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19th APC Round Table & Expo

**ESP, Fabric Filter, SO₃ Mitigation, HAPS,
Scrubber and Mercury Control**

Show Guide
2012

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The 19th Annual APC/PCUG Conference is presented by Reinhold Environmental (www.reinholdenvironmental.com)

Hosted by Duke Energy, Entergy, FirstEnergy Southern Company, and TVA

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2012 APC Round Table Agenda

July 16, 2012 - Monday - APC Round Table

Registration opens at 7:00 am outside of Key Ballroom / Expo opens at 7:00 am with Continental Breakfast in Key Ballroom

Technical Training Classes 8:00-11:30

8:00 - 9:30	Training Class 1-A (Key Ballroom 9) Fabric Filter Operation and Maintenance by <i>Tim Stark, GE Air Filtration</i> Bob Brinkley, B&W	Training Class 2-A (Key Ballroom 10) ESP Flange to Flange Lessons Learned Co-Moderated by <i>Jim Chaney, Ameren & Gary Reinhold, REC</i> / Panelists: <i>Paul Leanza, PCS; John Knapik, B&W; Dave Watt, Southern Company; Scott Thomas, Duke Energy</i>	Training Class 3 (Holiday Ballroom) MATS and New Regulation Update by <i>Brad Moulton, Foster Wheeler NA</i>	Training Class 4 (Key Ballroom 11) Dry Sorbent Injection for SO₂ Mitigation and HAPS Curt Biehn, Mississippi Line Greg Filippelli, ADA-ES <i>Roger Ferguson, Ameren</i>	Training Class 5 (Key Ballroom 12) Wet FGD Lessons Learned Discussion Moderator: <i>Steve Wolsiffer and Ron Richard, REC / Panelists: Gordon Maller, URS; Greg Bielawski, B&W; Darryl Wall, Southern Company; Ron Laws, Duke;</i>
9:30 - 10:00	Training Class 1-B (Key Ballroom 9) Bag life Optimization Through Testing by <i>John McKernia and Jeff Smith, ETS</i>	Training Class 2-B (Key Ballroom 10) ESP "Outside the Box" Lessons Learned Co-Moderated by <i>Jim Chaney, Ameren & Gary Reinhold, REC</i> / Panelists: <i>Gerry Klenn, Southern Co.; Scott Williams, Duke Energy; Keith Bradburn, EPSCO; John Knapik, B&W</i>	Training Class 6 (Holiday Ballroom) AOCs Technologies (Hg/HCl/PM/SO₂/NOx) for Meeting Utility Regulations by <i>Chris Wedig, Shaw Group</i>	Training Class 7 (Key Ballroom 11) Scrubber Wastewater Treatment by <i>Mark Ehmschwender & Philip Elliott, Steag</i>	Training Class 8 (Key Ballroom 12) Dry Scrubber Technical Overview by <i>Brandy Johnson, B&W</i>
11:30 - 1:00	Lunch in Exhibition Hall in Key Ballroom				
1:00 - 2:30	General Session (Holiday Ballroom)				
2:45 - 3:45	Presentation of Round Table Lifetime Award by <i>Susan Reinhold</i> Keynote Speech: "Is there a Future for Coal" by <i>Robert Hilton, Alstom Power</i>				
3:45-4:30	Panel 1 (Holiday Ballroom) Mercury and MATS - Part 1 Chairman: <i>Brandon Looney, Southern Co.</i> and <i>Sharon Sposiron, ADA-ES</i> / Panelists: <i>Corey Tyree, Southern Company; Joe Wong, ADA Carbon Solutions; Jim Chaney, Ameren; Scott Evans, Clean Air</i>	Panel 2 (Holiday Ballroom) Mercury and MATS - Part 2 Chairman: <i>Brandon Looney, Southern Co.</i> and <i>Sharon Sposiron, ADA-ES</i> / Panelists: <i>Corey Tyree, Southern Company; Joe Wong, ADA Carbon Solutions; Jim Chaney, Ameren; Scott Evans, Clean Air</i>	Workshop 2 (Key Ballroom 9-10) The Effects of Hydrated Lime Properties on Acid Gas Removal with DSI by <i>Jim Dickerman, Lhoist NA</i>	Panel 11 (Key Ballroom 9-10) ACU/DSI/Halogen Additives and MATS / Chairman: <i>Curt Biehn, Mississippi Line</i> Panelists: <i>Jim Dickerman, Lhoist NA; Bob Mastropietro, KC Cottrell; Mark Thomas, Mark Thomas & Assoc.; Bill Caputo, Bulk Conveyor Specialist Inc.; Yungen Kong, Selvey</i>	Workshop 3 (Key Ballroom 12) New Life for Older Dry FGD Systems by <i>Bob Brinkley, B&W</i>
4:30 - 5:30	Reception in Exhibition Hall (open to all attendees and their families)				

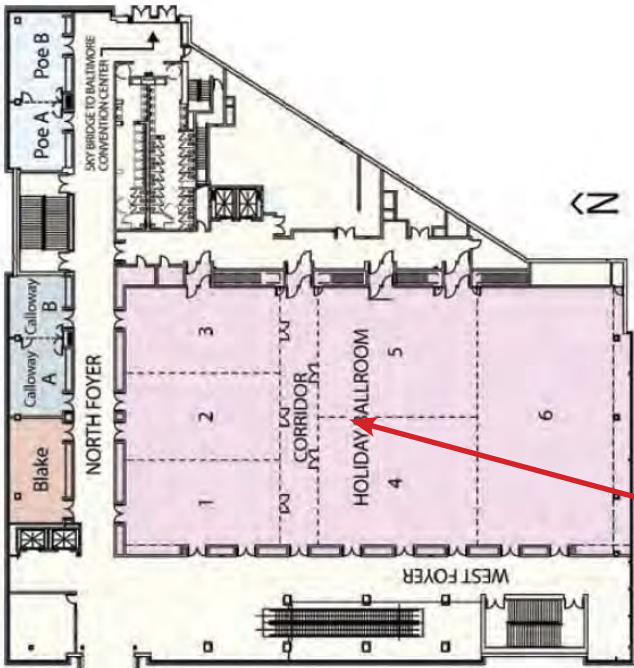
July 17, 2012 - Tuesday - APC Round Table

7:30 - 8:30	Registration outside Key Ballroom				
8:30-9:30	Workshop 4 (Key Ballroom 9) Impact of Coal to Gas Conversion on PM Control Equipment by <i>Bob Taylor, GE Air Filtration</i>	Workshop 5 (Key Ballroom 10) The Little Precipitator that Could by <i>John Knapik, B&W</i> <i>Doug Hartman, FirstEnergy</i>	Workshop 6 (Holiday Ballroom) Low Level Mercury Monitoring using Sorbent Traps to meet MATS Monitoring Requirements by <i>Jim Wright, Clean Air Engineering</i>	Workshop 7 (Key Ballroom 11) Wet Sorbent Injection Experience: Past, Present, Future by <i>Sterling Gray, URS</i>	Workshop 8 (Key Ballroom 12) Scrubber Material ORP Update by <i>Shannon Brown, Babcock & Wilcox</i>
9:30-10:30	Workshop 9 (Key Ballroom 9) Planning and Executing the Refurbishment of Coal-Fired Boiler Bag House by <i>Tim Stark, GE Air Filtration</i>	Workshop 10 (Key Ballroom 10) Challenges in Capturing Very Low to Very High Resistivity Dust by <i>Per Reinstad, Alstom</i>	Panel 11 (Holiday Ballroom) Interaction Between HAP Controls on Conventional Pollution Control Systems Chairman: <i>Doug Hartman, FirstEnergy</i> / Panelists: <i>Mark Thomas, Mark Thomas & Assoc. Consulting; Terry Marsh, Shaw; Jerry Hunt, Nalco; Cam Martin, ADA-ES; Hitachi; B&W</i>	Workshop 11 (Key Ballroom 12) Low Cost Wet FGD Upgrades for MATS by <i>Gordon Maller, URS</i>	Workshop 11 (Key Ballroom 12) Low Cost Wet FGD Upgrades for MATS by <i>Gordon Maller, URS</i>
11:30-12:00	Workshop 12 (Key Ballroom 9) Triboelectric Effect and Mercury by <i>Bruce Salisbury, APS</i>	Workshop 13 (Key Ballroom 10) Rapping Systems by <i>Gerry Klenn, Southern Company</i>	Workshop 14 (Holiday Ballroom) Selection of Powdered Activated Carbon for EPA MATS Compliance by <i>William Naylor, Carbonx</i>	Workshop 15 (Key Ballroom 11) Non-metallic Lessons Learned in FGD (Expansion Joints, Fiberglass, etc.) by <i>Gerald Van Beer, Southern Company</i>	Workshop 16 (Key Ballroom 12) Increase Mercury Capture Efficiency of Wet FGDs by <i>Bruce A. Kaiser, Nalco</i>
12:00 - 1:30	Workshop 17 (Key Ballroom 9) Conversions of ESPs to Fabric Filters by <i>Charlie Barranger, EPSCO</i>	Workshop 18 (Key Ballroom 10) Using an Oscilloscope to Troubleshoot Controls by <i>Russ Ridgeway, SHEL-B</i>	Workshop 19 (Holiday Ballroom) PM Monitoring vs. Stack Testing by <i>Craig Clapsaddle, MSI</i>	Workshop 20 (Key Ballroom 11) Planning and Conducting Effective Sorbent Injection Trials by <i>Mark Thomas, Mark Thomas & Assoc. Consulting</i>	Workshop 21 (Key Ballroom 12) FGD CEMS Design Lessons Learned MATS Monitoring Requirements by <i>Tim Kuitken, Centek</i>
1:30 - 2:30	Workshop 22 (Key Ballroom 9) Fabric Filters in achieving mercury MATS compliance by <i>Rich Miller, ADA-ES</i>	Workshop 23 (Key Ballroom 10) Combustion Impact on PM Control Equipment by <i>Bob Taylor, GE Air Filtration</i>	Workshop 24 (Holiday Ballroom) Maintaining High Level of Mercury Capture in wFGD Absorber by <i>Rich Marsan, Steag</i>	Workshop 25 (Key Ballroom 11) Wet ESP's - More than just adding water by <i>Clive Cottingham, Lodge Cottrell</i>	Workshop 26 (Key Ballroom 12) Polymer Lining Protection for Duplex 2205 Absorber Modules by <i>Jim McCadden, Blome</i>

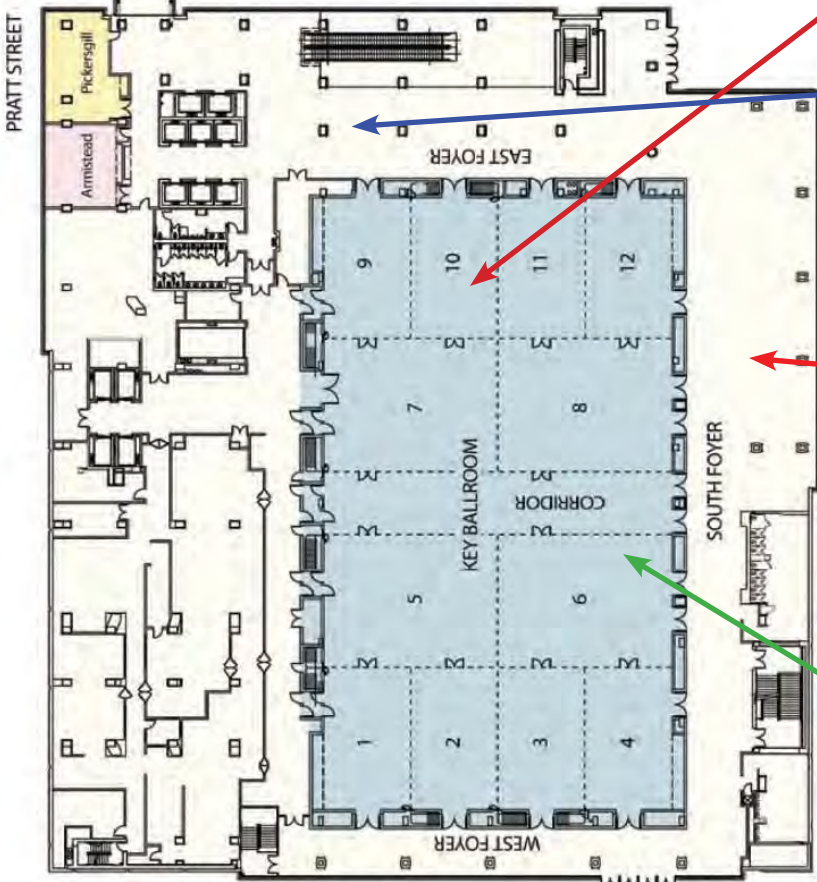
APC Round Table Conference Event / Taste of Baltimore - July 17, 2012 - 6:00 - 10:00 pm
Dinner, Magic Show families invited

July 18-19, 2012 - Wednesday & Thursday - PCUG Meeting for Users only

Hotel Floor Plan



Technical Sessions



Registration Desk

Conference Event in Expo Lobby

Expo



ESPs – upgrades, rebuilds and new OEM systems



ESP Technical Consulting

- Analysis of existing ESP Systems
- Dry Sorbent Injection effects
- Identify Upgrades to meet the latest regs
- In-house fly ash resistivity lab



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(demo and permanent systems)
- Pulse Jet Fabric Filter Systems
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Workshops and Panels

Monday, July 16, 2012

8:00 to 9:30 am

Training Class 1-A: “Fabric Filter Operation and Maintenance” by *Tim Stark, GE Air Filtration and Bob Brinkley, Babcock & Wilcox* (Key Ballroom 9)

This training class covers the key operation and maintenance topics in regards to both reverse-air and pulse-jet style baghouses utilized in utility industry applications. The topic of common challenges with the equipment in these applications and how they are addressed is also covered.

Training Class 2-A: “ESP Flange to Flange Lessons Learned” Co-moderated by *Jim Chaney, Ameren and Gary Reinhold, RE Consulting / Panelists: Paul Leanza, PCS; John Knapik, Babcock & Wilcox; Scott Thomas, Duke Energy; Dave Watt, Southern Company* (Key Ballroom 10)

This interactive audience questions/answers panel will discuss lessons learned “flange to flange” within the ESP as they affect ESP reliability, performance and efficiency relating to meeting the tough new compliance limits in MATS and CSPAR. Potential topics will include power supplies and power density, discharge electrodes, air in-leakage, alignment issues, hopper issues and cleaning.

Training Class 3: “MATS and New Regulation Update” by *Brad Moulton, Foster Wheeler NA* (Holiday Ballroom)

In this training class, the Mercury Air Toxics Standard (MATS) and additional regulations (Cross-State Air Pollution Rule (CSAPR), Boiler MACT, etc.) will be discussed. History, compliance levels, timelines and current legislative status will be covered in this informative session.

Training Class 4: “Dry Sorbent Injection for SO₃ Mitigation and HAPS” by *Curt Biehn, Mississippi Lime and Greg Filippelli, ADA-ES* (Key Ballroom 11)

This training class will discuss dry sorbent options available for SO₃ and HAPS mitigation. Information will include sorbents (to include the need), illustration of control applications (SO₃, HCl, SO₂) and performance data from full scale installations and trials. We will also discuss conveying constraints affecting system design and conveying system design for optimal Dry Sorbent Injection system performance.

Training Class 5: “Wet FGD Lessons Learned Discussion” Co-moderated by *Steve Wolsiffer and Ron Richard, RE Consulting / Panelists: Gordon Maller, URS; Greg Bielawski, Babcock & Wilcox; Darryl Wall, Southern Company; Ron Laws, Duke Energy; Roger Ferguson, Ameren* (Key Ballroom 12)

This training class will be an open discussion between those in attendance and the FGD suppliers and users on the panel. The focus will be on the lessons learned and being learned during the continuing evolution of FGD system design and operation.

10:00 to 11:30 am

Training Class 1-B (1st part): “Bag Life Optimization Through Testing” by *John McKenna and Jeff Smith, ETS, Inc.* (Key Ballroom 9)

This training session will cover fabric/bag testing methods and their value with examples of various premature bag failures. Other topics covered will be design considerations and trade-offs, the importance of fabric and bag specifications, quality assurance/quality control programs, preventive maintenance programs, bag monitoring programs and recommendations on extending bag life.

Training Class 1-B (2nd part): “Flow Modeling and Testing Fabric Filters” by *Craig Rood, Airflow Sciences* (Key Ballroom 9)

This training class provides information about the performance goals for fabric filter units (including flow distribution and balance, pressure loss, thermal mixing, sorbent injection, and particle deposition) and covers flow modeling methods (CFD and physical) as well as field testing techniques. A case study is presented for a mid-sized US coal burning power plant with two new PJFF and both ACI and DSI.

Training Class 2-B: “ESP “Outside the Box” Lessons Learned” Co-moderated by *Jim Chaney, Ameren and Gary Reinhold, RE Consulting / Panelists: Gerry Klemm, Southern Company; Scott Williams, Duke Energy; Keith Bradburn, EPSCO; John Knapik, Babcock & Wilcox* (Key Ballroom 10)

This interactive audience questions/answers panel will discuss lessons learned “Outside of the ESP” as they affect ESP reliability, performance and efficiency relating to meeting the tough new compliance limits in MATS and CSPAR. Potential topics will include

Workshops and Panels

Monday, July 16, 2012 (cont.)

10:00 to 11:30 am (cont.)

Training Class 2-B: cont. the impacts of upstream issues like SO₃, ABS, ACI, DSI, low load operation as well as downstream impacts like scrubber slurry/gypsum quality issues, low dust baghouse/SCR issues and ID fan erosion issues.

Training Class 6: “AQCS Technologies (Hg/HCl/PM/SO₂/NO_x) for Meeting Utility Regulations” by Chris Wedig, Shaw Group (Holiday Ballroom)

This overview training session will address air quality control technologies for meeting utility regulations, including mercury control technologies, dry sorbent injection (DSI) for acid gas control, upgrading electrostatic precipitators (ESP), retrofit pulse jet fabric filters (PJFF), and ESP conversions to PJFF for particulate matter control, circulating dry scrubbers (CDS/NID), spray dryer absorbers (SDA), wet scrubbers (LSFO FGD), including scrubber upgrades for sulfur dioxide control, nitrogen oxide reduction technologies, multi-pollutant processes, and other AQCS technologies and issues for meeting utility regulations.

Training Class 7: “Scrubber Wastewater Treatment” by Mark Ehrnschwender and Philip Elliott, Steag (Key Ballroom 11)

Based on expected tighter regulations on discharge limits from power plants, operators need to understand the abilities of waste water treatment systems. This training class will discuss the expected regulations and advancements in waste water treatment systems.

Training Class 8: “Dry Scrubber Technical Overview” by Brandy Johnson, Babcock & Wilcox (Key Ballroom 12)

This training class is an unbiased review of dry scrubber technologies. Many utilities are evaluating various dry scrubber technologies to determine which one is best for their specific application. This session will present an unbiased overview of the available technologies along with a comparison tree of various aspects of them. In addition, we will discuss thought-provoking questions and items to be considered before the final technology decision is made.

LUNCH in Exhibition Hall (11:30 to 1:00 pm)

1:00 to 2:30 pm

Welcome: “Presentation of Round Table Lifetime Awards” by Susan Reinhold, Reinhold Environmental (Holiday Ballroom)

The Round Table Awards will be given to Ed Healy, Southern Company, Bob Taylor, GE and Russ Ridgeway, formerly of AEP.

Keynote Speech: “Is There A Future for Coal?” by Robert Hilton, Alstom Power (Holiday Ballroom)

In the confluence of abundant supply of gas, low gas prices, environmental regulation, social and legislative pressure for renewables, is there a competitive place for coal? How can the industry support coal? Is there a reasonable strategy in fuel diversification?

2:45 to 3:45 pm

Panel I: “Mercury and MATS – Part 1” Co-Chairmen: Brandon Looney, Southern Company and Sharon Sjostrom, ADA-ES / Panelists: Corey Tyree, Southern Company; Jim Chaney, Ameren; Joe Wong, ADA-CS; Scott Evans, Clean Air Engineering (Holiday Ballroom)

Panelists will provide an overview of commercial Hg control technologies, including a discussion of expected performance and operational experiences. A summary of emerging technologies will also be introduced.

Panel II: “ACI/DSI/Halogen Additives and MATS” Chairman: Curt Biehn, Mississippi Lime / Panelists: Jim Dickerman, Lhoist NA; Bob Mastropietro, KC Cottrell; Mark Thomas, Mark Thomas & Assoc.; Bill Caputo, Bulk Conveyor Specialist Inc.; Yougen Kong, Solvay (Key Ballroom 9-10)

This panel discussion will share information from experts in the dry sorbent, equipment, and utility fields. The panel plans to focus on field testing results and full scale experiences with sorbent capabilities for mitigating HAPS. We will review equipment considerations for optimal conveying of dry sorbents along with system effects of adding a Dry Sorbent Injection system for Air Pollution Control.

4:30 to 5:30 pm

Panel 1: cont. “Mercury and MATS – Part 2”

Workshops and Panels

Monday, July 16, 2012 (cont.)

4:30 to 5:30 pm (cont.)

Workshop 1: “Low Cost Solutions” by Joe Riley, *BoldEco* (Key Ballroom 11)

Low cost add-on and retrofit technologies for PC-fired units will be explored. Solutions will include PM, NO_x, SO_x and Hg control.

Workshop 2: “The Effects of Hydrated Lime Properties on Acid Gas Removal with DSI” by Jim Dickerman, *Lhoist North America* (Key Ballroom 9-10)

Dry Sorbent Injection (DSI) is a low capital cost emission control technology that has been projected by EPA to be installed on over 40 GW of utility boilers for controlling air toxic emissions. This workshop will present an overview of the technology to discuss the key design parameters and will also discuss the development of highly reactive hydrated lime products. A summary of data showing how the optimized hydrated lime performs in comparison to more “standard” hydrate products for acid gas control applications (HCl and air toxics) will be presented, and the impact of DSI on coal combustion byproducts will also be addressed.

Workshop 3: “New Life for Old(er) Dry FGD Systems” by Bob Brinkley, *Babcock & Wilcox* (Key Ballroom 12)

This workshop will cover the various DFGD Systems that have been installed over the years in the utility applications. We will discuss some of the challenges of wear and tear on the equipment and modifications that can be considered to improve the overall performance in order to maintain or meet more stringent regulations.

****RECEPTION in Exhibit Hall (5:30 to 6:30 pm)****

Workshops and Panels

Tuesday, July 17, 2012

8:30 to 9:30 am

Workshop 4: “Impact of Coal to Gas Conversion on PM Control Equipment” by Bob Taylor, *GE Air Filtration* (Key Ballroom 9)

During this workshop we will discuss the impact of switching from coal to natural gas on the downstream PM control equipment. The differences in coal and gas products of combustion are discussed along with the method of accommodating the changes.

Workshop 5: “The Little Precipitator that Could” by John Knapik, *Babcock & Wilcox* and Doug Hartman, *FirstEnergy* (Key Ballroom 10)

In this workshop we will explore emission results from 5 or 6 ESP's with different SCA's, operating modes, and coal types. ESP's located ahead of wet FGD scrubbers, operation with conventional SO₃ and non-traditional conditioning agents, with carbon injection, with SO₃ mitigation systems and dry sorbent injection systems for acid gas control. The authors aim to bring out essential features of each ESP and ways to upgrade ESP's to meet the latest MATS requirement.

Workshop 6: “Low Level Mercury Monitoring using Sorbent Traps to Meet MATS Monitoring Requirements” by Jim Wright, *Clean Air Engineering* (Holiday Ballroom)

This workshop will examine mercury monitoring at utilities affected by the new mercury and air toxics standards. Specifically, we will focus on the use of sorbent traps as a long-term option for measuring mercury at the low levels that MATS will require. We will review the MATS requirements for mercury monitoring, discuss current sorbent trap monitoring technology, and look at real-world data that shows the reliability and robustness of sorbent trap monitoring.

Workshop 7: “Wet Sorbent Injection Experience: Past, Present and Future” by Sterling Gray, *URS* (Key Ballroom 11) As environmental regulations for coal-fired plants become more stringent, electric utilities have installed SCR for NO_x control and FGD for SO₂ control, with many switching to higher sulfur fuels as well. As a consequence, many plants are generating and emitting higher levels of sulfur trioxide (SO₃) in the flue gas. One wet sorbent injection technology, SBS Injection™, has been widely applied to control SO₃ emissions. However, early installations of the technology suffered operational and maintenance challenges that affected the reliability of the system. This workshop will examine that experience, identify root causes of

Workshops and Panels

Tuesday, July 17, 2012 (cont.)

8:30 to 9:30 am (cont.)

Workshop 7: (cont.) operational issues, and discuss design changes made to the process to improve reliability and performance. It will also highlight operating experience from recent installations, including key operating and maintenance practices that ensure reliable operation. Last, the workshop will discuss how reliable and efficient removal of SO₃ prior to the SCR and/or air preheater, can provide significant plant operational and economic benefits in the future, including enhanced NO_x removal, improved heat rate, lower mercury emissions, and reduced corrosion of plant equipment.

Workshop 8: “Scrubber Material ORP Update” by Shannon Brown, Babcock & Wilcox (Key Ballroom 12)

This workshop will discuss WFGD absorber chemistry, specifically oxidation reduction potential (ORP), with regard to chemical phase partitioning. The impact of various slurry constituents on absorber reaction tank materials of construction will be included.

10:30 to 11:30 am

Workshop 9: “Planning and Executing the Refurbishment of a Coal-fired Boiler Bag House” by Tim Stark, GE Air Filtration (Key Ballroom 9)

This workshop reviews the three main stages of executing the change-out of the filters in a reverse-air and pulse-jet style boiler baghouse: planning, execution and start-up/ongoing maintenance practices. Topics covered include on-line versus off-line approach, parts procurement, staging considerations, leak detection, start-up procedures with new filters and important maintenance items to consider during operation.

Workshop 10: “Challenges in Capturing Very Low to Very High Resistivity Dust” by Per Ranstad, Alstom (Key Ballroom 10)

The workshop will cover different aspects and difficulties when capturing dust of different resistivity. Ionization, holding forces, and rapping strategies will be discussed in the context of the energization system. Specifically the dust layer current fluctuations will be addressed and what high frequency power supplies can do to improve performance under these scenarios.

Workshop 11: “Low Cost Wet FGD Upgrades for MATS” by Gordon Maller, URS (Key Ballroom 12)

This workshop will describe low cost modifications that a utility can make to a wet FGD system to meet MATS regulatory requirements for acid gas, PM and Hg emissions. Results for several engineering studies will be discussed which will present the performance level expected for the particular modifications and an economic analysis of the modification compared to other higher cost options.

10:30 to 12:00 noon

Panel III: “Interaction Between HAP Controls on Conventional Pollution Control Systems” Chairman: Doug Hartman, FirstEnergy / Panelists: Terry Marsh, Shaw Group; Mark Thomas, Mark Thomas & Associates; Cam Martin, ADA-ES; Jerry Hunt, Nalco; Babcock & Wilcox; Hitachi (Holiday Ballroom)

In two and a half years, utilities will be challenged with the installation and operation of pollution controls that could impact the operation and performance of the existing particulate and SO₂ controls. This panel will cover the positive and negative impacts of MATS control options (SCR operation, ACI injection, and DSI injection) on the Fabric Filter, ESP and WetFGD.

LUNCH in Exhibition Hall (12:00 to 1:30 pm)

1:30 to 2:30 pm

Workshop 12: “Triboelectric Effect and Mercury” by Bruce Salisbury, APS (Key Ballroom 9)

This workshop will be a technical discussion of the triboelectric effect, and the positive and negative impacts on all of the mercury remediation technologies available to the American coal fleet.

Workshop 13: “Rapping Systems” by Gerry Klemm, Southern Company (Key Ballroom 10)

The presentation Rapping Systems will describe the types of precipitator cleaning systems in use today. It will detail the advantages and disadvantages of each and list the maintenance problems encountered. Finally, recommendations will be made for improvements in future systems.

Workshops and Panels

Tuesday, July 17, 2012 (cont.)

1:30 to 2:30 pm (cont.)

Workshop 14: “Selection of Powdered Activated Carbon for EPA MATS Compliance” by *William Naylor, Carbonxt* (Holiday Ballroom)

Many in the electric generating industry see powdered activated carbon (PAC) for mercury control as a commodity product where in fact incorrect carbon selection could make a difference in your yearly activated carbon costs of several hundred thousands of dollars per year. PACs are different and where they are injected in your power plant can impact their effectiveness and thus yearly costs for compliance. Therefore PAC selection should be based on more than solely cost per pound. This discussion will be based on but not limited to your plant’s coal type, air pollution control devices (existing and planned installations to comply with EPA regulations), fly ash and other by-product salability, and your plant’s overall operations and disposal requirements. Furthermore, activated carbon manufacturing and its properties will be reviewed.

Workshop 15: “Non-Metallic Lessons Learned in FGD (Expansion Joints, Fiberglass, etc.)” by *Gerald Van Beek, Southern Company* (Key Ballroom 11)

This workshop will include discussion on experiences with Non-metallic items in FGD scrubbers. The discussion will include fiberglass components such as piping and structures. The experiences with Expansion joints and changes made to increase reliability will also be discussed. Discussion of problems and solutions experienced by other end users is encouraged.

Workshop 16: “Increase Mercury Capture Efficiency of Wet FGDs” by *Bruce Keiser, Nalco* (Key Ballroom 12)

In this workshop the audience will learn how mercury management within wFGD operations can be changed to improve and meet MATS air regulations. Practical solutions demonstrated on commercial units will be presented.

2:45 to 3:45 pm

Workshop 17: “Conversions of ESPs to Fabric Filters” by *Charlie Barranger, EPSCO* (Key Ballroom 9)

This workshop will discuss the benefits and issues concerning converting existing ESPs to PJFFs. Three different PJFF unit types will be described.

Workshop 18: “Using an Oscilloscope to Troubleshoot Controls” by *Russ Ridgeway, SHEL-B E.E. Consulting* (Key Ballroom 10)

The purpose of this workshop will be to learn how to use and troubleshoot your ESP controls using an oscilloscope. It is a tool you should never leave your office without.

Workshop 19: “PM Monitoring vs Stack Testing” by *Craig Clapsaddle, MSI* (Holiday Ballroom)

During this workshop we will explore the pros and cons of using continuous particulate monitoring or bi-monthly stack testing for MATS compliance. We will look at the differences between using a PS-11 certified PM CEMS and an uncertified continuous particulate monitoring system if your plant chooses continuous particulate monitoring. Audience participation is expected during the session.

Workshop 20: “Planning and Conducting Effective Sorbent Injection Trials” by *Mark Thomas, Mark Thomas & Assoc. Consulting* (Key Ballroom 11)

Many utilities require sorbent injection trials to make critical compliance decisions but too often the results are inconclusive or misleading. This workshop will provide guidance and advice for planning and conducting effective sorbent trials which maximize useful information while keeping trial costs in line.

Workshop 21: “FGD CEMS Design Lessons Learned MATS Monitoring Requirements” by *Tim Kuiken, Cemtek* (Key Ballroom 12)

This workshop will investigate the CEMS design lessons learned from each of the completed projects, including information learned regarding particulate and mercury monitoring. This workshop will investigate the unique issues that arose during the CEMS design, installation, commissioning, and operation and the knowledge gained and solutions utilized for each technical issue. We will also explore the new monitoring requirements for the Mercury and Air Toxic Standard (MATS) including mercury, particulate, and acid gases.

Workshops and Panels

Tuesday, July 17, 2012 (cont.)

4:30 to 5:30 pm

Workshop 22: “Fabric Filters in Achieving Mercury MATS Compliance” by Rich Miller, ADA-ES (Key Ballroom 9)

The use of fabric filters in combination with other technologies such as activated carbon injection, dry sorbent injection, SO₂ control technologies and even coal additives, can be successfully implemented to achieve the required mercury emission reduction limits as identified in the latest EPA MATS rule for air toxics. The use of fabric filters can either be as a standalone design, or in combination with existing ESP's (TOXECON) as a polishing device. This workshop will serve to highlight some of the benefits and cautions that should be considered when utilizing this type of particulate control device for mercury control.

Workshop 23: “Combustion Impact on PM Control Equipment” by Bob Taylor, GE Air Filtration (Key Ballroom 10)

The focus of this workshop is to link changes in combustion characteristics to performance of the downstream PM control equipment. Such topics as fuel characteristics, load changes, sorbent inject and their impact on performance of the PM control equipment are discussed.

Workshop 24: “Maintaining High Level of Mercury Capture in wFGD Absorber” by Rich Marsan, Steag (Holiday Ballroom)

The recent MACT rule positions coal-fired Asset Owners having wet FGDs in the enviable position of meeting the Mercury mandate of 1.2/tBTU. This relatively bright compliance future may hold true but only if maximized oxidation, capture and retention of the Hg is achieved. This discussion will touch upon methods Asset Owners can employ to realize other benefits from their installed wet FGDs.

Workshop 25: “Wet ESP's – More Than Just Adding Water” by Clive Cottingham, Lodge Cottrell (Key Ballroom 11)

This workshop will illustrate the issues involved in designing a reliable Wet ESP (WESP). Some general history is included and all types will be covered, but the emphasis will be on Acid Mist removal.

Workshop 26: “Polymer Lining Protection for Duplex 2205 Absorber Modules” by Jim McCadden, Blome (Key Ballroom 12)

This workshop will detail the corrosion issues encountered in currently operating Duplex 2205 FGD units and discuss the use of Epoxy Vinyl Ester Polymers for the rehabilitation and long term protection of absorber units constructed out of the Duplex 2205 Alloy. The presentation will discuss the proper cleaning, surface preparation, application procedures and Epoxy Vinyl Ester Polymer lining material necessary to achieve a suitable long term lining solution for the protection of the 2205 Alloy absorbers.

Conference Event / Taste of Baltimore

(6:00 to 10:00 pm)

Dinner, Magic Show (starts at 6:00 pm) - families are invited

APC/PCUG Conference

July 8-11, 2013

Renaissance Hotel, St. Louis, MO

Hosted by Ameren





Conference Event: Taste of Baltimore

all attendees and families are invited for dinner and a Magic show on 7/17/12





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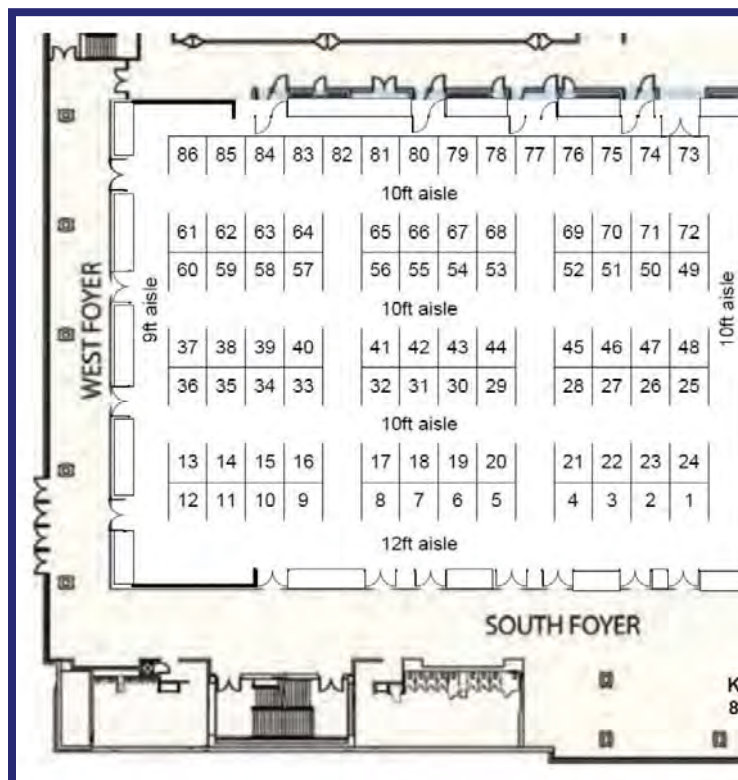
*Please be sure to join us at **Booth #57-58***

The Clear Choice

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ADA Environmental Solutions.....12

9135 S. Ridgeline Blvd, Suite 200
Highlands Ranch, CO 80129
Jim Mitchell, Director of Sales and Marketing
jamesm@adaes.com
Business: 303-734-1727 / www.adaes.com



ADA-ES, Inc is a pioneer in environmental technologies, specialty chemical products, and consulting services for coal-fired power plants, industrial boilers and Portland cement kilns. ADA-ES offers their customers activated carbon injection systems, flue gas conditioning chemicals and injection systems, solid sorbent injection systems, emissions testing services and control technology demonstrations, and refined coal technologies. ADA-ES's solutions enhance existing air pollution control equipment, maximize capital asset value and improve operating efficiencies to meet the challenges of emissions control regulations. In addition, ADA-ES, Inc is developing a solid sorbent CO₂ capture technology.

Airflow Sciences Corporation.....5&6

12190 Hubbard
Livonia, MI 48150
Robert G. Mudry, P.E., President
rmudry@airflowsciences.com
Business: 734-525-0300 / www.airflowsciences.com



Experts in CFD, physical flow modeling, and field testing since 1975. Our modeling provides cost-effective designs for ducts, pulverizers, windboxes, SCR's, ESP's, baghouses, scrubbers, and stacks. Custom field test equipment ensures accurate and efficient measurement of flow, temperature, chemical species, and particulate. The combination of modeling, testing, and engineering expertise makes ASC the one-stop shop for all your flow-related needs.

AirTek.....21

P.O. Box 388, 700 Hudson St.
Troy, AL 36081
John Roberts, President
jr@airtek-troy.com
Business: 334-566-7400 / www.airtek-troy.com



Since 1988, AirTek has been a leading provider of precipitator services. These services include field service engineering, consulting services, construction management, maintenance, new construction, major rebuilds, and the supply of spare parts. AirTek offers this full range of services, in addition to our own line of ESP's, to all users of air pollution control equipment.

Albemarle.....74

451 Florida Street
Baton Rouge, LA 70801
Jack Carmical
mercury@albemarle.com
Business: 800.535.3030 / www.albemarle.com/mercury



Albemarle Mercury Control Div. is a full-service, mercury emission control solution provider to the coal-fired utility, cement kiln, and industrial boiler markets, supplying a variety of proprietary, powder activated carbon (PAC) mercury sorbents, advanced sorbent injection systems, bromine chemicals for mercury removal, and mercury testing and demonstration services. Albemarle Corporation, headquartered in Baton Rouge, LA, is a leading global developer, manufacturer, and marketer of highly-engineered specialty chemicals for several industries and has three business segments, Polymer Solutions, Catalysts and Fine Chemistry. Corporate Responsibility Magazine selected Albemarle to its prestigious "100 Best Corporate Citizens" list for 2010 and 2011.

Alstom Power (Environmental Services Op.).....9&10

9737 Cogdill Road, Suite 230A
Knoxville, TN 37932
Tapan Mukherjee, Business Development
tapan.mukherjee@power.alstom.com
Business: 1-800-966-0554 / www.alstom.com/power/fossil/



Alstom is a global leader in supplying environmental control systems, high frequency power supplies, technical services, and replacement parts for the power generation markets. Alstom's portfolio includes complete systems, equipment upgrades, compo-

nent rebuilds, replacement parts, construction, commissioning and technical services for SCR systems, wet and dry FGD systems, wet and dry ESP's, fabric filter systems and integrated solutions for mercury control. Alstom's track record spans over 100 years of delivering EXPERIENCE, INNOVATION, TECHNOLOGY, and LOGISTICS. See a live demonstration of Alstom's supervisory control system, ProMo in booths 9 & 10.

Apex Instruments, Inc.....48

204 Technology Park Lane
Fuquay-Varina, N.C. 27526, USA
William Howe, President
whowe@apexinst.com
Business: 919-557-7300 / www.apexinst.com



Apex Instruments is a world leader in the design, manufacturing and distribution of source sampling equipment for measuring emissions from smoke stacks and industrial sources according to US EPA guidelines. Our versatile equipment is designed by experienced source samplers for over 36 gaseous and isokinetic methods and Mercury Sorbent Trap Sampling.

A.V.C. Specialists, Inc.....83

5146G Commerce Ave.
Moorpark, CA 93021
Mike Jakstis, General Manager
sales@avcspecialists.com
Business: 805-531-8900 / www.avcspecialists.com



A.V.C. Specialists designs and manufactures voltage control and rapper control systems featuring Modbus communication links with plant DCS. A.V.C. also supplies replacement and upgrade components for all precipitators. In addition to providing inspection and maintenance service, A.V.C. solves difficult rapping problems for hoppers, bins and SCR screen systems.

Babcock Power Inc.....68

5 Neponset St.
Worcester, MA 01606
Tony Licata,
info@babcockpower.com
Business: 508-852-7100 / www.babcockpower.com



Babcock Power, through its various subsidiaries, is a leading worldwide supplier of technology, equipment, and aftermarket services for heat exchangers, HRSGs, steam generators, and environmental products for the power generation, industrial, biomass, solar and waste-to-energy markets.

The Babcock & Wilcox Company.....7&8

20 S. Van Buren Avenue
Barberton, OH 44203
Amy C. Rossi, Sales Development
acrossi@babcock.com
Business: 330-860-1004 / www.babcock.com



B&W is an international leader in the design, manufacture, service and construction of steam generating and environmental equipment. We provide a full suite of options and technologies to meet MATS compliance including SCR systems, FGD systems, fabric filters, electrostatic precipitators, and mercury control and carbon capture solutions. B&W also provides environmental equipment upgrades, conversions, replacement parts, fabric filter cage manufacturing and emissions monitoring systems and service.

Blome International.....28

1450 Hoff Industrial Drive
O'Fallon, MO 63366
Andy Bernard, Partner
andy@blome.com
Business: 636-379-9119 / www.blome.com



Blome International is a full service polymer lining and ceramic tile lining supplier. Blome International has a 30+ year proven history in the power market and is the only coating supplier with a full range of FGD products. Product offerings include flake glass lining systems, ceramics tile systems for FGD modules, high temperature acid resistant gunites and borosilicate lining systems for stacks and ducts.

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BoldEco.....86

88 Orchard Road
Skillman, NJ 08558
Joe Riley, President
jriley@boldeco.com
Business: 609-273-3331 / www.boldeco.com



After years of developing systems for equipment OEMs, our team of original and creative engineers is bringing to market novel ways of re-implementing traditional technologies. BoldEco is dedicated to helping you meet today's compliance challenges at the lowest capital and operating costs with new and retrofit technologies that are truly innovative. Our goal is not to completely re-invent the wheel, but to intelligently re-package existing technologies in such a way as to achieve new levels of efficiency and reliability. We offer solutions for controlling Acid gases, NOx, PM, Hg, Dioxins/Furans, and Heavy metals with technologies that include SCR, SNCR, Wet/Dry/Semi-dry Scrubbers, DSI, ACI, Regenerative Carbon Beds, Humidification, Atomization and Fogging Systems.

Breen Energy Solutions.....54

104 Broadway Street
Carnegie, PA 15106
Chetan Chothoni, COO
CChothoni@BreenES.com
Business: 412-431-4499 / www.BreenES.com



Breen Energy Solutions (BES) provides technologies and solutions to Optimize Dry Sorbent Injection Systems to minimize reagent use, plant BOP impacts and meet the strict condensable/filterable PM requirements for Utility-MACT. BES has an installed base of over 100 AbSensor-SO₃ monitors in the industry with a majority of those in closed loop control for SCR/SNCR performance, Heat Rate Improvement, Air heater protection, Blue Plume and Wet/Dry Sorbent injection controls. BES conducts Dry Sorbent Injection demonstrations that deliver a proven closed-loop optimized sorbent injection control system.

Buell APC (Division of Fisher-Klosterman).....82

200 N. 7th St., Suite 2,
Lebanon, PA 17046
Rick Hicks, Product Manager
rhicks@cecoenviro.com
Business: 717-274-7250 / www.cecoenviro.com



Buell APC provides air pollution control systems and services for the power utility and industrial process industries. Products and services include custom electrostatic precipitators and baghouses, ESP rebuilds and upgrades, precipitator conversion to pulse jet fabric filter, inspections, technical advisory services, engineering evaluations, and replacement parts for Buell and other OEM design precipitators.

BWF Envirotec 4

7453 Empire Drive #340
Florence, KY 41042
Jeff Bernstein, Sales Manager
jbernstein@bwf-america.com
Business: 859-282-4550 x 240 / www.bwf-envirotec.us



BWF Envirotec is the world's leading supplier of filter bags to the power generation market. As both a needle felt producer and bag fabricator, BWF Envirotec has the unique ability to match the gas stream characteristics with the properties of the needle felt ensuring maximum bag performance. In addition, BWF also provides baghouse maintenance services; change outs, mechanical inspections and retrofits our standard services.

Carbonxt, Inc.....15

4110 SW 34th Street, Ste. 22
Gainesville, FL 32608
Caitlin Gross, Marketing Director
cgross@clearcarboninnovations.com
Business: 352-378-4950 / www.carbonxt.com.au



Carbonxt offers non-halogenated (no bromine, bromide, or chlorine additives) activated carbons specifically developed for the removal of mercury from flue gas. Carbonxt PAC offers increased MATS compliance flexibility at lower injection rates, resulting

in overall cost savings. Our carbons can be tailored for specific boiler conditions and their effectiveness has been demonstrated with multiple fuel types and air pollution control devices. The staff of Clear Carbon Innovations (CCI), the R&D division of Carbonxt, is composed of industry-recognized individuals who specialize in flue gas and wastewater product development and process improvement. Carbonxt offers full ACI testing capabilities including two ACI skids, mercury monitoring, and an onsite field team of engineers.

Carmeuse Lime & Stone.....1

11 Stanwix Street, 21st Floor
Pittsburgh, PA 15222
Tony Pallotta, Communication Mgr.
tony.pallotta@carmeusena.com
Business: 412-995-4963 / www.carmeusena.com



Carmeuse Lime & Stone is a leading company, specializing in manufacturing and supplying lime and limestone for diverse applications including the power generation industry for treating flue gas emissions and waste water treatment. Carmeuse products benefit the environment in a variety of ways including cleaner air, cleaner water, and the preservation of land resources. Staffed by up to 2,000 people, Carmeuse has 28 plants that supply and serve most of the USA and Eastern Canada.

Castell Interlocks, Inc.....3

150 North Michigan Avenue
Suite 800, Chicago, IL 60601
ussales@castell.com
Business: 312-360-1516 / www.castell.com



Castell has manufactured trapped key interlocking systems since 1922. Our "end coding" allows for faster, more accurate delivery of products. Available in stainless steel or brass, our interlocks have a proven track record in tough environments including precipitators and baghouses. By forcing a predetermined sequence of operation, a trapped key interlock system improves personal and machine safety.

Cemtek Environmental.....73

3041 S. Orange Avenue
Santa Ana, CA 92707
Ken Greaves
joanne@cemteks.com
Business: 714-437-7100 / www.cemteks.com



CEMTEK Environmental provides a single source for reliable, accurate, and cost effective Continuous Emissions Monitoring Systems (CEMS). We specialize in CEMS and process instrumentation design, integration, field services and spare parts. CEMTEK's experience includes all Source and Ambient sections of 40 CFR Part 50, 51, 60, 63 and 75 monitoring and reporting requirements as well as Particulate Monitoring (PM), Mercury and HCL CEMS. Process Monitoring includes inlet & outlet NOx probe model 8000, inlet scrubber SO₂ & NH₃ slip model 7000. Please contact us at 800-400-0200 for a quote on CEMS Equipment, CEMS field service or CEMS spare parts.

Certified Constructors' Services, Inc.....13

5330 Fairfield Drive
Crestview, FL 32536
Deborah Henderson, President
ccsi2004@ccsipower.com
Business: 850-682-8953 / www.ccsipower.com



CCSI has made a reputation for completing major precipitator rebuilds and boiler outages on time without delaying plant schedules. The services provided include precipitator and boiler inspections, major rebuilds, new construction and plant maintenance. All services provided are carried out with SAFETY as our number 1 goal, using the highest quality supervision and craft persons.

CleanAir Engineering.....60

500 W. Wood St.
Palatine, IL 60067
Allen Kephart, Vice President
akephart@cleanair.com
Business: 412-787-9130 / www.cleanair.com



CleanAir is a global leader providing testing, consulting and equipment (see page 18)

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CleanAir (cont.).....solutions for air .emissions compliance. Areas of expertise include testing for Hg/SO₂/SO_x/NO_x/NH₃/HCl and particulate, mercury and HAPs monitoring systems, APC equipment optimization, cooling tower drift emissions, fly ash resistivity analysis and particle sizing, stack sampling equipment and instrument rental.

Clyde Bergemann Power Group.....16

74015 Presidential Pkwy
Atlanta, GA 30340
Bill Rafferty, Sr. VP Sales and Marketing
info@us.cbpg.com
Business: 770-557-3600 / www.cbpg.com



Clyde Bergemann Power Group is a globally active enterprise supplying systems and solutions for the energy services market. Clyde Bergemann is world market leading in several business fields and is mainly active in boiler efficiency; on-load boiler cleaning; material handling; air pollution control; air-gas handling; combustion optimization and emission control.

CoorsTek.....45

600 9th Street
Golden, CO 80401
Laura Cochran, Product Sales Manager
lcochran@coorstek.com
Business: 303-277-4365 / www.coorstek.com



CoorsTek removes technological barriers for the power-generation industry by manufacturing advanced 85% alumina ceramic support insulators and ESP components. Now the largest technical ceramics manufacturer in the world, CoorsTek designs, manufactures, assembles, and delivers critical components for technology-leading OEMs worldwide. For engineering assistance or quick-turn service, please contact CoorsTek Customer Service at 303.277.4365

Dean Technology, Inc. (HV Components / CKE / HVPSI).....85

3227 Skylane Drive
Carrollton, TX 75006
Business: 972-248-7691
www.deantechnology.com



Dean Technology, Inc. specializes in the manufacture, distribution and support of high voltage components, assemblies and power supplies. Its three major product lines include HV Component Associates (HVCA), CKE, and High Voltage Power Solutions (HVPSI). The HVCA line of products centers on high voltage diodes, rectifiers, bridge rectifiers, and custom assemblies for specific applications. CKE products are a leading line of high voltage and high power silicon rectifiers, MOVs, selenium suppressors, silicon carbide varistors, ceramic disk capacitors, as well as custom assemblies. The HVPSI product line includes high voltage power supplies, multipliers and test equipment. Dean Technology's full family of products provides complete coverage of high voltage and high current solutions for any application.

EPSCO International, Inc......11

95 Clarks Farm Road
Carlisle, MA 01741
Thomas Keeler, President
epsco@apcnetwork.com
Business: 978-405-9426 / www.epscointernational.com



EPSCO International, Inc. is a consulting firm specializing in economically solving air pollution control problems for coal-fired utilities, cement plants, and pulp & paper. EPSCO promotes a 3-Phase approach to defining a problem before trying to solve it: Online Assessment, Offline Assessment, Analyses & Recommendations. EPSCO's staff of 8 consultants and associates have an average of 25+ years of consulting experience on ESPs, FFs, FGD, O&M support, flue gas conditioning systems, Mercury control, SCRs and Maintenance & Structural Rehab on 400+ successful projects.

ETS, Inc......36

1401 Municipal Road, NW
Roanoke, VA 24012, USA
John McKenna PhD, Principal
jmck@etsi-inc.com
Business: 540-265-0004 ext 293 / www.etsi-inc.com



Founded 1973, ETS, Inc. a testing/training firm specializing in particulate emission control, recognized as the world's leading baghouse consultant, has an independent bag/fabric testing laboratory which conducts filtration performance testing that complies with methods ASTM D6830-02 and VDI 3926. The firm has a reputation for successfully troubleshooting APC equipment, providing specification assistance, executing fabric/bag quality assurance programs as well as bag life monitoring & optimization programs, providing expert testimony, and conducting its Baghouse Seminar plus Pollution Control Training Programs.

FLSmidth.....24

2040 Avenue C
Bethlehem, PA 18017-2188
info-us@flsmidth.com
Business: 610-264-6011
www.flsmidth.com



FLSmidth is a leading supplier of equipment and services to the global cement and minerals industries. We develop and supply Air Pollution Control systems with extensive knowledge on fabric filters, electrostatic precipitators, conditioning towers, scrubber systems, heavy metal removal, and multi-pollution control systems. Furthermore, we provide systems for conveying fly ash and reagents for desulfurization and mercury removal with the ability to perform full-scale pneumatic conveying, rail car loading, as well as pilot-scale demonstrations covering all product lines, on virtually any material.

FMC Corporation.....77&78

1735 Market Street
Philadelphia, PA 19103
Bob Crynack
Manager, Air Pollution Control
Mobile: 412.551.0925 / www.environmental.fmc.com



Featuring technology exclusively licensed from NASA, FMC's PerNOxide™ provides a simple, low-cost way to reduce NOx. With potential NOx reductions up to 70%, FMC's patented technology uses hydrogen peroxide to oxidize nitrogen oxide (NO) and elemental mercury (Hg⁰) in flue gas to forms that can be captured by existing flue-gas desulfurization (FGD) systems. The technology can be implemented on an as-needed basis, utilizing existing ducts and simple spray injection. This approach allows industrial and utility boilers to achieve significant levels of NOx reduction without the large capital investment or ongoing maintenance costs associated with selective catalytic reduction (SCR).

Foster Wheeler.....25-26

53 Frontage Road
Clinton, NJ 08809
Robert Giglio, Director of Global Marketing
robert_giglio@fwc.com
Business: 908-713-2561 / www.fwc.com



Foster Wheeler offers a full range of steam generator equipment, aftermarket products and services to the power, industrial, and waste-to-energy sectors. Our global manufacturing and engineering network can deliver cutting-edge products and expertise, quickly and cost competitively with best-in-class quality. Established in 1891, our experience comes from over a century of designing, servicing, and continually improving steam generating equipment.

Fox Equipment.....51

965 Bunker Avenue
Green Cove Springs, FL 32043
Bill Beringer, Director of Sales
bill@foxequipment.com
Business: 904-531-3150
www.foxequipment.com



Fox Equipment designs, engineers and manufactures utility-grade dampers and expansion joints for the power-generation industry. We fabricate in our Fox captive 65,000 sq ft facility in Green Cove Springs, FL and at 25,000 sq ft Paragon Metals in Cincinnati where our Ohio office resides also. Our markets include coal fired power plants, Combined Cycle Natural Gas units, HRSG's, Oil & Gas Refineries, Steel, Concrete, Chemical and process industries.

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Fuel Tech, Inc.....52

27601 Bella Vista Parkway
Warrenville, IL 60555
Kevin Dougherty,
VP Business Dev't & Marketing
info@ftek.com
Business: 630-845-4500
www.ftek.com



Fuel Tech, Inc. provides multi-pollutant emission control and advanced combustion technologies. Technologies include: optimization services, low NOx burners and over fire air systems, chemical injection programs designed to improve boiler efficiency, and modeling services to provide solutions for power plant systems. Technologies include: NOxOUT® and HERT™ SNCR systems, ASCR™ Advanced SCR systems, ULTRA™ process used to generate on-site ammonia for SCR, sorbent injection systems to control SO₂, flue gas conditioning systems, CFD and Physical (Experimental) Modeling, and TIFI® Targeted in Furnace Injection programs to reduce slagging, SO₂ and CO₂ emissions, while improving boiler performance.

GE Air Filtration.....53

8800 E. 63rd St.
Kansas City, MO 64133
Timothy (Tim) Stark, Sales Application Engineer
Timothy.Stark@ge.com
Business: 800-821-2222 / www.ge-energy.com/filtration



GE Energy's Air Filtration team serves energy industry producers with integrated and flexible emissions control technology and services for fabric filtration systems. From high efficiency filtration to Powerwave acoustic and impulse cleaning systems, GE evaluates your entire process and applies the right technology to help improve the performance of your dust collection systems.

Hendrick Manufacturing.....35

One Seventh Avenue
Carbondale, PA 18407
Darran Zimmermann
National Sales Manager
Darran.zimmermann@hendrickmfg.com
Business: 570-947-9881 / www.hendrickmfg.com



Hendrick Manufacturing is a manufacturer of perforated and fabricated metal. We have been in business for over 130 years and have been servicing the power generation industry for quite some time. Our products include precipitator plates, tube sheets, acoustical panels for turbine enclosures, and other fabricated parts. We work with many OEM manufacturers, and our engineering staff would be happy to help you design the most cost effective solution for your upcoming project.

Hitachi Power Systems America.....33

645 Martinsville Road
Basking Ridge, NJ 07920
Bob Nicolo
robert.nicolo@hal.hitachi.com
Business: 908-605-2848 / www.hitachipowersystems.us



Hitachi Power Systems America's (HPSA) mission is to improve the efficiency and reduce the environmental impact of existing facilities and Greenfield installations. HPSA is a leading supplier of equipment and services for the power generation market, which includes thermal, nuclear and hydroelectric facilities. Home to Hitachi's Center of Excellence for the emissions market, including wet and dry scrubber technologies, NOx solutions, and particulate control and mercury removal systems. As a single-point supplier, HPSA offers customers a wide range of After Market solutions and services, including operation and plant assessments, engineering studies, performance optimization, emissions improvement technology, equipment replacement, upgrades and parts.

Horn Industrial Services.....34

2205 Ragu Drive
Owensboro, KY 42301
Terry Byrnes
Vice President Sales and Marketing
terry.byrnes@hornins.com
Business: 270-683-6564 / www.hornindustrialservices.com



Horn Industrial Services is the Parent company of Titan Contracting, Titan Fabricating, National Steel Erection, MIM and Milco Companies. The Horn Companies are one of the leading full service contracting and fabricating companies in the Power Industry. Services include New Construction, Existing Plant Modifications and Repair and Maintenance. Specialties include Power and Process Piping, Balance of Plant Disciplines, Turbine and HRSG Installations, ASME boiler and tube repair, Tank Fabrication (Shop and Field Installations), Existing Plant Modifications/Upgrades, Environmental Equipment Installation/ Retrofits, and AQCS installations and Maintenance.

Hotfoil-EHS Inc.....31&32

2960 East State Street Extension
Hamilton, NJ 08619
Neville W. Richards, President
Neville@HotfoilEHS.com
Business: 609-588-0900 / www.HOTFOILEHS.com



Design and manufacture of: Modular electric heaters for fly ash hoppers on FFs and ESP; Grid systems; Freeze protection of coal and material handling systems; Tank heaters; Pre-heating and stress relieving and applications for temperatures up to 2200°F; Thermal insulation blankets up to 2400°F; Mineral insulated heating cable; Antenna and sub-reflector heaters; Isolation transformers up to 125KVA; Specialty welding power supplies; Distributors for Eurotherm controls; Largest heat treating furnace on the East Coast; Digital and graphic recording equipment; Pipe tracing.

KC Cottrell Inc.....27

2319 Timberloch Place, Suite E
The Woodlands, TX 77380
Heather Stephens, Business Dev. Mgr.
hstephens@kccottrell.us
Business : 281-465-9498 / www.kccottrell.us



KC Cottrell Inc. (formerly Lodge Cottrell) is a full-service provider of OEM air pollution control systems, upgrades, process consulting, aftermarket parts and field service. We offer a wide portfolio of technologies to control particulates, SO₂, NOx, acid gas, metals and other air toxics. Our emphasis is maintaining and improving the performance of existing air pollution control systems as well as retrofit of upgrades and new systems. We offer ESPs, fabric filters, scrubbers, SCR and sorbent injection. KC Cottrell offers engineering studies and consulting services including our fly ash resistivity lab and evaluation of existing equipment.

Kiewit/TIC.....40

9401 Renner Blvd.
Lenexa, KS 66219
Michael Ross, President, Kiewit Power Eng.
Michael.ross@kiewit.com
Business: 913-928-7000
www.kiewit.com



As a subsidiary of Kiewit Corporation, Kiewit Power offers our clients a fully integrated delivery model for engineering, procurement, construction and startup services for your power needs. With the acquisition of TIC – The Industrial Company (TIC) in 2008, Kiewit has advanced its cutting-edge capabilities to better serve the power industry.

Kirk Key Interlock Co.....44

211 Wetmore Ave S.E.
Massillon, OH 44646
Sean McGuinness, VP of Sales
sean@kirkkey.com
Business: 330-833-8223
www.kirkkey.com



Since 1932, Kirk Key Interlock has continually demonstrated its commitment to the trapped key interlock industry. Kirk Key is the industry leader and brand name associated with brass and stainless steel trapped key interlock systems. Electrostatic Precipitators rank as one of the harshest environments for key interlocks. The MD and HD Series continue to be the preferred choice for safely interlocking ESP controls and access doors.

2012 APC Round Table Exhibitors

Lechler Inc.....50

445 Kautz Road
St. Charles, IL 60174-2926
Robert Van Durme, P.E., Senior Account Mgr,
Wet FGD North America
environmental@lechlerusa.com
Business: 800-777-2926 ext. 6812
www.LechlerUSA.com



Lechler USA Inc. is a leading supplier of technical solutions in the application of spray nozzle injection systems, pump-valve skids, and controls for SCR, SNCR, WetFGD, and Semi-dry FGD (CFB and SDA) processes. We take pride in our innovative approach and unique nozzle designs that have helped OEM's and plants meet the most stringent emission levels required. Our 120+ years of experience enables us to provide you the best solutions for your chemical/water injection requirements.

Lhoist North America, Inc.....55

3700 Hulen Street
Fort Worth, Texas 76107
Howard B. Fitzgerald,
New Business Development Manager, FGT Solutions
howard.fitzgerald@lhoist.com
Business: 1-817-732-8164 / www.lhoist.com



Lhoist North America (Lhoist NA) was formed with the merger of two premier calcium product companies: Chemical Lime Company with the production of high quality quicklime and hydrated lime and Franklin Industrial Minerals with its production of milled chemical grade limestone. Lhoist NA operates 15 lime production facilities across the US with 33 kilns, 34 distribution terminals, and 7 limestone processing facilities with annual production capacity of over 6 million tons of lime and 4.5 million tons of limestone. Lhoist Group (LNA's parent) is the worldwide leader in Calcium products - operating in 17 countries on 5 continents. Lhoist is known as the leader in acid gas control with its line of Sorbocal® Optimized Hydrated Lime products. Please contact Lhoist's FGT Solutions Group to discuss how Sorbocal® can benefit you.

M&C TechGroup.....41

6019 Olivias Park Drive, Suite G
Ventura, CA 93003
Cliff Gordon, President and CEO
cgordon@mac-products.com
Business: 805-654-6970
www.mc-techgroup.com



M&C TechGroup is the leading manufacturer of Paramagnetic Oxygen Sensors, Sample Conditioning Equipment, and Particulate Monitor for wet or dry source applications. We have the experience and the equipment to ensure you get a representative sample to your analyzer of choice as well as to make your system more reliable and trouble free. From Probe to Filter, we are your single solution for a monitoring system. We manufacturer, Straight Extractive and Dilution Probes, Heated and Non-Heated Stingers, Gas and Liquid Coolers, Refrigerant and Peltier Chillers, Diaphragm and Peristaltic Pumps, Particulate Filters, Sample Lines, Gas Conditioners, Flow Drawers, Optical and Alarm Sensors, Electronic Controllers, Flow Meters, Valves, Hose and Tube Fittings, Gas Converters, and Paramagnetic Oxygen Analyzers. Discuss your sampling problems with us and we will help you find the solution to a more dependable sampling system.

MET.....29&30

200 North Seventh Street
Lebanon, PA 17046
Barry Stolzman,
Sr. VP of Sales and Marketing
bstolzman@met.net
Business: 484-714-7364
www.met.net



MET - Marsulex Environmental Technologies is a full service Air Quality Control company that offers technologies to meet the rigid emission requirements of the 21st century. Our innovative solutions include original equipment and system upgrades in addition to engineering studies for Wet FGD, Dry FGD, fabric filter and electrostatic precipitator technologies.

Mississippi Lime.....57&58

3870 S. Lindbergh Blvd. Suite 200
St. Louis, MO 63127
Eric Van Rens, Vice President,
Sales and Marketing
ecvanrens@mississippilime.com
Business: 314.543.6365 / www.mississippilime.com



Mississippi Lime hydrated lime is a proven high performing sorbent for acid gas mitigation in Dry Sorbent Injection Systems or Circulating Dry Scrubbers. Our quicklime is a high purity, high conversion feedstock for Spray Dry Absorber scrubbing systems. The Reagent Technology Services division of Mississippi Lime will work with you to supply high purity milled limestone for Wet FGD applications. Our production facilities are located in Ste. Genevieve MO, Vicksburg MS, Verona KY, Weirton WV, Chester SC, and Mobile AL, with additional terminals located throughout North America. Please stop by our booth to hear how Mississippi Lime's technical support and supply chain capabilities can help you achieve cost-effective control of acid gas emissions.

MSI.....59

480 Progress Way
Sun Prairie, WI 53590
Chuck Arnold
chucka@msicems.com
Business: 608-825-2055 / ww.msicems.com



MSI is a leading integrator of CEMS for SO₂, NO_x, CO, PM, Hg, VOC, NH₃, Flow & Opacity using industry proven instrumentation and our unique system design. For particulate emission monitoring, we feature our BetaGuard PM, the first U.S. EPA approved compliance particulate monitor on a power plant stack. Systems are designed for ease of use and low cost of ownership.

Nalco Mobotec Inc.....27

1601 W. Diehl Rd.
Naperville, IL 60563
Contact: David A. Johnson, General Marketing Manager
Dajohnson2@nalco.com
Office: 630-305-2419 / 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 such as NO_x, SO_x, mercury, CO, acid gases, and particulate matter, 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. For additional pollutant reduction from the flue gas after the boiler, our Hg reduction solutions increase Hg oxidation and reduce Hg re-emission to increase Hg capture with existing APC equipment, while our post-furnace DSI system provides high levels of HCl, SO₂ and SO₃ reduction.

National Filter Media.....37

8895 Deerfield Drive
Olive Branch, MS 38654
Keith Ogilvie, Director
kogilvie@nfm-filter.com
Business: 540-336-7407
www.nfm-filter.com



Established in 1906, National Filter Media has been serving industry with quality products and relationships. NFM is a leader in dry filtration products for fabric filter baghouses (filter bags, cages, accessories and services). NFM has products for all types of baghouses; reverse-air, shake-deflate, and high/medium/low pressure pulse jet units. NFM is the North American distributor of Autel® pulse and solenoid valves, full immersion header tanks, piston-style low pressure pulse valves, as well as sequencing timers along with system cleaning software. Autel® are designed to be UL™, CE™ and ASME™ certified to meet project needs. NFM also has diverse line of wet filtration products for WFGD applications. Horizontal belts, vacuum filters, dewatering filters and press leafs are our specialties. Regionally located throughout North America, NFM can serve our partners from ten (10) facilities with just-in-time and economical deliveries.

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Nol-Tec Systems, Inc.....70

425 Apollo Drive
Lino Lakes, MN 55014
Jerry C. VanDerWerff, National Sales Mgr.
JerryVanDerWerff@nol-tec.com
Business: 651-780-8600 / www.nol-tec.com



Sorb-N-Ject Technology®, offered by Nol-Tec Systems, dry bulk sorbent injection systems to mitigate acid gases, Hg, and dioxins/furans 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.

NoritAmericas Inc.....47

3200 University Ave.,
P.O. Box 790
Marshall, TX 75671
Rob Nebergall,
Business Manager, Emissions Control Technology
rob@norit-americas.com
Business: 903-935-4774 / 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.

Novinda Corporation.....38

2000 S. Colorado Blvd., Annex 315
Denver, CO 80222
Molly Hennessee, Office/Accounting Manager
Business: 720-473-8340
m.hennessee@novinda.com / www.novinda.com



Formed in 2009 as a spin out of CH2M Hill to commercialize environmental technologies for the power utility industry, Novinda is a leading-edge technology company that has pioneered the first commercially available, non-carbon mercury control product that is 100 percent compatible with fly ash use in concrete products. The product, Amended Silicates, is a reagent that removes mercury via chemical reactions, rather than through absorption technologies.

NWL.....49

312 Rising Sun Road,
Bordentown, NJ 08505
Joseph Manna, National Sales Manager
jmanna@nwl.com
Business: 941-629-0436 / www.nwl.com



Since 1929, NWL has been manufacturing custom transformers and power supplies. During the late '50's NWL included the manufacturer of T/R's, CLR's, & AVC's in their product line. "PowerPlus" enhances every type of ESP application, with over 1300 in service. NWL is the leading US manufacturer of switch mode power supplies. Reliability, Dependability, NWL the SMART choice

Paragon Airheater.....22

23143 Temescal Canyon Road, Ste B
Corona, CA 92883
Mark Dornoff
MDornoff@paragonairheater.com
Business: 951-277-8035 / www.paragonairheater.com



Paragon Airheater specializes in the service and manufacturing of high-performance seals and replacement parts for rotary, regenerative air heaters. Whether you need to reduce leakage, combat ABS formation, replace baskets or improve overall efficiency, Paragon has the products and solutions. High performance seals, innovative technology, superior field service, inspections and exceptional engineering combined with world class customer service make Paragon the choice for your air heater needs.

Performance Contracting Inc.....56

16047 W. 110th St.
Lenexa, KS 66219
Cale Collier
Cale.Collier@pcg.com
Business: 877-707-5747 / www.pciapc.com / www.pcg.com



Performance Contracting Inc. (PCI) has experienced and safety-trained field crews to perform the needed repairs on your ESPs and Baghouses. Our nationwide services range from equipment inspections to complete rebuilds. PCI can provide cost-effective solutions for your ESP or Baghouse maintenance needs, regardless of the OEM, and allow your in-house maintenance staff to focus on your production equipment. We serve a wide variety of industries, including power, cement, steel, paper and foundry.

RE Consulting.....66&67

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

Redkoh Industries.....19

300 Valley Road
Hillsborough, NJ 08844
Paul Ford, President
paul.ford@redkoh.com
Business: 908-369-1590 / www.redkoh.com



Redkoh is a leading supplier of Control Systems for Precipitators. We provide conventional controls and our patented MFPS interface allows existing ESP controls to operate at elevated frequencies without replacing the existing TR Sets. Together with Stein Industries Redkoh provides 400Hz TR sets and controls. Redkoh and Hotfoil have joined together with APM Solutions, a World Leader in Measurement Systems to provide Hopper Level Detection using analog levels rather than the usual digital alarms. 3D mapping shows hopper build up's and rat-holing. Along with our tribo-electric broken bag detectors and Hotfoil's Hopper heaters, Redkoh now enhances back end collection systems for both ESP and Fabric Filters..... Search "Redkoh" for our troubleshooting App for iPhone, Blackberry, and Android phones.

RoyalUnited.....80

600 Airport Road
Winchester, VA 22602
Ty Headley, Managing Partner
ty@royal-united.com
Business: 540-662-9119 / www.royal-united.com



Royal United is America's leading source of components to the makers and modifiers of dust collection and air pollution control equipment. We represent a single source for all critical components required in the building of a dust collection system – filters, wire cages, pulse valves, air headers and electrical controllers. We strive to earn a preferred supplier relationship built on the quality of our products and services, the understanding of our customers' needs and the competitive advantage we can offer.

Royal Wire Products.....81

13450 York Delta Drive
North Royalton, OH 44133
sales@royalunited.com
Business: 540-662-9119 / www.royal-united.com



Royal Wire is the U.S. leader in wire cage production. With three strategically located manufacturing plants (North Royalton, OH; Charlotte NC and Las Vegas, NV), 50+ years of service to the US OEM market and more capacity than all other US competitors combined, Royal Wire sets the industry standard for quality and service. Royal Wire is represented throughout the U.S. OEM market by Royal United.

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Sealeze.....14

8000 Whitepine Road
Richmond, VA 23237
Mary Harvey
mharvey@sealeze.com
Business: 804-275-1675 / www.sealeze.com



XtraSeal HT™ is a patent-pending, high-temperature brush technology sealing system that is engineered for aggressive, repetitive or continuous motion environments where traditional seals have limited life and effectiveness. XtraSeal HT improves sealing in Air Preheaters providing a measurable reduction in fuel consumption, fan power usage and CO₂ emissions. Sealeze's XtraSeal HT seals provide excellent solution to air-in leakage problems of Auxiliary Steam Turbines.

SICK (Process Automation Div.).....65

4140 World Houston, Suite 180
Houston, Texas 77032
Brian Conway, Regional Sales Mgr. East Coast
brian.conway@sick.com
Business: 281-436-5100 / www.sicknorthamerica.com



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Siemens Environmental Systems & Services.....64

501 Grant Street, 4th Floor
Pittsburgh, PA 15219-4429
Craig Martin,
SESS Marketing Manager-NA
environmental.pg@siemens.com
Business: 412-562-7300 / 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.

Siemens Energy, Inc.....63

1345 Ridgeland Parkway
Alpharetta, GA 30004
Roland Metz, Bus. Dev. Manager
roland.metz@siemens.com
Business: 678-256-1726 / www.siemens.com/energy/controls



Siemens Energy provides instrumentation, controls and electrical solutions for all makes and types of power plants. Siemens Power Plant Automation (SPPA) provides a comprehensive range of power plant products and services for enhancing the reliability, availability, flexibility and profitability of your power generation assets. With more than 160 years of expert process knowledge, Siemens offers proven solutions for the optimization of plant operations, maintenance and management that are designed to meet our customers needs.

The SOLVAir® Solutions.....23

3333 Richmond Avenue
Houston, TX 77098
Mike Wood, Business Mgr, SOLVAir Products
mike.wood@solva.com
Business: 713-525-6829
www.solvair.us



SOLVAir Solutions, a market leader in providing sodium sorbents for Dry Sorbent Injection, has more than 20 years of practical experience helping customers address their air pollution control concerns, ranging from cost-effective product implementation to regulations compliance. Supported by an international SOLVAir Solutions team, we continue to focus exclusively on North America, addressing the problems of SO_x, HCl,

and other stack emissions from power plants, metal refineries, and municipal waste incinerators, to name just a few. Go to www.solvair.us for a broader look at our products, services, and history.

Southern Environmental, Inc.....75&76

6690 West Nine Mile Road
Pensacola, FL 32526
Michael R. Johnson,
Director – Sales and Marketing
apcsales@sei-group.com
Business: 850-944-4475
www.southernenvironmental.com



- Particulate Control Experts
- Electrostatic Precipitators
- Fabric Filters
- Specializing in Retrofit Systems and Solutions
- Tight schedules and difficult emission targets are our focus.

Southern Research Institute.....20

Power Systems and Environmental Research
P. O. Box 55305
Birmingham, AL 35255-5305
Ken Cushing,
Manager, Environmental Services Group
cushing@southernresearch.org
Business: 205-581-2381 / www.southernresearch.org



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, HCl, FTIR gas analysis, ash resistivity testing, chemical analysis of coals and fly ashes, analysis of FGD scrubber liquids and slurries, and water treatment technologies. We will be operating the new Water Research Center that will be evaluating technologies to enhance water reuse and reduce consumption at EGUs in the following areas – cooling water, moisture recovery, zero liquid discharge, wastewater treatment, and solids disposal.

Spectrum Systems, Inc.....39

3410 West Nine Mile Road
Pensacola, FL 32526
Richard Blanchard, Sales Manager
ssi.cems@gmail.com
Business: 850-944-3392
www.spectrumsystems.com



Manufacturer of Continuous Emission Monitoring Systems, Continuous Opacity Monitoring Systems, Data Acquisition and Reporting Systems which comply with Federal, State, and Local regulations, as well as Process Monitoring Systems for SCR, FGD, and Boiler Control. Also provides preventive and emergency service, troubleshooting, training, consulting, repairs, spare parts, and Certification and Compliance testing.

STEAG Energy Services LLC.....2

PO Box 1727 / 304 Linwood Road Suite 102
Kings Mountain, NC 28086 USA
Dorothee Seidel, Marketing Manager
dorothee.seidel@steag.us
Business: 704-734-0688
www.steag.us



STEAG Energy Services provides a full scope of environmental engineering and consulting service to the North American energy industry including STEAG's patented mercury capture / sequester system and SCR and FGD Training / O&M services, SCR and SNCR system design and review, SCR catalyst management services including catalyst data interpretation, catalyst exchange strategies, catalyst cleaning, rejuvenation and regeneration, STEAG's patented/ pleated large particle ash screens, AIG tuning, combustion optimization services, complete in-house SCR catalyst bench scale testing and XRF testing services, and complete SCR on-site installation / removal services.

2012 APC Round Table Exhibitors

Stein Industries Inc......17&18
 19 Artisans Crescent
 London, Ontario, Canada N5V5E9
 Bill Cooke, Contract Administrator
 info@steinindustriesinc.com
 Business: 519-659-3659 / www.steinindustriesinc.com



Designs and manufactures electrical apparatus for use with electrostatic precipitators, including transformer-rectifier sets (T/R's), current limiting reactors (CLR's) and control cabinets. And now including our 400 Hz mid-frequency integrated power supplies (MIPS). Providing field service as well as factory repairs and complete rebuilds of all T/R's, gives our customers a very unique advantage for their T/R fleet. Renewal parts are available 24 hours a day.

Stock Equipment.....42&43
 16490 Chillicothe Rd.
 Chagrin Falls, OH 44023
 Mike Volker, Regional Sales Manager
 stock.sales@stockequipment.com
 Business: 440-543-6000 / www.stockequipment.com



Stock Equipment Company, part of Schenck Process Group, is a global supplier of material handling solutions as well as an industry leader in precipitator control and power supply solutions with its Forry AVC XM, ERC, TR set and ModuPower high frequency SMPS products. Stock Equipment can also provide unique value added services such as online installation guides, performance modeling consultations, and site specific training materials. Our Fairfiled BMH products and more recent acquisition of MAC process group have expanded our area of expertise to include products for all areas of the environmental island including Dry Sorbent Injection systems; pneumatic material handling; and general bulk material handling.

United Conveyor Corporation.....46
 2100 Norman Drive W
 Waukegan, IL 60085
 Jon Norman
 jonnorman@unitedconveyor.com
 Business: 847-473-5900 / www.unitedconveyor.com



United Conveyor Corporation (UCC) is a global leader in ash handling solutions for the power generation industry and preferred supplier for dry sorbent injection (DSI) and lime handling expertise. UCC is the industry leader in performance-based turnkey solutions for DSI. This includes predictive modeling, testing, demonstration, pneumatic system design, manufacture, installation and on-going service.

Universal Blastco.....69
 318 Neeley Street
 Sumter, SC 29150
 William Lenz, VP Business Dev.
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 Business: 803-804-9752 / www.isginc.us



Turnkey maintenance and capital construction project services delivering high performance corrosion and abrasion resistant protective lining and coating systems specializing in the demanding environments of coal fired power plants. Universal Blastco, with the industry's broadest experience in corrosion control, now offers turnkey design and construction of ceramic tile lined, reinforced concrete FGD absorbers and tanks. Cera-Corr™ Systems represent the latest design, construction and materials science technology in:

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URS Corporation.....79
 P.O. Box 201088
 Austin, TX 78720-1088
 Gordon Maller, Manager of Air Pollution Control
 gordon_maller@urscorp.com
 Business: 512-419-5045 / www.urscorp.com



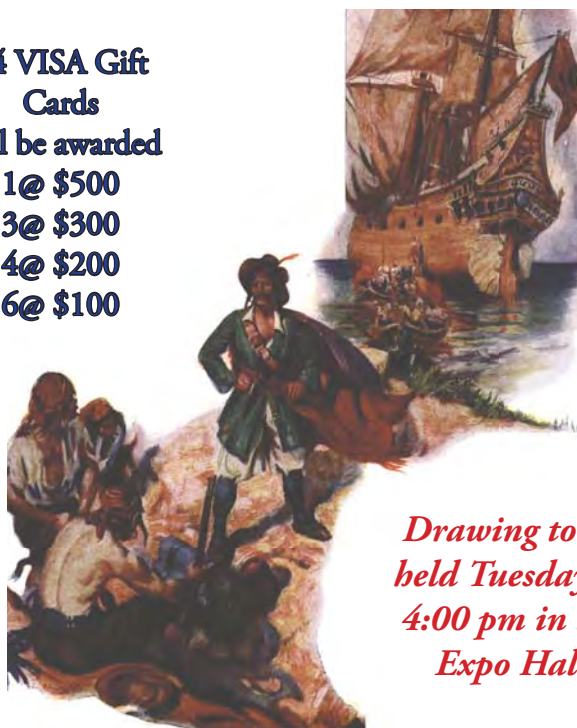
URS is a full-service engineering company. For nearly 30 years, URS, operating as

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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Drawing to be held Tuesday at 4:00 pm in the Expo Hall



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