN ENVIRONMENTAL



POLLUTION CONTROL
USERS GROUP

17th Annual
APC
Round Table
& Expo

*ESP, Fabric Filters, Scrubbers, SO₃ Mitigation,
Mercury Control and Biomass*

Show Guide

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APC Round Table & Expo



The 17th Annual APC/PCUG Conference is presented by
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2010 APC Round Table Agenda

APC Round Table Conference Event / Charlotte's Motor Speedway - July 18, 2010

July 19, 2010 - Monday - APC Round Table

Registration / Expo opens at 8:30

Technical Training Classes 8:00-11:30

8:00 - 9:30	Training Class 1 (Kannapolis A Ballroom) Fabric Filter Fundamentals by Rich Miller, ADA-ES	Training Class 2 (Concord G-H Ballroom) Basic ESP Fundamentals by Gerry Klenn, Southern Company	Training Class 3 (Carolina Ballroom) Biomass 100% and Co-Firing Basics by Kevin Davis, REI	Training Class 4 (Kannapolis B Ballroom) Wet Scrubber Fundamentals by Mike Walsh and Mike Hammer, MET
9:30 - 10:00	FF O&M Training - Start-up practices, troubleshooting, bad bag detection by Paul Foster, Alstom	ESP Advanced Fundamentals by Russ Ridgeway, Shel-B-E-E, Consulting	Biomass 100% and Co-Firing Actual Experience by Orest Walchuk, Nalco Mobetec	Wet Scrubber Lessons Learned Discussion moderated by Steve Wolsziffer, RE Consulting / Gordon Maller, URS; Tony Licata, BP; Bob Nicolo, Hitachi

11:30 - 1:00 Lunch in Exhibition Hall

1:00 - 2:30 **Presentation of Round Table Lifetime Award** by Susan Reinhold.....Safety Note by Hotel..... Keynote Speech: Cliffside 6- A Modern Coal Unit by Harry Lancaster, Project Director Cliffside 6, Duke Energy

2:30 - 3:00 Break in Exhibition Hall

3:00-4:00	Workshop 1 (Kannapolis A Ballroom) What are the Sulfur Limits for a Fabric Filter?" by Bob Taylor, GE Energy	Workshop 2 (Concord G-H Ballroom) Combustion and SCR Effects on ESPs &FFs by Bob Crynack, Crynack Consulting	Workshop 3 (Carolina Ballroom) CO ₂ Experience by Sean Black, Doosan	Workshop 4 (Kannapolis B Ballroom) Dual Loop Scrubber Improvement at Muscatine P&W - using nozzle technology by Robert Van Durne, Lechler
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4:00-4:30	Workshop 6 (Kannapolis A Ballroom) How to Get the Most Out of your Filter Media by John Darrow, W.L. Gore	Workshop 7 (Concord G-H Ballroom) ESPs and Mercury Removal? by Mick Chambers, SEI	Workshop 9 (Carolina Ballroom) Recent SO ₂ Mitigation Experience by Mark Thomas, Duke Energy	Workshop 10 (Kannapolis B Ballroom) Considerations When Welding FGD Alloys by Ron Richard, RE Consulting
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4:30 - 5:30 Break in Exhibition Hall

5:30-6:30 **Reception in Exhibition Hall (open to all attendees and their families)**

7:00 - 8:00 Registration

July 20, 2010 - Tuesday - APC Round Table

7:00 - 8:00 Registration

8:00 - 9:00	Workshop 11 (Concord I Ballroom) Converting an ESP to a Fabric Filter by Tom Lugar, Buel Division of F-K	Workshop 12 (Concord G-H Ballroom) ESP Operating with High Sulfur Coals - What is the max sulfur content we can tolerate? by Ron Tricori, RE Consulting	Workshop 13 (Concord J Ballroom) Converting from a Wet Ash to Dry Ash System - Boiler ash and flyash by Gary Mooney, Clyde Berg, Delta/Ducon	Workshop 14 (Carolina Ballroom) FGD Waste Water Treatment Options by Brian Heimbigner, Siemens
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9:00 - 9:30	Workshop 16 (Concord I Ballroom) FF Baglife Assessment by John McKenna, ETS	Workshop 17 (Concord G-H Ballroom) Boiler Combustion/Boiler Tuning to improve Emission Controls by Tom Weir, Duke	Workshop 18 (Concord J Ballroom) Mercury ACI Systems by Kevin Fisher, Apogee Scientific	Workshop 19 (Carolina Ballroom) Dry FGD Basics Operations and Maintenance by Travis Reynolds, Alstom
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9:30 - 10:30	Workshop 21 (Concord I Ballroom) Why is Gas Flow Important in FF Design? by Stephen Bowen, Nels Consulting	Workshop 22 (Concord G-H Ballroom) Mid-Frequency T/R Technology by Roland Metz and Dr. Michael Steingraber, Siemens	Workshop 23 (Concord J Ballroom) Metals Beyond Mercury: Measurement and Control of Other Haps by Connie Senior, REI	Workshop 24 (Carolina Ballroom) Effects of Biomass on Particulate Equipment O&M by Tom Lugar, Buel Division of F-K
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10:30 - 11:00 Break in Exhibition Hall

11:00 - 12:00	Panel I (Concord J Ballroom) A Review of Mercury Removal Injection Technologies with a Cost Comparison /Chairman: Jean Bustard, ADA-ES / Panelists: Brandon Looney, SoCo; Sid Nelson, Albemarle; Rob Nebergall, North; Randy Fields, Dynegy; Philip Elliott, Exxonk	Workshop 25 (Kannapolis Ballroom) Improving Existing Scrubber Performance by Mike Hammer, MET	Workshop 26 (Concord J Ballroom) How Condition Monitoring Can Reduce FF Operating Costs by Rod Hansen, RE Consulting	Workshop 27 (Concord G-H Ballroom) TR Set Life Extension by Mary Watson, CE Power Solutions
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12:00 - 1:30	Panel II (Concord G-H Ballroom) Biomass, Co-Firing and Alternative Fuels /Chairmen: Jeff Wilson, Southern Co Panelists: by Kevin Toupin, Riley Power; Matt McArdle, Mesa; Kevin Davis, REI; Andrew Grant, Biomass Energy Hold.; Orest Walchuk, Nalco Mobetec; Claudia Banner, AEP; Dave O'Connor, EPR; Curt Biehn, Mississippi Lime	Workshop 28 (Concord J Ballroom) Concrete Friendly Mercury Sorbents by Daryl Lipscomb, Albemarle	Workshop 29 (Carolina Ballroom) What is Needed to Change from Coal to Biomass? by Kevin Toupin, Riley, Power	Workshop 30 (Kannapolis Ballroom) Low Cost FGD Technology Designed for Small (<250MW) Utility Boilers by Jonas Klingspor, URS
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1:30 - 3:00	Workshop 31 (Concord I Ballroom) COHPAC/TOXECON/ESP/FF Combination by Ken Cushing, SRI	Workshop 32 (Concord G-H Ballroom) ESP T/R Diagnostic Evaluation Program by Karl Jakob, Weidmann Diagnostic	Workshop 33 (Concord J Ballroom) Higher Mercury Capture Efficiency Through Control of Hg Speciation by John Meier, Nalco/Mobetec	Workshop 34 (Carolina Ballroom) Biomass Handling by Steve Engstrom, Stock Equipment
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3:00-3:30 Break in Exhibition Hall

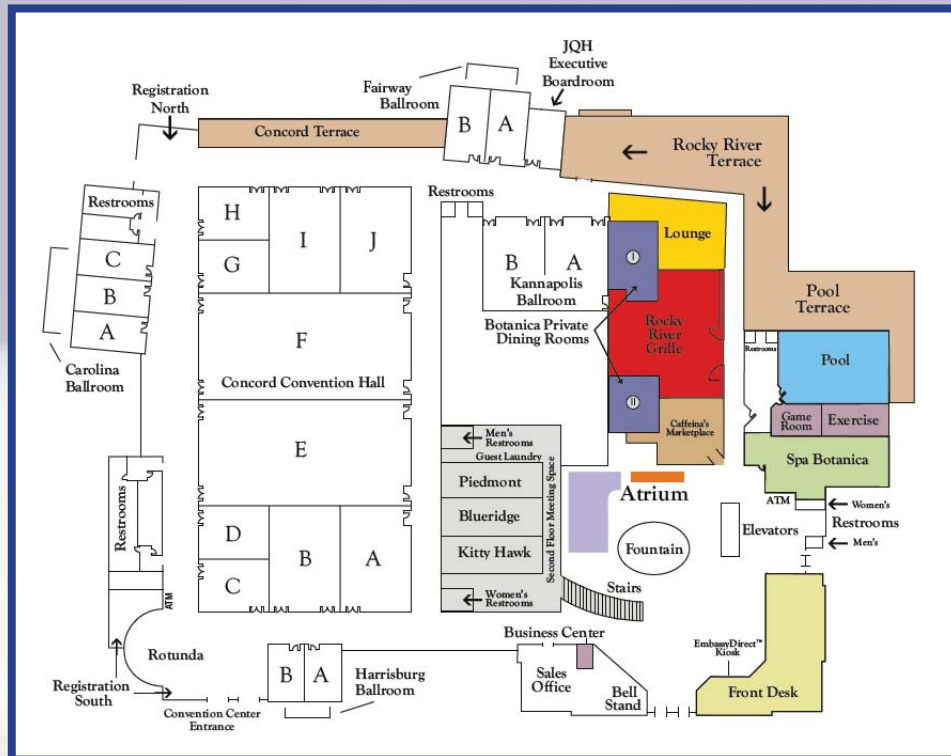
3:30 - 4:30 **Workshop 35 (Kannapolis Ballroom)**
CDS Scrubber Technology
by Tony Licata, Babcock Power

July 21-22, 2010 - Wednesday & Thursday - PCUG Meeting

July 23, 2010 - Friday / Plant Tour of Marshall Plant

(open to all PCUG attendees)

Hotel Floor Plan



Workshops and Panels

Monday, July 19, 2010
8:00 to 9:30 am

Training Class 1 (A): “Fabric Filter Fundamentals” by Richard L. Miller, ADA-ES (Kannapolis A Ballroom)

- Basic introduction on fabric filter technology including reverse gas and pulse jet technologies.
- Emphasis on the current trend to utilize pulse jet design and the various forms of pulse jet technologies including:
 - Stand alone pulse jets
 - ESP to Fabric Filter conversions
 - TOXECON/COHPAC designs
- Precautions needed while using TOXECON type pulse jets and potential impact of using activated carbon for mercury control and higher sensitivity to self heating of the carbon.
- Potential changes needed with upcoming boiler MACT rules for tighter emission limits.

Training Class 2 (A): “Basic ESP Fundamentals” by Gerry Klemm, Southern Company (Concord G-H Ballroom)

This training class will be just an introduction. It will cover electrostatic precipitator general design and the aspects of the American and the European configurations. It will also cover a description of the major components and their functions.

Training Class 3 (A): “Biomass 100% and Co-Firing Basics” by Kevin Davis, REI (Carolina Ballroom)

Experimental, theoretical and computational descriptions of biomass combustion have been under development for many years. However, the descriptions necessary for use in modern practical analyses create inherent challenges and are typically not as well developed as those used for coal combustion. Key fundamental issues that have been addressed and their application to modern engineering analyses for direct- and co- firing scenarios will be discussed

Training Class 4 (A): “Wet Scrubber Fundamentals” by Mike Walsh & Mike Hammer, MET (Kannapolis B Ballroom)

This training class provides an overview of the WFGD process, types of systems, basic chemistry, materials of construction, major components, and operational considerations.

Workshops and Panels

Monday, July 19, 2010

10:00 to 11:30 am

Training Class 1 (B): “FF O&M Training – Start-up Practices, Troubleshooting, Bad Bag Detection” by Paul Foster, Alstom (Kannapolis A Ballroom) This training class will be detailing the following topics during the presentation:

- Proper and improper routine maintenance activities; The effects of improper pulse pressures and pulse pressure recovery
- Troubleshooting fabric filter operational issues - Tell-Tail signs for bag issues
- Pre-coating procedures, methods for pre-coating to minimize fallout and recommended pre-coat materials
- Instrument air supply and moisture related problems; Compartment cover sealing
- Hopper vibrators operation; Commissioning techniques

Training Class 2 (B): “ESP Advanced Fundamentals” by Russ Ridgeway, Shel-B Consulting (Concord G-H Ballroom)

“Basic ESP Fundamentals” told you how your ESP is designed and should work. ESP Advanced Fundamentals will show you how to diagnose your ESP and how external factor can influence its operation.

Training Class 3 (B): “Biomass 100% and Co-Firing Actual Experience” by Orest Walchuk, Nalco Mobetec (Carolina Ballroom)

This training class will present feedback from operations experience at several installations in Europe that have converted from firing coal to either cofiring or firing 100% biomass. A number of these facilities have many years of operating experience, and their experiences and lessons learned may benefit others who are considering similar repowering activities. The focus of this session will be on what the relevant characteristics are that differentiate coal from biomass, and how these differences may affect operation of existing APC equipment originally designed for coal firing, and what issues must be addressed when switching to significant amounts of biomass-based fuels.

Training Class 4 (B): “Wet Scrubber Lessons Learned Discussion” moderated by Steve Wolsiffer, RE Consulting / Discussion participants: Gordon Maller, URS, Tony Licata, Babcock Power, Bob Nicolo, Hitachi (Kannapolis B Ballroom)

This training class is a discussion format targeting improvements to FGD materials, maintenance features, instrumentation, process control and critical issues relative to FGD system reliability. A panel of vendor and utility operations/maintenance personnel will be available to offer design features and operational issues that have improved recent FGD installations. Audience participation and questions are encouraged.

Training Class 5 (B): “Proposed Boiler MACT, Boiler GACT, CISWI Regulations and Concerns”

by Robert W. Tisone, Kuttner NA/Luehr (Concord I-J Ballroom)

Training will air pollution requirements proposed by the new MACT, Boiler GACT and CISWI regulations. How to achieve these values with APC equipment and concerns of how these regulations will change startup and monitoring procedures. Analyze of what is or is not achievable with today’s technology and European experience in meeting these similar conditions.

LUNCH (11:30 to 1:00)

1:00 to 2:30 pm

Welcome: “Presentation of Round Table Lifetime Awards” by Susan Reinhold, Reinhold Environmental (Concord I-J Ballroom) The Round Table Awards will be given to Michael Nelson, Southern Company and Jean Bustard, ADA-ES.

Keynote Speech: “Cliffside 6 – A Modern Coal Unit” by Harry Lancaster, Project Director Cliffside 6, Duke Energy (Concord I-J Ballroom)

The Keynote Address will discuss the emission limits and pollution control equipment installed at the new Duke Energy coal unit at Cliffside Unit 6.

3:00 to 4:00 pm

Workshop 1: “What Are the Sulfur Limits For A Fabric Filter” by Bob Taylor, GE Energy Environmental Services (Kannapolis A Ballroom)

This workshop will be a discussion of the impact of fuel sulfur content on fabric filter operation including; potential casing corrosion, filter media impacts, and bag cleaning effectiveness.

Workshops and Panels

Monday, July 19, 2010
3:00 to 4:00 pm (continued)

Workshop 2: “Combustion and SCR Effects on ESPs and FFs” by *Bob Crynack, Crynack Consulting* (Concord G-H Ballroom)

The primary focus of this workshop is the impact of coal type and its combustion on the operation and performance of the down stream particulate control equipment. The impact of SCR's and their byproducts on particulate control equipment is also discussed in this workshop.

Workshop 3: “Managing Coal Combustion Products – Review of Recent Projects and Proposed Regulations” by *Mark D. Rokoff, URS* (Concord I-J Ballroom)

Although this is not the first time CCP materials have caught the attention of the U.S. EPA, it is certainly the most likely to lead to a dramatic change to the industry. This presentation will focus initially on the events prior to the recent issuance of the draft proposed rules on May 4, 2010 summarizing the significant actions by government, organizations, and the U.S. EPA throughout the years. The direction will then shift to explain and summarize the outcome of the draft proposed rules and their likely implications (i.e. the effects of a hazardous designation, etc.). Before closing, the presentation will suggest actions to be taken by utilities and discuss what can be expected in the near and long term futures for CCP management as well as address some related projects successes. However, simply stated, business as usual will no longer be business as usual!

Workshop 4: “CO₂ Experience” by *Sean Black, Doosan* (Carolina Ballroom)

This workshop will provide a review of the three predominant technologies being developed to capture CO₂: pre-combustion, oxy-combustion, and post-combustion. Particular focus will be given towards oxy and post-combustion, as these technologies can be retrofitted to the existing fleet of coal-fired power plants. This workshop will also summarize a program to develop oxy and post-combustion technologies for power generation.

Workshop 5: “Dual Loop Scrubber Improvement at Muscatine Power & Water Using Nozzle Technology” by *Rob Van Durme, Lechler* (Kannapolis B Ballroom)

This workshop will go over the retrofit of Muscatine Power & Water's Unit 9 Research-Cottrell scrubber. We will discuss the goals the plant wanted to achieve, what was performed to achieve them, and the results of the changes. In addition, the workshop will go over the different types of nozzle technology that are being used in today's scrubbers, their designs and features, and give an overview of some recent installations.

4:30 to 5:30 pm

Workshop 6: “How to Get the Most Out of your Filter Media” by *John Darrow, W.L. Gore & Associates, Inc.* (Kannapolis A Ballroom)

Pending changes in emissions regulations and fuel switching are creating more demanding conditions for fabric filter systems. Upgrading to a high performance filter media can be a significant investment. To get a good return this investment requires (1) system evaluation, (2) system optimization and (3) preventive maintenance practices. Cases from utilities and independent power producers are used to illustrate these points.

Workshop 7: “ESP's And Mercury Removal?” by *Mick Chambers, SEI* (Concord G-H Ballroom)

This workshop will present data that suggests that ESP's may be a cost-effective alternate to baghouses for particulate and mercury removal in utility power plants. Improvements plus new sorbent technologies may yield lower cost for mercury compliance

Workshop 8: “Airheater Pluggage – How Do We Stop It?” by *John Guffre, Paragon Airheater* (Concord I-J Ballroom)

This workshop will address the issue of Airheater fouling and other related air heater problems stemming from Ammonium Bisulfate deposits in the air heater resulting from the addition of SCR's to control NOx emissions. A variety of practical solutions will be presented, as well as some new developments that hold promise for the near future.

Workshop 9: “Recent SO₃ Mitigation Experience” by *Mark A Thomas, Duke Energy* (Carolina Ballroom)

This workshop will include a summary of recent SO₃ mitigation experience from industry professionals. A discussion of lessons learned and SO₃ mitigation co-benefits will also be included. Active audience participation is encouraged.

Workshops and Panels

Monday, July 19, 2010

4:30 to 5:30 pm continued

Workshop 10: “Considerations When Welding FGD Alloys” by *Ron Richard, RE Consulting* (Kannapolis B Ballroom)

When welding stainless steel, duplex stainless steel and nickel alloys that will be used in a FGD system, there are a few basic principals and practices that must be understood if one is to obtain welds that will provide trouble free service.

******RECEPTION (5:30 to 6:30)******

Tuesday, July 20, 2010

8:00 to 9:00 am

Workshop 11: “Converting an ESP to a Fabric Filter” by *Tom Lugar, Buell Division of Fisher-Klosterman* (Concord I Ballroom)

New emission regulations for hazardous air pollutants (HAPs) that include mercury, and for fine particulate, PM_{2.5}, may require re-evaluating compliance strategies if an ESP is currently installed. A lower cost option to consider if the ESP must be replaced is conversion of the existing casing to a pulse-jet fabric filter. This Workshop will present guidelines/criteria to determine if an ESP is a candidate for conversion and present details of recent conversions.

Workshop 12: “ESP Operating With High Sulfur Coals – What Is the Maximum Sulfur Content We Can Tolerate?” by *Ron Triscori, RE Consulting* (Concord G-H Ballroom)

So you think that precipitators are a commodity! The days of high resistivity fly ash performance problems are being quickly replaced with a whole new list of low resistivity problems. This workshop covers key dry ESP performance and operational issues which may result from switching to high sulfur coal after installing a scrubber or from implementing NO_x control systems on a unit with a previously well performing dry ESP. Also covered are mitigation technologies and injection locations for units where opacity problems have occurred unexpectedly.

Workshop 13: “Converting From a Wet Ash to Dry Ash System – Boiler Ash and Flyash” by *Gary Mooney, Clyde Bergemann Delta Ducon* (Concord J Ballroom)

With current issues related to wet ash storage and conveying, many plants are exploring ways to convert their existing wet ash handling systems to state-of-art dry systems. This topic will discuss what options are available for wet to dry conversions of both fly ash and bottom ash systems. The goal of the presentation will be to provide insight on wet to dry ash conversion systems, how they operate and what obstacles exist when designing and selecting the system.

Workshop 14: “FGD Waste Water Treatment Options” by *Brian Heimbigner, Siemens* (Carolina Ballroom)

This workshop will describe the characteristics of flue gas desulfurization wastewater (FGD WW), the desired characteristics of treated water, and the considerations that must go into the design and supply of an appropriate system. The system design must take into account the utility’s objectives, regulatory requirements, normal building standards and codes, and the operators’ needs. A standard physical treatment system for treat and release will be described and depicted. That will be followed by additions/modifications to the system for special treatment for selenium, total nitrogen, arsenic, and other trace or heavy metals, and very low levels of mercury. Treatment processes will include physical/chemical, biological, membrane, and thermal.

Workshop 15: “Improving Existing Scrubber Performance” by *Mike Hammer, MET* (Kannapolis Ballroom)

This workshop will discuss the types of enhancements and drivers of upgrades, case studies and value considerations. The evaluation of existing FGD systems for their potential performance and the integration of the evaluation as an upgrade has become more prevalent in the present market place. Existing Wet FGD systems are being required to meet ever changing regulations, these improvements can be rather limited in nature or involve major retrofit or rebuild work. Upgrades for absorbers, reagent preparation islands and gypsum dewatering systems can be motivated by both environmental regulations and plant economics. Some insight into the thought process and the potential of what can be done with existing systems is to be reviewed.

9:30 to 10:30 am

Workshop 16: “Fabric Filter Bag Life Assessment” by *John McKenna, ETS Inc.* (Concord I Ballroom)

This workshop will cover the purpose of and approach to bag life assessment by considering the following: available fabric test methods, fabric & bag specification, typical Quality Assurance/Quality Control programs, bag monitoring programs, and identification of the point at which a bag change out is required.

Workshops and Panels

Tuesday, July 20, 2010

9:30 to 10:30 am

Workshop 17: “Boiler Combustion/Boiler Tuning To Improve Emission Controls” by *Tom Weir, Duke Energy* (Concord G-H Ballroom)

Focusing on the fundamentals of boiler combustion / NO_x control can be key to achieving a station’s operational goals – emissions as well as performance. Typical station goals include minimizing NO_x, opacity, CO and LOI while maximizing steam temperatures and boiler efficiency. This session will provide a utility’s perspective on evaluating a boiler combustion setup with a particular focus on secondary air management to create the desired balance of station goals.

Workshop 18: “Mercury ACI Systems” by *Kevin Fisher, Apogee Scientific* (Concord J Ballroom)

This workshop will cover experience based techniques that help in problem solving regarding deploying and optimizing dry sorbent injection systems. The presentation will also attempt to cover some of the lessons learned, both by Apogee and the rest of the industry, with regards to employing dry sorbent injection at utility plants for continuous operation.

Workshop 19: “Dry FGD Basics Operations and Maintenance” by *Travis Reynolds, Alstom* (Carolina Ballroom)

This workshop will highlight experience in the dry flue gas desulphurization business, including an overview of both spray dryer absorbers (SDA) and NID technologies. The two technologies will be compared to show their differences, and the list of strengths and weaknesses of each will be presented. Finally, the operation and maintenance of primary equipment will be discussed, incorporating lessons learned from previous projects as well as feedback from various plant personnel.

Workshop 20: “Corrosion/Erosion of FGD Components” by *Gordon Maller, URS* (Kannapolis Ballroom)

This workshop will present background information concerning the fundamentals of corrosion, will provide a history of how corrosion issues in scrubbers have been dealt with in the past, and will conclude with guidelines for material selection and for preventing corrosion problems.

11:00 to 12:00 am

Workshop 21: “Why Is Gas Flow Important In FF Design” by *Stephen Bowen, Nels Consulting* (Concord I Ballroom)

This workshop will consist of the discussion of the requirements for optimized gas flow within a fabric filter, various issues resulting from problematic gas flows and various modeling techniques utilized to correct gas flow problems. Also, the workshop will discuss the methodology behind different modeling techniques and how they are conducted and utilized to optimize fabric filter design.

Workshop 22: “Mid-Frequency T/R Technology” by *Roland Metz and Dr. Michael Steingraeber, Siemens Industry Inc.* (Concord G-H Ballroom)

This workshop will discuss the performance increase and the benefits of the 500 Hz application as well as the 60Hz application with the reuse of existing T/R sets. We will explore the merits of operating at mid-frequency compared to 60 Hz and high frequency and finally discuss an upgrade path that can provide proof of performance increase before the actual investment.

Workshop 23: “Metals Beyond Mercury: Measurement and Control of Other HAPs” by *Connie Senior, Reaction Engineering International* (Concord J Ballroom)

The 1990 Clean Air Act Amendments (CAAA) specify a list of 187 hazardous air pollutants (HAPs) that cause or may cause cancer or other serious health effects. The U.S. EPA must decide how to regulate air emissions from coal-fired power plants. The rulemaking process will include consideration of emissions and potential regulation of other HAPs besides mercury. Considerable effort has been expended over the last decade to develop technology for the control of Hg from coal-fired power plants. Much less is known about the control of other HAPs. Data on HAPs emissions (As, Se, etc.) will be reviewed and the prospects for future controls will be discussed.

Workshop 24: “Effects of Biomass on Particulate Equipment O&M” by *Tom Lugar, Buell Division of F-K* (Carolina Ballroom)

In this workshop topics to be presented include: types of boiler retrofits for biomass firing, differences in ash characteristics with the types of boiler retrofits, ESP performance considerations with biomass, applicability of baghouses, demonstrated performance of biomass-fired ESPs, concerns with wood firing and ESP hopper fires, and case studies.

Workshops and Panels

Tuesday, July 20, 2010
11:00 to 12:00 am continued

Workshop 25: “Hydrated Lime Handling from a Lime Supplier’s Perspective” by *Curtiss Biehn, Mississippi Lime* (Kannapolis Ballroom)

The use of hydrated lime for mitigation of SO₃ is an accepted practice in the Utility industry. As this market developed, issues with conveying hydrated lime have occurred. Some of these issues are inherent with dilute-dilute phase conveying that is required for flue injection of hydrate. Many of the problems can be minimized through awareness of potential design problem areas. For the most stringent applications, some degree of carbon dioxide scrubbing should occur to maximize system on-stream time. This presentation will review general considerations for dilute phase conveying hydrated lime. Results of a test system will also be presented along with recommendations for best practices.

LUNCH (12:00 to 1:30)

1:30 to 3:00 pm

Panel I: “A Review Of Mercury Removal Injection Technologies With A Cost Comparison” *Chairman: Jean Bustard, ADA-ES / Panelists: Brandon Looney, Southern Company; Sid Nelson, Albemarle; Rob Nebergall, Norit; Randy Fields, Dynegy; Philip Elliott, Evonik* (Concord J Ballroom) Panelists will provide an overview of commercial injection technologies that are best suited to achieve 90% or greater mercury removal on different configurations. Overviews will include examples of test results and estimated capital and O&M costs.

Panel II: “Biomass, Co-Firing and Alternative Fuels” *Chairman, Jeff Wilson, Southern Company / Panelists: Kevin Toupin, Riley Power; Dave O’Connor, EPRI; Matt McArdle, Mesa Engineering; Kevin Davis, REI; Andrew Grant, Biomass Energy Holdings; Orest Walchuk, Nalco Mobetec; Claudia Banner, AEP* (Concord G-H Ballroom) This panel will address utility concerns and questions associated with Biomass. Topics may include, but are not limited to: biomass combustion concerns, the economics of repowering, co-firing, and greenfield/brownfield sites, handling and pre treatment improvements, and the future of legislation and regulations as they pertain to biomass. The panel will be bringing a wealth of experience and knowledge from a variety of backgrounds associated with biomass.

3:30 to 4:30 pm

Workshop 26: “How Condition Monitoring Can Reduce Fabric Filter Operating Costs” by *Rod Hansen, RE Consulting* (Concord I Ballroom)

This workshop deals with research into condition monitoring of installed fabrics plus evaluation of various trial fabric blends, treatment and fabric constructions. The prime objective is to identify longer lasting and less costly materials customized for specific environments.

Workshop 27: “TR Set Life Extension” by *Marty Watson, CE Power Solutions* (Concord G-H Ballroom)

This workshop will discuss the options available to the users for extending the life of the TR sets. Simple troubleshooting techniques, step by step guidelines of what to look for, and how to verify your system is running correctly without the sophisticated equipment that can be technically challenging to operate while troubleshooting the TR sets and controls. We’ll also explain and define oil diagnostics to extend the life of the TR set.

Workshop 28: “Concrete Friendly Mercury Sorbents” by *Daryl Lipscomb, Albemarle* (Concord J Ballroom)

Approximately 20% of power plant flyash is profitably sold for use as a substitute for cement in concrete. If traditional powdered activated carbons are used by these plants for mercury emission reductions, the resulting flyash can no longer be sold for this high-value use. This presentation will cover the results of two full-scale commercial utilities currently using carbon-based concrete-friendly mercury sorbents. It focuses on the mercury removal achieved (> 80%), while continuing to maintain the marketability of the flyash as a replacement for cement in concrete. Additional techniques for preserving flyash will also be covered.

Workshop 29: “What Is Needed To Change from Coal to Biomass?” by *Kevin Toupin, Riley Power* (Carolina Ballroom)

The conversion of existing fossil fuel-fired power plants to 100% biomass is an increasingly appealing option. There is a need to understand the effect on boiler performance and the modifications required when investigating the feasibility of converting to biomass firing. This workshop reviews the evaluation criteria and limiting factors applicable to biomass conversions for both the boiler and environmental equipment.

Workshops and Panels

Tuesday, July 20, 2010
3:30 to 4:30 pm continued

Workshop 30: “Low Cost FGD Technology Designed For Small (<250MW) Utility Boilers” by *Jonas Klingspor, URS* (Kannapolis Ballroom)

This workshop will provide an overview of the new MACT rules for smaller industrial and utility boilers. An overview of the demographics of the smaller boiler population in terms of number of boilers, generating capacity, contribution to the overall power generation, and use of FGD systems will be discussed. A summary of low cost control technologies for SO₂ emissions from smaller boilers, such as furnace injection, duct injection, and the URS Co-Flo™ FGD system will be provided.

4:30 to 5:30 pm

Workshop 31: “COHPAC/TOXECON/ESP/FF Combination” by *Ken Cushing, SRI* (Concord I Ballroom)

This workshop will review the COHPAC and TOXECON processes and how they can be used to enhance particulate collection in a small footprint (COHPAC) and minimize sorbent injection rates while maximizing sorbent utilization for toxic metals removal (TOXECON). Specific installations of these technologies will be reviewed.

Workshop 32: “ESP T/R Diagnostic Evaluation Program” by *Karl Jakob, Weidman Diagnostic* (Concord G-H Ballroom)

As the U.S. EPA enforces compliance with its Clean Air Act, the importance of ESP performance continues to rise. The failure of an ESP transformer/rectifier can limit the performance of the ESP system and, therefore, limit production. This presentation will discuss the use of fluid analytical tests and its interpretation to evaluate the current condition of your ESP transformer/rectifier.

Workshop 33: “Higher Mercury Capture Efficiency through Control of Hg Speciation” by *John Meier, Nalco/Mobetec* (Concord J Ballroom)

This workshop will be presenting demonstrations of halogen injection for promoting mercury oxidation as a precursor to a mercury control strategy for coal fired boilers. Also presented will be information regarding control of mercury concentrations in FGD Wastewater treatment streams in order to meet permitted discharge limitations.

Workshop 34: “Biomass Handling” by *Steve Engstrom, Stock Equipment* (Carolina Ballroom)

Once a decision has been made on fuel type, one must consider how the material will be transported, delivered, unloaded, stored, reclaimed, transferred to intermediate storage and fed into the boiler or process. We will discuss the many variables or factors that influence equipment selection for each of these areas of the material handling system. With the proper selection, unloading systems and handling systems are able to handle multiple fuels, reducing the supply pressure and allowing better management of market fluctuations of fuel cost.

Workshop 35: “CDS Scrubber Technology” by *Tony Licata, Babcock Power* (Kannapolis Ballroom)

The Circulating Dry Scrubbing Technology (CDS) has become a major technology option for utility coal fired plants over the past few years. The versatility of the technology and enhanced performance over spray dryers as a multi-pollutant control system has created opportunities to employ CDS on both retrofit and new boiler applications. With the forth coming Utility MACT rule there will be increased applications for CDS systems. This workshop will describe the basic fundamentals of CDS systems and how then can be used in the overall compliance strategy at coal-fired power plants.

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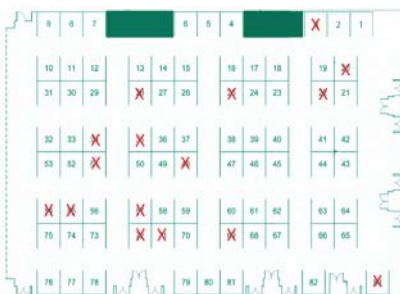
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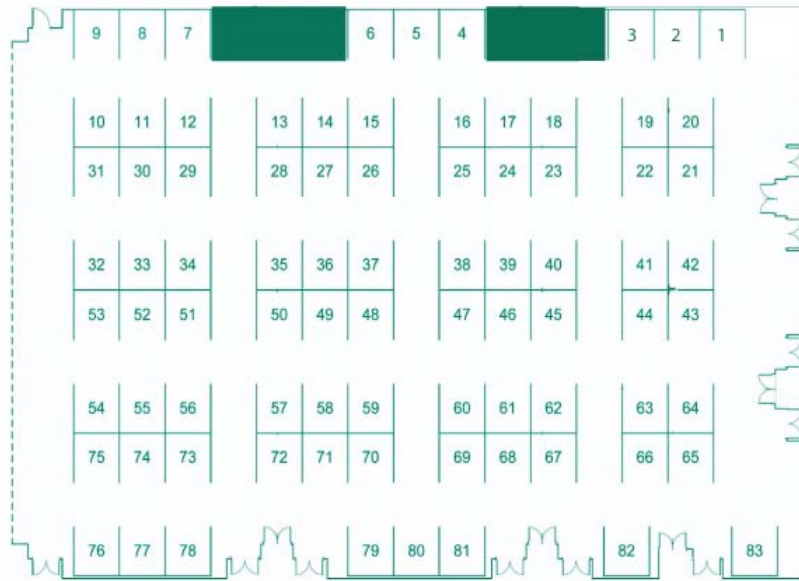
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Kiewit.....34

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Marsulex Environmental Technologies (MET) provides air pollution control technologies including Limestone, Lime and Sodium based WFGD, and proprietary Ammonium Sulfate WFGD with saleable fertilizer by-product. MET offers engineering studies, upgrades of existing FGD systems and OEM FGD systems for new and existing plants. For your next project requiring environmental solutions, choose MET - Marsulex Environmental Technologies.

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Fax: 803-663-4029
www.menardifilters.com



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385 Battaile Drive
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John Brown, Sales Manager
sales@midwescofilter.com
Business: 800.336.7300
Fax: 540.667.9074
www.midwescofilter.com



Midwesco® Filter Resources, Inc. is a global industrial air filtration leader based in Winchester, VA. The company manufactures and distributes air filter elements in 100 market segments across six continents. We maintain a large diversified inventory of high quality custom made dust collector and baghouse filter bags, cartridge filters, pleated elements, and baghouse accessories in our global manufacturing facilities.

Mississippi Lime.....27

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St. Louis, MO 63127
Eric Van Rens, Vice President,
Sales and Marketing
ecvanrens@mississippilime.com
Business: 314.543.6365
Fax: 314.543.6565
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Mississippi Lime is the only fully integrated lime producer in North America - natural calcium carbonate, calcium oxide, calcium hydroxide and precipitated calcium carbonate. Headquartered in St. Louis, MO with production facilities in Ste. Genevieve, MO, Vicksburg, MS, Wierton, WV and Chester, SC with various terminals throughout North America. Let Mississippi Lime work with you to select, trial and implement the proper Hydrated Lime to meet your SO3 mitigation requirements. Our low cost, high purity, high surface area Hydrated Lime is definitely the "Clear Choice." For more information, call 1-800-437-5463.

Nalco Mobotec.....

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Gary Tonnemacher, P.E.
gtonnemacher@nalcomobotec.com
Business: 919-380-0683
www.NalcoMobotec.com



Nalco Mobotec helps businesses meet environmental challenges, including the global tightening of air quality regulations and the need to reduce critical pollutants: nitrogen and sulfur oxides (NOx and SOx), mercury, hydrogen chloride, CO2, and particulates, among others. The Nalco Mobotec core technology modifies the combustion process and creates a superior mixing environment in the furnace, driving complete, efficient reactions to reduce emissions.

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Stephen Bowen, President
stevebowen@nels.on.ca
Business: 905-682-2969, ext 225
Fax: 905-682-6302
www.nels.on.ca



NELS Consulting Services Inc. is a world-class research and development firm specializing in the design, construction and testing of fluid flow models of air pollution control, power generation and all other industrial systems. NELS develops unique solutions and systems for projects using modeling techniques both Physical and CFD, pilot scale testing, EPA emission testing, prototyping and developing full scale systems.

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Jerry C. VanDerWerff, National Sales Mgr.
JerryVanDerWerff@nol-tec.com
Business: 651-780-8600
Fax: 651-780-4400
www.nol-tec.com



Sorb-N-Ject™ Technology, offered by Nol-Tec Systems; dry bulk sorbent injection systems to mitigate SO2, SO3, Hg and HCl emissions effectively and efficiently. We are a global single-source supplier of custom-engineered bulk material handling, pneumatic conveying and integrated control systems – including limestone and fly ash handling systems. Nol-Tec is dedicated to providing the best value in the form of high-quality products and unparalleled customer service.

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P.O. Box 790
Marshall, TX 75671
Rob Nebergall,
Business Manager, Emissions Control Technology
rob@norit-americas.com
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www.norit-americas.com



Norit Americas Inc. is a worldwide leader in purification. Norit is the largest producer of powdered activated carbon worldwide and leads the power generation industry in activated carbon technology for mercury removal. Norit is also the market leader in supply of activated carbon injection systems.

NWL.....78

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3850 Bordeaux Drive
Northbrook, IL 60062
Gary D. Reinhold, President
gary.reinhold@reconsulting.info
Business: 847-562-8556
Fax: 847-562-8894
www.reconsulting.info



RE Consulting is a division of Reinhold Environmental Ltd., a corporation which continues to provide numerous O&M services to the coal-burning utility industry since 1993. Using its team of industry experts, RE Consulting's current focus is to provide engineering studies, on-site training, and O&M based troubleshooting and consulting. In addition, RE Consulting provides training via its state-of-the-art, on-line training manuals as well as customization support for specific plant configurations.

Redkoh Industries.....47

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Siemens Environmental Systems & Services.....36

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Business 412-562-7300
Fax 412-562-7308
www.siemens.com/energy



Siemens is a world leader in the design and supply of air pollution control systems and services for industrial and utility power generation facilities. Technologies include wet or dry FGD systems, fabric filters, wet or dry electrostatic precipitators, and mercury control technology. Aftermarket Services offers technical support, training, rebuild/ upgrade services and replacement parts.

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The SOLVAir® Group.....81

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Take the quiz!

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- What are 3 erection approaches which can reduce outage time for an ESP rebuild?
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- Where are the largest stacked Dry ESP's ever built located?
- What is the most cost effective SO₂, SO₃, PM₁₀, & Hg+2 control system for boilers under 300 MW?

Southern Research Institute.....37

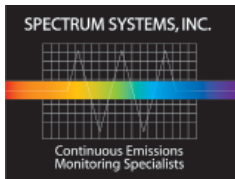
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Southern Research Institute's Power Systems and Environmental Research Department provides air pollution control research, testing and laboratory services for utility, industry, and government clients in the U.S., Europe, and Asia. Our areas of expertise include vapor-phase mercury monitoring, carbon trap mercury measurements, SCR catalyst activity testing, coal combustion research, flue gas analysis for SO₃, Hg, Cl, FTIR gas analysis, ash resistivity testing, chemical analysis of coals and fly ashes, analysis of FGD scrubber liquids and slurries, and water treatment technologies.

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URS is a full-service engineering company. For nearly 30 years, URS, operating as Radian Corporation, has been recognized as a world leader in air pollution and FGD control technology. Today, we are applying our expertise and know-how to upgrade existing FGD systems, build new FGD systems, and design systems to control other pollutants such as mercury and particulate.

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