

Presented by



Reinhold Environmental

Utility Sponsor



Tennessee Valley Authority



February 8-9, 2010
The Chattanooga Hotel
Chattanooga, TN

Sponsors



Pollution Control Users Group

9th Annual

NO_x - Combustion Round Table & Expo

*NO_x, Combustion, Biomass,
SO₃, Greenhouse Gases*

Show Guide



You'd better be sure it works

RESEARCH | TECHNOLOGY | CATALYSTS

WWW.TOPSOE.COM

When you choose your SCR catalyst supplier, base your choice on confidence in catalyst and technology.

Topsoe's unique, state-of-the-art manufacturing technique ensures solutions to your exact needs.

Topsoe's SCR DeNOx catalyst exhibits features like:

- high resistance to erosion
- high NOx conversion
- high poison resistance
- low SO₂ oxidation

Topsoe has supplied more than 500 SCR installations.

HALDOR TOPSOE 
CATALYZING YOUR BUSINESS

The 9th Annual
***NOx-Combustion
Round Table & Expo***

February 8-9, 2010
The Chattanooga Hotel, Chattanooga, TN

Presented by



Reinhold Environmental
with Utility Sponsor TVA
www.reinholdenvironmental.com



*NOx-Fest
Sponsors*

A.V.C. Specialists
Babcock & Wilcox
CoaLogix
Cormetech
E.ON Engineering
Fuel Tech
Greenbank-CBP
Haldor Topsoe
NeuCo
URS

*Treasure Hunt
Sponsors*

AirTek
Babcock & Wilcox
Cormetech
Evonik Energy Services
Fuel Tech
Haldor Topsoe
Hitachi Power Systems America
Johnson Matthey Catalysts
Kiewit
Lectrus
URS

Conference Sponsors



CORMETECH
Cormetech, Inc.

HALDOR TOPSOE H

Haldor Topsoe, Inc.

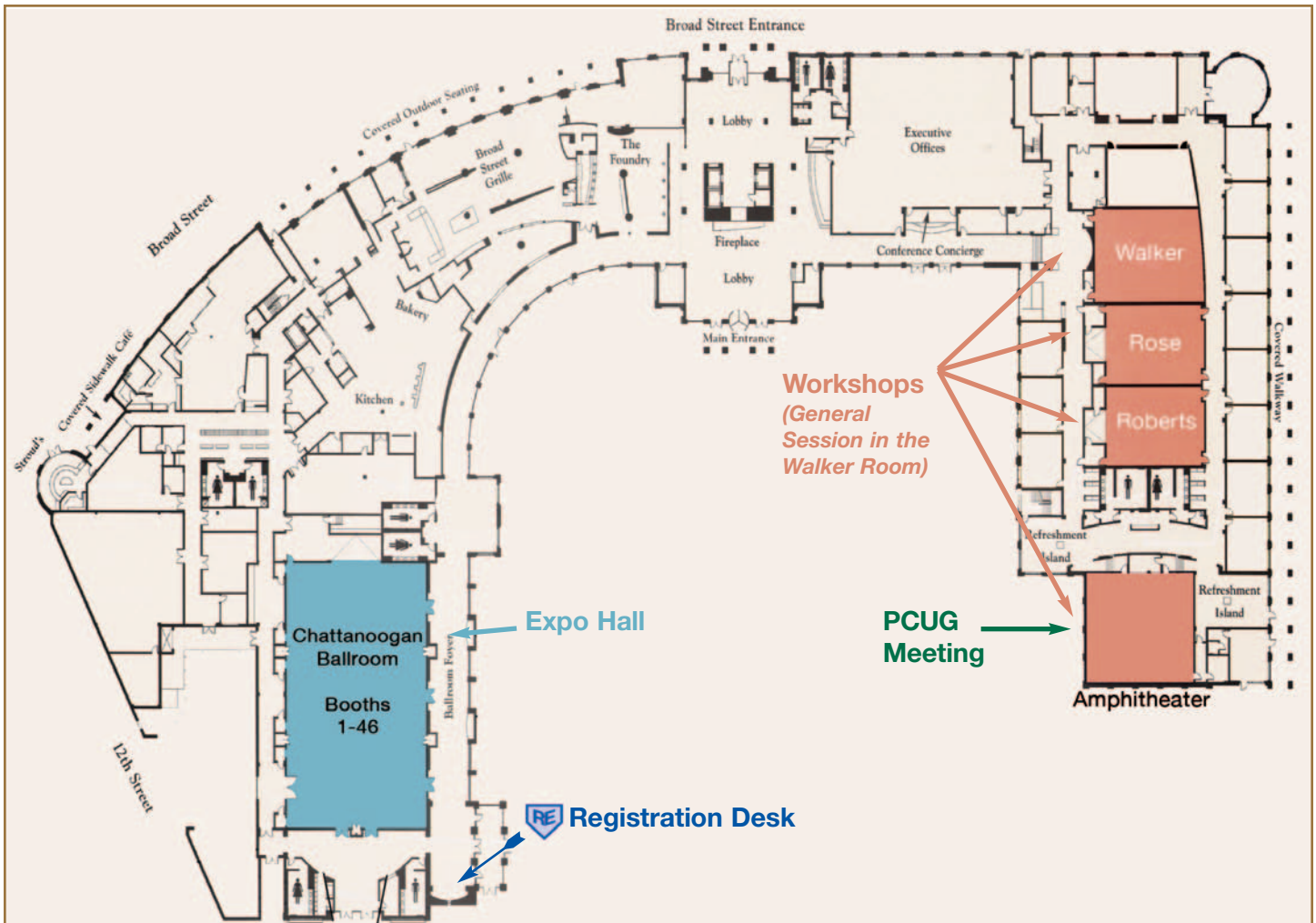
URS

URS Corporation



Pollution Control
Users Group

2010 NOx-Combustion Hotel Layout



2010 PCUG Steering Committee



- American Electric Power**
 Russ Ridgeway (rfridgeway@aep.com)
 Larry Hicks (lahicks@aep.com)
 Jim Benes (jdbenes@aep.com)
- Ameren**
 Rich Phillips (rphillips@ameren.com)
 Jim Chaney (jchaney@ameren.com)
 Terri Mackey (tmackey@ameren.com)
- Arizona Public Service**
 Bruce Salisbury (bsalisbu@apsc.com)
- DTE**
 Dan Fahrner (fahrerd@dteenergy.com)
 Jason Brown (brownjl@dteenergy.com)
- Dominion Energy**
 George Valentine (george_valentine@dom.com)
 Andy Yaros (andy_yaros@dom.com)
- Duke Energy**
 Scott Williams (nswilliams@duke-energy.com)
 John Walker (john.walker@duke-energy.com)
 Mark Thomas (mark.thomas@duke-energy.com)
 Mike O'Connor (mike.o'connor@duke-energy.com)
- Dynegy Midwest Generation**
 Keith McFarland (keith.mcfarland@dynegy.com)
- Entergy**
 Joseph Hantz (jhantz@entergy.com)
- ESKOM**
 Ebrahim Patel (ebrahim.patel@eskom.co.za)

- Evonik Energy Services GmbH**
 Horst Rhein (Horst.Rhein@evonik.com)
- FirstEnergy Corp**
 Chris Rietscha (rietschac@firstenergycorp.com)
 Doug Hartman (hartmands@firstenergycorp.com)
- Gulf Power Company**
 Dwain Waters (gdwaters@southernco.com)
- PacifiCorp**
 Greg Betenson (greg.betenson@pacificorp.com)
- Salt River Project**
 Paul Ostapuk (paul.ostapuk@srpnet.com)
- Southern Company**
 April Freeman Sibley (apfreema@southernco.com)
 Ed Healy (echealy@southernco.com)
 Gerry Klemm (geklemm@southernco.com)
 Mike Nelson (mdnelson@southernco.com)
- TVA**
 Rick Collins (recollins@tva.gov)
 William Oberg (wwoberg@tva.gov)
- Wyandotte Municipal Service**
 Melanie McCoy (mmccoy@wyan.org)
- Xcel Energy**
 Gerald Bostwick (gerald.bostwick@xcelenergy.com)



NOx-Combustion Conference Agenda

2010 NOx-Combustion Round Table

February 8, 2010 - Monday - NOx-Combustion Round Table	
Registration - Continental Breakfast & Continuous Break in expo from 7:00 to 5:30 (Chattanooga Ballroom)	
O&M Training Classes 8:30-12:00	
8:30 - 9:30	<p>Training Class 1 (Walker Room) SCR Safety 101 (Include Risk Mgmt Plan) by Ron Richard, RE Consulting</p> <p>Training Class 5 (Walker Room) SCR 101 (Include Tail End/Low Temp/Low Dust SCRs) by Jeremy Freeman, Cormetech</p>
10:00 - 12:00	<p>Training Class 2 (Roberts Room) SCR Inlet Mixing & AIG Tuning 101 by Darren Hanby, AEP Marilyn Martin, Evonik</p> <p>Training Class 6 (Amphitheater) Biomass 100% and Co-Firing 101 by Nate White, Haldor Topsoe and Hans Jensen-Holm, Haldor Topsoe Europe</p>
12:00 - 1:00	Lunch in Exhibition Hall (Chattanooga Ballroom)
1:00 - 2:30	<p>General Session (Walker Room) Welcome/Presentation of Round Table Award by Susan Reinhold, ... Safety Note by Chattanooga Hotel, ...</p>
2:30 - 3:30	<p>Workshop 1 (Walker Room) SCR Design Advancements (Next Generation SCR) by William Medeiros, Babcock Power</p>
3:30 - 4:30	<p>Workshop 5 (Walker Room) SCR Temperature Concerns Related to Cycling and Low Leads by Bruce McLaughon, B&W</p>
4:30 - 5:30	<p>Workshop 6 (Roberts Room) Catalyst Changeout Optimization by Ken Jeffers, Johnson/Matthey (Argillon)</p>
7:00 - 8:00	<p>Workshop 9 (Walker Room) SCR NH₃ Injection System Advancements by Marilyn Martin, Evonik</p>
8:00 - 9:00	<p>Workshop 10 (Roberts Room) SCR Advancements by Kevin Dougherty, Fuel Tech</p>
9:00 - 9:30	<p>Workshop 13 (Walker Room) Economics of Urea vs. Ammonia by Bill Hankins, Wahlco</p>
9:30 - 10:30	<p>Workshop 14 (Roberts Room) Experience with Catalyst Regeneration by Peter Struckmann, E.ON Engineering</p>
10:30 - 11:00	<p>Workshop 17 (Walker Room) LPA Screen Advancements and Formation Control by Iain Hall, NoNOx Components</p>
11:00 - 12:00	<p>Workshop 18 (Roberts Room) Hybrid Induct SCR Technologies by Volker Rummeholm and Stewart Bible, Fuel Tech</p>
12:00 - 1:00	Lunch in Exhibition Hall (Chattanooga Ballroom)
1:00 - 2:30	<p>Panel I (Walker Room) SCR Performance Enhancement Panel : Chairman: Michael O'Connor, Duke Energy Panelists: Betty Hansen, B&W; Rob Mudry, Airflow Sciences; Nancy Stephenson, Cormetech; Stephen Guglielmo, Hitachi; Sterling Gray, URS; Darren Hanby, AEP; Ed Healy, Southern Company</p>
2:30 - 3:30	<p>Workshop 20 (Walker Room) NOx, NH₃, SO₂ Monitoring System Improvements by Rick Himes, EPRI</p>
3:30 - 4:30	<p>Workshop 21 (Roberts Room) New Catalyst Advancements by Nate White, Haldor Topsoe</p>
4:30 - 5:30	<p>Workshop 24 (Walker Room) Hg CFMS: Are we ready for MACT? By Sharon Systrom, ADA-ES</p>
12:00 - 1:00	Lunch in Exhibition Hall (Chattanooga Ballroom)
1:00 - 2:30	<p>Panel II (Rose Room) Biomass Panel Chairman: Nathan Ladner, Southern Company Panelists: Kevin Davis, REI; Philip McKenzie, B&W; Jeremiah Haswell, Southern Co.; Jordan Solomon, Ecostrat; Thomas Wells, Southern Co.</p>
2:30 - 3:30	<p>Workshop 22 (Amphitheater) High Volume SCR Catalyst Testing for QA/QC in a Production Regeneration Environment by Mike Cooper, Coallogix</p>
3:30 - 4:30	<p>Workshop 23 (Rose Room) Biomass Cofiring Impact on NOx, Catalyst, and SCR Operation by Peter Struckmann, E.ON Engineering</p>
4:30 - 5:30	<p>Workshop 26 (Amphitheater) Flue Gas Condensables Measurement by Richard McMillan, URS</p>
5:30 - 6:30	<p>Workshop 27 (Rose Room) Biomass Co-firing Impact on Boiler Operations by Michael Davidson & Rich Abrams, Babcock Power</p>
8:30 - 9:30	<p>Training Class 3 (Amphitheater) SNCR System Tuning 101 by Steve Johnson, Quinopaxet Solutions</p> <p>Training Class 4 (Rose Room) Combustion Tuning 101 by Stephen Storm, Storm Technology</p> <p>APH Foulting, Online Cleaning 101 by John Guffie, Paragon Airheater Technologies</p> <p>Boiler, Economizer Cleaning 101 by Charlie Breeding, Clyde Bergemann</p>
9:30 - 10:30	<p>Workshop 3 (Amphitheater) CO₂ Capture and Sequestration Technology Advancements by Chris Wedig, Shaw Group</p> <p>Workshop 4 (Rose Room) Boiler Combustion Advancements by Ray Johnson, NeutCo</p>
10:30 - 11:30	<p>Workshop 7 (Amphitheater) Biomass Experience in Co-firing in PC Boilers by Keith Morris, Doosan Babcock Energy America</p> <p>Workshop 8 (Rose Room) Targeted In-Furnace Injection for Slag Control by Chris Smyrniotis, Fuel Tech</p>
11:30 - 12:30	<p>Workshop 11 (Amphitheater) SO₂ Mitigation System Improvements by Mark Thomas, Duke Energy</p> <p>Workshop 12 (Rose Room) Combustion Optimization Using Real-Time Coal Flow Measurement by Alan Jensen, MFC-USA</p>
12:30 - 1:30	<p>Workshop 15 (Amphitheater) New Approach to SO₂ mitigation by Cal Lockert, Breen Energy and Cam Martin, ADA-ES</p> <p>Workshop 16 (Rose Room) Biomass Conversion Case Study by Orest Walchuk, Nalco/Mobatec</p>
1:30 - 2:30	<p>Workshop 19 (Amphitheater) Duct Chemical Injection before/after the SCR by Mike Wood, Solvay and David Van Arman, Nol-Tec</p> <p>Discussion Group I (Rose Room) Boiler Control Challenges Discussion Group: Alan Paschedag, Siemens; Rob Mudry, Airflow Sciences; Tony Widenman, DTE</p>
2:30 - 3:30	<p>Workshop 25 (Roberts Room) Arsenic Mitigation - Lessons Learned by Megan Murphy, PPL Montour Martha Watson, E.ON Engineering</p>
3:30 - 4:30	<p>Workshop 28 (Walker Room) SCR Performance Enhancements by Bill Hankins, Wahlco</p>
4:30 - 5:30	<p>Workshop 30 (Walker Room) SCR Design Advancements (Next Generation SCR) by William Medeiros, Babcock Power</p>
5:30 - 6:30	<p>Workshop 33 (Walker Room) SCR Temperature Concerns Related to Cycling and Low Leads by Bruce McLaughon, B&W</p>
6:30 - 7:30	<p>Workshop 36 (Roberts Room) Catalyst Changeout Optimization by Ken Jeffers, Johnson/Matthey (Argillon)</p>
7:30 - 8:30	<p>Workshop 39 (Walker Room) SCR NH₃ Injection System Advancements by Marilyn Martin, Evonik</p>
8:30 - 9:30	<p>Workshop 40 (Roberts Room) SCR Advancements by Kevin Dougherty, Fuel Tech</p>
9:30 - 10:30	<p>Workshop 43 (Walker Room) Economics of Urea vs. Ammonia by Bill Hankins, Wahlco</p>
10:30 - 11:00	<p>Workshop 46 (Walker Room) LPA Screen Advancements and Formation Control by Iain Hall, NoNOx Components</p>
11:00 - 12:00	<p>Workshop 48 (Roberts Room) Hybrid Induct SCR Technologies by Volker Rummeholm and Stewart Bible, Fuel Tech</p>
12:00 - 1:00	Lunch in Exhibition Hall (Chattanooga Ballroom)
1:00 - 2:30	<p>Panel I (Walker Room) SCR Performance Enhancement Panel : Chairman: Michael O'Connor, Duke Energy Panelists: Betty Hansen, B&W; Rob Mudry, Airflow Sciences; Nancy Stephenson, Cormetech; Stephen Guglielmo, Hitachi; Sterling Gray, URS; Darren Hanby, AEP; Ed Healy, Southern Company</p>
2:30 - 3:30	<p>Workshop 20 (Walker Room) NOx, NH₃, SO₂ Monitoring System Improvements by Rick Himes, EPRI</p>
3:30 - 4:30	<p>Workshop 21 (Roberts Room) New Catalyst Advancements by Nate White, Haldor Topsoe</p>
4:30 - 5:30	<p>Workshop 24 (Walker Room) Hg CFMS: Are we ready for MACT? By Sharon Systrom, ADA-ES</p>
5:30 - 6:30	<p>Workshop 27 (Rose Room) Biomass Cofiring Impact on Boiler Operations by Michael Davidson & Rich Abrams, Babcock Power</p>

NOx Fest at Tennessee Aquarium
 (Dinner, TVA and Southern Company Bands and TN Aquarium Visit)... free to all attendees and their families... free continuous bus transportation
 Aquarium opens for Attendees (and closes to Public) at 6:30 - enter through the Ocean Journey Building - Dinner will be in TN Aquarium Lobby at 7:15 - event ends at 10:00

*~ A Clear Influence
on Air Quality ~*



**The world leader in SCR technology
for controlling NO_x emissions**

**Cormetech offers a full range of
products and services to maximize
the life and effectiveness of your
SCR system**

**NO_x - Products for a wide range of
operating temperatures and applications**

Hg - Catalytic oxidation of Mercury

**SO₃ - Low oxidation rates for minimal
SO₃ impact**

**Cormetech, Inc.
5000 International Drive
Durham, NC 27712 USA
919-595-8700
www.cormetech.com**



CORMETECH

Workshops and Panels

Monday, February 8

8:30 – 9:30 am

Training Class 1: “SCR Safety 101 (Includes Risk Management Plan)” by Ron Richard, RE Consulting (Walker Room)

When one installs an SCR, one must address various physical and chemical safety issues based on the design of the system. Depending upon the design of the chemical feed system, one may have to develop a formal Risk Management Plan to satisfy local or federal regulations. This training session will discuss these issues.

Training Class 3: “SNCR System Tuning 101 (or, What to Do If Your Slip Is Showing)” by Steve Johnson, Quinopoxet Solutions (Amphitheater Room)

Degrading SNCR system performance shows up as either increased urea consumption or ammonia slip (sometimes both). Keeping these systems tuned requires diligence as well as an understanding of how furnace temperatures change so that reagent can be sprayed where it will do the most good. This training session will provide practical insights on how to avoid the embarrassment and cost of ammonia slip.

8:30 am – Noon

Training Class 2: “SCR Inlet Mixing and AIG Tuning 101” by Darren Hanby, AEP; Marilyn Martin, Evonik and “Ammonia Supply and Transfer 101” by Mike Vukmir, Environmental Equipment Services (Roberts Room)

- This workshop will include:
- I. Importance of SCR Inlet mixing
 - II. AIG tuning – why tune and then the do’s and don’ts of tuning
 - III. Ammonia Delivery system – how is it delivered and how you transfer the product safely.

Training Class 4: “Combustion Tuning 101” by Stephen Storm, Storm Technology and “APH Fouling and Online Cleaning 101” by John Guffre, Paragon Airheater Technologies, and “Boiler, Economizer Cleaning 101” by Charlie Breeding, Clyde Bergemann (Rose Room)

This training class will focus on these three closely related and synergistic topics. An improperly tuned combustion system can lead to fouling of the furnace and air heater. Likewise, an air heater that is not performing up to standards can upset the balance of the combustion system. This training class will address methods to keep the furnace economizer and air heater clean, as well as address the methodology and requirements of proper boiler tuning which can prevent, or minimize, the amount of fouling that occurs in those areas. Also covered will be the fundamentals of slag formation and ash deposits. Coal chemistry effect on deposits will be described. The influence of boiler modifications (LNBS, Over Fire Air, SCR) will be explained. Types of boiler cleaning equipment will be reviewed. The implementation of Intelligent Soot Blowing with examples of this technology will be covered in the workshop. The benefits of keeping the boiler clean will be illustrated.

10:00 am – Noon

Training Class 5: “SCR 101 (Including Tail End/Low Temp/Low Dust SCR’s)” by Jeremy Freeman, Cormetech (Walker Room)

This training session will focus primarily on SCR technology as well as system configurations including basic design (reactor, ductwork, AIG) and SCR catalyst management. The session will also highlight the SCR catalyst’s ability to reduce Hg in conjunction with wet FGD, operating the SCR in a low temperature environment, and overall system performance monitoring in order to enhance catalyst operation.

Training Class 6: “Biomass 100% and Co-firing 101” by Nate White, Haldor Topsoe; Hans Jensen-Holm, Haldor Topsoe Europe (Amphitheater Room)

The “Biomass 100% and Co-firing 101” training class will review a decade of experience in both Europe and the U.S. with Selective Catalytic Reduction (SCR) design and operation down stream of boilers firing biomass for power and industrial applications. More and more bio-mass fired and co-fired power generation units will be required in the U.S. to meet future state renewable generation requirements. The burning of such a diverse fuel, when combined with converting older coal fired generation units to biomass firing while retrofitting with SCR, represents a challenge to the design of SCR and the catalyst charges. The training class will discuss the diversity of biofuels and their effect on both (low & high dust) SCR design and operation.

1:00–2:30 pm

Welcome and Presentation of Round Table Awards: Susan Reinhold, Reinhold Environmental

Keynote Speech: “Fossil Generation’s Role in a World Going Green” by William R. McCollum, Chief Operating Officer, TVA (Walker Room) Mr. McCollum will discuss TVA’s approach to the many challenges presented to fossil fleets by the national interest in a cleaner power supply—a nation which still depends on coal to fuel half its electric energy production.

2:30 – 3:30 pm

Workshop 1: “SCR Design Advancements (Next Generation SCR)” by William Medeiros, Babcock Power (Walker Room)

SCR design has seen a steady increase in performance and range of application in the United States. In the future, these trends will continue. It is expected that the future of SCR design lies in the burning of different fuels, extended low load operation, improved monitoring, higher NOx removal and reduced maintenance.

Workshops and Panels

Monday, February 8, continued

2:30 - 3:30 pm

Workshop 2: “Catalyst Management Strategy Improvements” by Chao Lin, AEP (Roberts Room) Proper management of catalyst is one of the key factors for successful operation and optimum performance of an SCR system. As SCR operation extends from ozone season to year-round, it becomes more challenging as SO₃ emission becomes an issue with high sulfur fuel used for FGD operation. Moreover, more stringent regulations on NO_x and Hg emissions will be implemented in the near future.

Workshop 3: “CO₂ Capture and Sequestration Technology Advancements” by Christopher Wedig, Shaw Group (Amphitheater Room) This workshop will address the details of advancements in carbon dioxide (CO₂) capture and sequestration (CCS) for fossil fired power plants. The workshop will include recent U.S.A. and worldwide advancements and progress made in the following areas: different types of CO₂ capture processes, new CO₂ absorption solvents, CO₂ solvent regeneration, energy efficiency, CO₂ compression equipment, CO₂ pipelines, CO₂ sequestration and storage projects, CO₂ enhanced oil and gas recovery projects, CO₂ storage testing and monitoring programs, operation & maintenance for CCS projects, CCS equipment descriptions, relationship of air quality control (NO_x/SO₂/SO₃/Hg/PM) systems to CCS, impacts of CCS systems on new and existing coal-fired power plants, and other topics related to advancements in CCS.

Workshop 4: “Boiler Combustion Advancements” by Ray Johnson, NeuCo (Rose Room) This workshop will discuss boiler optimization software advances, using real-time optimization software to do more with what you’ve got. In addition to NO_x reduction, benefits include reduced SCR ammonia consumption, fewer sootblowing-related tube leaks, improved unit reliability, megawatt maximization and better steam temperature control.

4:30 - 5:30 pm

Workshop 5: “SCR Temperature Concerns Related to Cycling and Low Loads” by Bruce McMahon, Babcock and Wilcox (Walker Room) To accommodate low load operation, a variety of approaches can be taken to raise the SCR inlet gas temperature above the minimum temperature identified as acceptable by catalyst manufacturers. The three approaches are; 1. Flue gas bypassing; 2. Splitting the economizer surface; and 3. Partial water bypassing with V-temp economizer design. This workshop will review each approach.

Workshop 6: “Catalyst Changeout Optimization” by Ken Jeffers, Johnson Matthey (formerly Argillon) (Roberts Room) This workshop will focus on best practices for conducting SCR catalyst removal and replacement projects for coal-fired applications. Topics include methods for minimizing outage time, tooling and labor requirements, and recent developments for quickly assessing catalyst performance between changeout actions.

Workshop 7: “European Experience with Biomass Co-firing in PC Boilers” by Keith Morris, Doosan Babcock Energy America (Amphitheater Room) Conversion of pulverized coal fired boilers to 100% biomass fuel has been successfully achieved in European Power Plants since the mid-1990’s. A case study on how this can be achieved will be reviewed in this workshop, as well as multiple techniques applied over the past 7 years, to achieve co-firing up to 20% heat input into PC boilers rated as large as 660 MWe.

Workshop 8: “Targeted In-Furnace Injection for Slag Control” by Chris R. Smyrniotis, Fuel Tech, Inc. (Rose Room) This presentation discusses details of how a Targeted In-Furnace Injection (TIFI) program controls slagging and fouling in coal burning boilers. Also discussed are the economic drivers involved in changing to fuels with higher slagging potential. The presentation ends with a discussion of three case histories involving applying TIFI technology to control slagging and fouling when switching to Illinois Basin Coals.

Tuesday, February 9

8:00 - 9:00 am

Workshop 9: “SCR NH₃ Injection System Advancements” by Marilynn Martin, Evonik (Walker Room) When the first vintage of ammonia injection systems were introduced into the SCR world, electric vaporizers and all their problems were the standard that was used to convert ammonia from the liquid phase to the gas phase. The overview of the history and how far we have come will take us through all the iterations up to the direct injection method that is used today. The direct injection method eliminates the need for vaporizers altogether and depending on the method used, converts the ammonia to a single phase (either gas or liquid depending on the system) and keeps it that way until it is injected into the flue gas stream.

Workshop 10: “SNCR Advancements” by Kevin Dougherty, Fuel Tech, Inc. (Roberts Room) Today, power producers are exploring the least expensive methods to reduce nitrogen oxide emissions. These methods include: combinations of technologies such as low NO_x burners, OFA, SNCR and SCR, in order to provide low cost solutions. Two systems that offer possible advancements are NO_xOUT and HERT. Both technologies will be discussed along with their combination with other NO_x reducing technologies and case examples of their applications within the industry.

Workshops and Panels

Tuesday, February 9, continued

8:00 – 9:00 am

Workshop 11: “SO₃ Mitigation System Improvements” by Mark Thomas, Duke Energy (Amphitheater Room) This workshop and open dialogue will focus on SO₃ mitigation system / process improvements and expected applications advancements. A more detailed understanding of sorbent dispersion and reaction kinetics can lead to reduced reagent usage and reduced balance of plant impacts. Recent testing of alternate injection locations indicate positive results for SO₃ and HAPs mitigation.

Workshop 12: “Combustion Optimization Using Real-Time Coal Flow Measurement” by Alan Jensen, MIC-USA (Rose Room) Xcel Energy's Tolk Station has successfully reduced NO_x emissions and improved unit heat rate by using an innovative approach that involved analyzing, improving, monitoring, measuring and controlling the entire coal pulverization, delivery and combustion process. This included mill upgrades coupled with pulverized coal flow measurement and control that reduced NO_x emissions enough to satisfy regulatory requirements while avoiding substantial capital expenditures for new low NO_x burners. In addition, unit heat rate improvements have resulted in one less coal unit train delivery per month.

9:30 – 10:30 am

Workshop 13: “Economics of Urea vs Ammonia (Factoring in Safety)” by Bill Hankins, Wahlco (Walker Room) Urea to Ammonia technology converts non toxic urea to ammonia for use with Nitrous Oxide Reduction technologies without the risk of storage or handling of anhydrous or aqueous ammonia. To date, over 50 urea to ammonia units are in operation in several countries around the world. Presented in this workshop are details on the fundamentals of the technology, safety aspects, and economics as compared to anhydrous and aqueous ammonia systems.

Workshop 14: “Experience with Catalyst Regeneration” by Peter Struckmann, E.ON Engineering Corp. (Roberts Room) E.ON Engineering is analytically supporting its own fleet and third parties with regeneration projects for more than 10 years. This Workshop will provide fundamentals about regeneration, some important test results and recommendations about catalyst testing during regeneration projects.

Workshop 15: “New Approach to SO₃ Mitigation” by Cal Lockert, Breen Energy; Cam Martin, ADA-ES (Amphitheater Room) Results from recent demonstration programs evaluating an integrated approach to SO₃ control upstream of the Air Heater will be reviewed in this workshop. Demonstration programs include sorbent injection ahead of the SCR at one site and ahead of the air heater at the other site. The workshop will discuss the process of system optimization using the control/feedback technology and will also include lessons learned and new equipment design considerations.

Workshop 16: “Biomass Conversation Case Study” by Orest Walchuk, Nalco Mobotec (Rose Room) This workshop will review the Nalco Mobotec 45% biomass conversion of a 50 MWe coal fired boiler in Wroclaw Poland. The installation included storage, pulverizing, transport, and feeding equipment. It also included in-furnace modifications to improve combustion and carbon burnout. Several different wood and agricultural biomass fuels were tested for NO_x, LOI, and slagging.

11:00 am – Noon

Workshop 17: “LPA Screen Advancements and Formation Control” by Iain Hall, NoNOx Components (Walker Room) This workshop will provide some feedback on ash loading, velocity distributions and their impact on the performance of LPA screen systems. The erosivity impact of fly ash from different fuels on duct internal support structures and mitigation approaches will also be discussed.

Workshop 18: “Hybrid Induct SCR Technologies” by Volker Rummenhohl, Fuel Tech and Stewart Bible, Fuel Tech (Roberts Room) Flow modeling is one of the key issues to achieve a high performance in the combined technologies. In the process of defining the potential of the Advanced SCR (ASCR) concept, Fuel Tech has developed the computational modeling tools that are crucial to Cascade/Hybrid/ASCR design. This presentation will review the theory and development of these tools as well as relevant examples and results.

Workshop 19: “Duct Chemical Injection Before/After the SCR” by Mike Wood, Solvay; Dave Van Arnam, Nol-Tec (Amphitheater Room) This workshop will address methods of treating SO₃ in the flue gas using dry sodium injection at high and low temperatures to prevent formation of bisulfates in the duct and sulfuric acid emissions from the stack. Discussions will include methods for estimating treatment quantities and effectiveness, injection site selection, product handling, overall design considerations.

Discussion Group I: “Boiler Control Challenges” Presenters: Alan Paschedag, Siemens; Rob Mudry, Airflow Sciences; Tony Widenman, DTE (Rose Room) Successful NO_x reduction is only possible while controlling the air and fuel throughout the delivery and combustion process. There are methods for increasing the air and fuel management on coal fired boilers. Several methods of improving the regulation and balance of the fuel and air supply will be discussed.

Workshops and Panels

Tuesday, February 9, continued

1:00 - 2:30 pm

Panel I: "SCR Performance Enhancement" Chairman: Michael O'Connor, Duke Energy Panelists: Betty Hansen, Babcock and Wilcox; Rob Mudry, Airflow Sciences; Nancy Stephenson, Cormetech; Stephen Guglielmo, Hitachi; Sterling Gray, URS; Darren Hanby, AEP; Ed Healy, Southern Company (Walker Room) The panel will discuss approaches being used and developed to improve SCR performance, as well as potential catalyst enhancements, pre-SCR SO₃ mitigation and process testing and improvement. Utility representation will provide a sample of current efforts underway in the industry.

Panel II: "Biomass Panel" Chairman: Nathan Ladner, Southern Company Panelists: Kevin Davis, REI; Philip McKenzie, Babcock & Wilcox; Jeremiah Haswell, Southern Company; Jordon Solomon, Ecostrat; Thomas Wells, Southern Company (Rose Room) The Biomass Panel will be a panel of experts to help answer questions about supply issues facing developing biomass projects, combustion technology selection, performance improvements, co-firing with coal, and regulatory issues. The format will be a mixed format of presentations and discussion.

3:30 - 4:30 pm

Workshop 20: "NO_x, NH₃, SO₃ Monitoring System Improvements" by Rick Himes, EPRI (Walker Room) A status report of optically based instrumentation for NH₃, SO₃, and NO_x within the coal-fired boiler industry will be presented. Case study applications where monitors have worked reliably will be reviewed, along with issues that have impaired operability at other sites.

Workshop 21: "New Catalyst Advancements" by Nate White, Haldor Topsoe (Roberts Room) This workshop will describe where we are going with new catalyst developments in the power industry to meet new demands. There is a considerable interest in the utilization of SCR catalyst at lower and higher flue temperatures utilizing both solid and liquid fuels. These changes represent a challenge to the designers of Selective Catalytic Reduction (SCR) units when combined with still tighter limits on emission of NO_x, the use of alternate and dirtier fuels and longer runs between major outages. Past experiences and future developments demonstrate that choosing the right plant configuration and proper catalyst formulation is extremely important.

Workshop 22: "High Volume SCR Catalyst Testing for QA/QC in a Production Regeneration Environment" by Mike Cooper, Coalogix (Amphitheater Room) In this workshop, a multi-sample test reactor approach to high volume SCR catalyst testing will be presented. This approach allows for accurate and rapid determination of all critical catalyst performance characteristics using novel approaches to flue gas generation, flow control and gas analysis. Test data using the MSTR approach have shown excellent agreement with bench test results when the same sample is tested in both systems.

Workshop 23: "Biomass Co-firing Impact on NO_x, Catalyst and SCR Operation" by Peter Struckman, E.ON Engineering (Rose Room) The use of biomass as a secondary fuel in coal fired power plants is an option to meet the growing demand for energy from renewable sources and other environmental requirements. However, these fuels are significantly different from the design fuels and can therefore cause major operational problems like slagging, fouling, corrosion, ash utilization or severely increased deactivation of SCR- catalysts. Some "highlights" of these problems and the solutions found during the extensive use of biomass in E.ON plants will be discussed in the workshop.

4:30 - 5:30 pm

Workshop 24: "Hg CEMS: Are we ready for MACT?" by Sharon Sjostrom, ADA-ES (Walker Room) This workshop will offer an overview of operational experiences with installed Hg CEMS, suggestions for getting the best performance from your Hg CEMS, and expected challenges associated with meeting post-MACT measurement requirements.

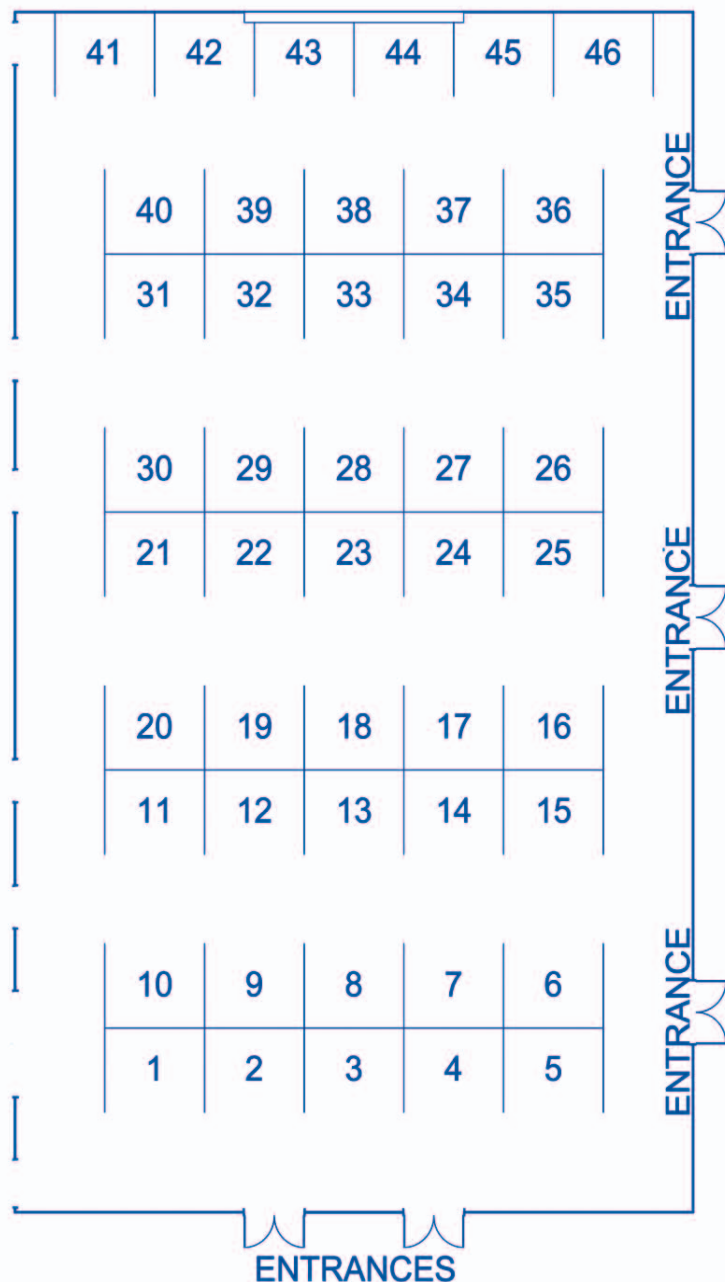
Workshop 25: "Arsenic Mitigation - Lessons Learned" by Megan Murphy, PPL Montour, and Martha Watson, E.ON Engineering (Roberts Room) Arsenic poisoning is one of the major catalyst deactivation mechanisms for coal fired SCR applications in the US. The addition of limestone to the coals is an effective way of extending the lifetime of catalyst and increasing the range of acceptable fuels. In this workshop, PPL will share the experience and lessons learned from operating such an arsenic mitigation system for nearly 10 years.

Workshop 26: "Flue Gas Condensibles Measurement" by Richard McMillian, URS (Amphitheater Room) A number of compounds that are found in flue gas streams of coal fired utility boilers can be considered "condensable". These can include: sulfuric acid, ammonia, ammonium salts (such as ammonium bi-sulfate (ABS)) and volatile organic compounds (VOC). Knowing the quantities of these condensable compounds, especially sulfuric acid and ABS, is important with respect to plant operations, in particular: corrosion, air heater pluggage, emissions and plume opacity. This presentation will discuss test methods for measuring these condensables and potential problems that can be encountered with the methods.

Workshop 27: "Biomass Co-firing Impact on Boiler Operations" by Michael Davidson, Babcock Power, and Rich Abrams, Babcock Power (Rose Room) Co-firing of biomass in a coal fired boiler needs to be carefully evaluated before trials and implementation. Biomass fuels vary considerably and issues from burning these fuels such as slagging, ash handling, and impacts on air pollution control systems can impact boiler operations. Information on key parameters to investigate in co-firing will be presented in this workshop.

2010 Exhibition Layout

2010 Exhibitors



Chattanooga Ballroom Chattanooga Hotel

Acoustic Cleaning Systems	.32
ADA Environmental Solutions	.1
AMC Power	.19
Air Tek Construction	.22
Airflow Sciences	.38
Alstom Power Services	.45 & 46
A.V.C. Specialists	.27
Babcock & Wilcox	.40
Babcock Power	.6
Biomass Energy Technologies	.12
Breen Energy Solutions	.2
Cemtek	.42
Ceram Environmental	.39
Coalogix	.16 & 17
Cormetech	.21
E.ON Engineering	.7
Evonik Energy Services	.34 & 35
FERCo	.24
Fuel Tech	.10
Greenbank Energy	.44
Haldor Topsoe	.26
Hitachi Power Systems	.28
Johnson Matthey Catalysts LLC	.14
Kiewit	.11
Krishnan & Associates	.3
Lectrus	.23
M&C Tech Group	.20
Nalco Mobotec	.8 & 9
Nol-Tec Systems	.5
NoNOx Components	.29 & 30
RE Consulting	36 & 37
SAS Global	.43
Synterprise	.18
Terra Environmental Technology	.25
Testo	.31
URS	.15
Wahlco	.41

Reinhold Environmental Conference Staff

Susan D. Reinhold – Chairman and CEO
Virginia Plaster – Conference Manager
Rollanda Cothran – Conference Support

Sandy Crynack – Registration Manager
Eileen Plaster – Conference Support
Kathleen Reinhold – Conference Support

2010 NOx Exhibitors

Acoustic Cleaning Systems, Inc.32

P.O. Box 609
Alexandria, AL 36250
Paul Argo, President
pargo@acousticcleaning.com
Business: 256-820-8427 Fax: 256-820-6570
www.acousticcleaning.com



Acoustic Cleaning Systems, Inc. is a manufacturer of sonic horns / acoustic cleaners for a variety of utility and industrial applications. Applications include boilers, ESP's, baghouses, SCR reactors, and ductwork and material handling applications. ACS also specializes in repair and replacement parts for all major brands of sonic horns.

ADA Environmental Solutions1

8100 SouthPark Way, Unit B
Littleton, CO 80120
Rich Miller, VP,
Business Development of Utility Systems
richm@adaes.com
Business: 303-734-1727 Fax: 303-734-0330
www.adaes.com



ADA Environmental Solutions (ADA-ES) develops environmental technologies and specialty chemicals that enable coal-fired power plants to achieve environmental compliance, enhance air pollution control equipment and increase operating efficiencies. Products include: flue gas conditioning chemicals/ delivery systems, activated carbon injection systems, activated carbon sorbents, mercury and SO₃ testing/ demonstration programs and sorbent injection systems for SO₃ pt control. We are also developing dry sorbent CO₂ reduction technologies.

Airflow Sciences Corporation38

12190 Hubbard
Livonia, MI 48150
Robert G. Mudry, P.E., President
rmudry@airflowsciences.com
Business: 734-525-0300 Fax: 734-525-0303
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.

AirTek22

700 Hudson St.
Troy, AL 36081
John Roberts, President
jr@airtek-troy.com
Business: 334-566-7400 Fax: 334-566-7496
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 including SCR, catalyst addition and replacement services.

Alstom Power Inc.45 & 46

9737 Cogdill Road, Suite 211
Knoxville, TN 37932
Corey Deye, Environmental Services Manager
corey.deye@power.alstom.com
Business: 865-671-5923 Fax: 865-675-5080
www.power.alstom.com



Alstom Power manufactures, erects, commissions and services pollution control systems for utility, IPP and process industry plants. This includes SCR systems for NOx control, FGD systems, ESP's, fabric filter systems and monitoring, and mercury control. Alstom's capabilities comprise new equipment, retrofit projects, replacement and upgrade components, inventory and rebuild programs, performance enhancement, technical and field service support, construction and commissioning.

AMC Power, a division of Air Monitor Corp.19

1050 Hopper Avenue
Santa Rosa, CA 95403
Bernie Abramczyk, Sales Manager
amcsales@airmonitor.com
Business: 919-244-8181 Fax: 919-363-6738
www.airmonitor.com



AMC Power provides coal mass flow and airflow measurement solutions for combustion optimization and boiler diagnostics. AMC offers high accuracy systems and field testing services for all PA, SA, OFA, individual burner air and individual coal pipe mass flows. Our proven solutions for all coal-fired boiler types help improve overall plant performance while reducing NOx and CO emissions.

A.V.C. Specialists, Inc.27

5146G Commerce Ave.
Moorpark, CA 93021
Tom Shideler, President
sales@avcspecialists.com
Business: 805-531-8900 Fax: 805-531-8903
www.avcspecialists.com



Now part of Buell APC
A CECO Environmental Company

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.

The Babcock & Wilcox Company40

20 S. Van Buren Avenue
Barberton, OH 44203
Amy C. Rossi, Sales Operations
acrossi@babcock.com
Business: 330-860-1004 Fax: 330-860-1868
www.babcock.com



B&W is a leading, international provider of energy products and services. Capabilities include the design, manufacture and installation of low NOx burners, overfire air systems, SCR systems, wet and dry FGD systems, fabric filter baghouses, electrostatic precipitators and sorbent injection systems to control NOx, SO₂, SO₃, particulates and mercury emissions. B&W also provides environmental equipment improvement products and services.

Babcock Power Inc.6

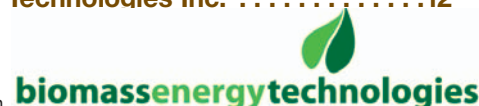
5 Neponset Street
Worcester, MA 01606
Tony Licata, Vice President Business Development
tlicata@babcockpower.com
Business: 508-854-3853 Fax: 508-854-3800
www.babcockpower.com



Babcock Power Inc., through its subsidiaries, is a leading worldwide supplier of technology, equipment and services for the Power Generation industry. We offer a complete set of environmental solutions including SCR's, RSCR's, flue gas desulfurization scrubbers, mercury removal systems and low NOx burners; heat exchangers, steam surface condensers, feedwater heaters, MSRs; HRSG's; and steam generators with associated fuel preparation and firings systems.

Biomass Energy Technologies Inc.12

5531 Eagle Lane
West Chester, Ohio 45069
D. Gary Madden, COO
dgmadden@co2credit.com
Business: 513-759-0237 Fax: 614-388-5538
www.biomassenergytechnologies.com



Biomass Energy Technologies (BET) is a biomass fuel supplier offering both unprocessed and processed biomass including pelletized and torrefied biomass products. BET's strategic partnership agreements solve the main issues in biomass utilization: 1) a consistent product 2) long term supply and pricing agreements backed by a Global financial institution 3) professional administration of contracts that maximize credits and subsidies and assure compliance.

2010 NOx Exhibitors

Breen Energy Solutions2

104 Broadway Street
Carnegie, PA 15106
Chetan Chothani, Director,
Business Development
chetan.chothani@breenes.com
Business: 412-431-4499 Fax: 412-431-4104
www.BreenES.com



Breen Energy Solutions is a provider of real-time, in-situ, continuous measurement technology for flue gas condensables such as Ammonium Bisulfate (AbS) and SO₃. Direct AbS measurement enables the end user to minimize Ammonia Slip and avoid Air Heater fouling within balanced impact on Heat Rate. Direct SO₃ measurement enables the end user to mitigate blue plume and back-end corrosion with lower chemical injection rates and balanced impact on Heat Rate.

Cemtek42

Linden, NJ 07036
Santa Ana, CA 92707
Joanne Randall, CEMS Specialist
joanne@cemteks.com
Business: 888-400-0200 714-437-7100 Fax: 714-437-7177
www.cemteks.com



Cemtek Environmental is a full service Continuous Emission Monitoring Systems integration and service company specializing in NH₃, NOx, SO₂, CO, CO₂, O₂, PM, THC and Mercury measurements for ambient, stack, process, and compliance needs. In addition to the traditional CEMS, Cemtek also offer insitu O₂, CO and tunable diode laser monitors for more efficient combustion process monitoring. Make us your #1 choice in combustion analyzers, CEM Systems, Opacity, Flow, Services and Parts.

Ceram Environmental, Inc.39

7304 W. 130th St., Suite 140
Overland Park, KS 66213
John Cochran, President
info@ceram-usa.com
Business: 913-239-9896 Fax: 913-239-9821
www.frauenthal.net



Leading manufacturer of homogeneous honeycomb DeNOx catalyst since 1985. Ceram's experience includes over 400 DeNOx applications regarding nearly every fuel type: coal (bituminous, PRB, and brown coal), heavy fuel oil, orimulsion, natural gas, and various waste byproducts. CERAM provides SCR system/catalyst management services that include AIG tuning; catalyst testing and management; and SCR operations evaluation/troubleshooting.

Coalogix16 & 17

11701 Mt. Holly Rd.,
Charlotte, NC 28214
Lloyd Swaringer, Quality/Marketing Manager
les@coalogix.com
Business: 704-812-4068 Fax: 704-827-8935
www.coalogix.com



Coalogix provides cutting edge services to coal fired generating facilities to reduce their environmental footprint through technology, optimization and efficiency improvements. Coalogix owns SCR Tech which is a leading provider of catalyst regeneration technologies and management services for selective catalytic reduction systems. Coalogix also provides its Metallifix™ technology which captures and remediates mercury emissions from coal fired plants.

Cormetech, Inc.21

5000 International Drive
Durham, NC 27712
Nancy Stephenson, Director,
Services & Contracts
Stephensonnd@cormetech.com
Business: 919-595-8706 Fax: 919-595-8701
www.cormetech.com



Cormetech is a world leading supplier of catalysts for SCR systems reducing nitrogen oxides (NOx) from stationary sources. Cormetech's diverse experience of >1000 installations range from boilers firing PRB and hi-sulfur coals to simple cycle gas turbines operating at temperatures as high as 1100°F. Cormetech's catalysts are integral to high performing SCR technology with NOx reduction capable of >90%.

E.ON Engineering7

4001 Bixby Road
Groveport, OH 43125
Dr. Peter D. Struckman, President
peter.struckman@eon-engineering.us
Business: 614-830-0817 Fax: 614-830-0816
www.eon-engineering.com



E.ON Engineering Corp. provides services in the field of clean air technologies in fossil-fired power plants. Among our customers are AEP, Southern Company and E.ON U.S., with whom we have exclusive long-term contracts for fleet wide SCR catalyst management. Other services include field-testing, FGD and SCR performance / acceptance tests, AIG tuning and combustion optimization.

Evonik Energy Services 34 & 35

304 Linwood Road, P.O. Box 1727
Kings Mountain, NC 28086
Dorothee Seidel, Marketing Manager
Dorothee.Seidel@evonik-energyservices.us
Business: 704-734-0688 Fax: 704-734-1088
www.evonik-energyservices.us



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

Fossil Energy Research Corporation.24

23342-C South Pointe
Laguna Hills, CA 92653
Richard Thompson, President
rthompson@ferco.com
Business: 949-859-4466 Fax: 949-859-7916
www.ferco.com



FERCo is an engineering services and R&D company specializing in combustion and emissions control. Founded in 1984, the company provides research, pilot-scale development, and full-scale evaluation services to industry and government in the area of applied energy and environmental systems. FERCo also specializes in the development of advanced measurement systems for the utility industry. FERCo recently introduced KNOxcheck™, a system to measure catalyst activity in situ.

Fuel Tech, Inc.10

27601 Bella Vista Parkway
Warrenville, IL 60555
Kevin Dougherty, VP Business Development & Marketing
info@ftek.com
Business: 630-845-4500 Fax: 630-845-4501
www.ftek.com



Fuel Tech, Inc. provides technologies for multi-pollutant emission control and advanced combustion technologies; including 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. Products include: NOxOUT® and HERT™ SNCR systems, NOxOUT Cascade® (Hybrid SNCR/SCR), NOxOUT Ultra® to generate on-site ammonia for SCR, sorbent injection systems to control SO₂, flue gas conditioning systems, and Targeted in Furnace Injection (TIFI) programs to reduce slagging, SO₃ and CO₂ emissions, and improve boiler performance.

Greenbank-CBP 44

185 Plumpton Ave.
Washington, PA 15301
Don Halulko, VP/Group Sales Director
halulko@cbpengengineering.com
Business: 724-229-1180 Fax: 724-229-1185
www.cbpengengineering.com



The Greenbank Group provides the coal fired power industry with products that lead our customers to plant availability through efficiency. Greenbanks Group companies include CBP Engineering's traditional abrasion resistant linings, complimented by the specialized technologies offered by Greenbank Energy Solutions to enhance your boiler operation. Our high performance VARB® splitters provide combustion optimization through the ability to deliver balanced coal flow to the boiler.

2010 NOx Exhibitors

Haldor Topsoe, Inc.26

17629 El Camino Real, Suite 300
Houston, TX 77058
Nate White, Director,
Business Development
tnw@topsoe.com
Business: 803-835-0571 Fax: 281-228-5129
www.topsoe.com



Haldor Topsoe is a market leader in the development and supply of heterogeneous catalyst and technology with over 1,000 references operating worldwide. Topsoe's DNX catalyst has proven over the last 20 years to provide NOx reduction while achieving a high tolerance to common catalyst poisons. Topsoe offers SCR catalyst for all fuels and applications ranging from large boilers to high temperature gen-sets, and has recently added both a low (down to 300°F) and high temperature (up to 1,200°F) line of DNX catalyst that significantly increases overall NOx efficiency.

Hitachi Power Systems America, Ltd.28

645 Martinsville Road
Basking Ridge, NJ 07920
Anthony Favale, Director- SCR Products
anthony.favale@hal.hitachi.com
Business: 908-605-2758 Fax: 908-604-6211
www.hitachipowersystems.us



Hitachi, original co-developer of DeNOx catalyst, has supplied NOx removal catalyst for over 30 years to over 700 plants including over 350 SCR systems worldwide. Hitachi has the experience and knowledge to supply catalyst and services for Low SO₂ Oxidation, longer life catalyst and TRAC™ our enhanced Hg Oxidation catalysts for a full range of coals (Bituminous, PRB, Pet Coke, and Lignite); Natural gas up to 1050°F; Catalyst Management; Testing, Regeneration, AIG Optimization.

Johnson Matthey Catalysts LLC14 (formerly Argillon LLC)

5895 Shiloh Road, Suite 101
Alpharetta, GA 30005
Cindy Khalaf, President
cindy.khalaf@jmusa.com
Business: 678-341-7520, Fax: 678-341-7509
www.jmcatlysts.com



Johnson Matthey is a specialty chemicals company focused on its core skills in catalysts, precious metals, fine chemicals and process technologies. The \$15 billion company has been providing catalytic solutions for air quality problems for more than 30 years. The company is backed by a reputation for superior reliability, design, engineering and manufacturing, technological expertise and customer service. Johnson Matthey Catalysts LLC based in Alpharetta, Georgia focuses on the fossil-fired power plants throughout North America.

Kiewit11

8455 Lenexa Drive
Lenexa, KS 66214
Lance Hendrix,
President, Kiewit Power Engineers
lance.hendrix@kiewit.com
Business: 913-928-7000 Fax: 913-928-7500
www.kiewit.com



Kiewit designs and constructs power projects to meet the energy demands of growing communities in the United States and Canada. With proven, full-scale engineering / procurement / construction / startup (EPC) capabilities, Kiewit offers services in combined and simple cycle gas, coal, AQCS, renewables, and other emerging energy markets.

Krishnan & Associates, Inc./Enstreet.com3

1516 Bedford Street
Stamford, CT 06905
Ravi Krishnan, Managing Director
ravi@krishnaninc.com
Business: 203-921-1800 Fax: 203-854-6758
www.krishnaninc.com



Krishnan & Associates is a full service consulting firm providing marketing & communication services, market research, recruitment, and mergers & acquisition services specifically tailored to the power industry and to clean energy technology providers. Our clients include OEMs, engineering firms and utilities. We also operate a clean energy web portal, www.enstreet.com, providing the latest energy and emissions information on a daily basis.

Lectrus Corporation23

2215-C Olan Mills Drive
Chattanooga TN 37421
Deron Austin, Vice President of Marketing
daustin@lectrus.com
Business: 423-553-6125 Fax: 423-892-5481
www.lectrus.com



Lectrus Corporation is headquartered in Chattanooga, Tennessee and founded in 1968. The company is an industry leader, developing solutions for a wide range of clients and industries, including custom manufactured equipment centers that integrate and protect switchgear, motor controls and other electrical components in the power market. We also build operator centers and custom metal enclosures for a variety of applications and markets.

M&C TechGroup20

6019 Olivas Park Drive, Suite G
Ventura, CA 93003
Cliff Gordon, President and CEO
cgordon@mac-products.com
Business: 805-654-6970 Fax: 805-654-6971
www.mc-techgroup.com



M&C Products is the proven industry leader for extractive sample systems and has components to meet any gas phase sampling requirement. M&C has provided sample probes for over 20,000 installations worldwide to date. Field proven solutions for SCR, FGD, and various emission monitor dilution probes will be on display.

Nalco Mobotec8 & 9

2605 Nicholson Road
Sewickly, PA 15143
Jay Crilley, President
jcrilley@nalcomobotec.com
Business: 330-302-5394
www.nalcomobotec.com



Nalco Mobotec is a global leader in analysis, technology and total solutions for coal-fired power plants around the world who are seeking to reduce their emissions without sacrificing combustion efficiency and plant up-time. Nalco Mobotec's full array of NOx, SOx, Mercury, BioMass, Combustion Efficiency and Air Protection Technologies provide coal-powered power plants with solutions they can trust that deliver results.

Nol-Tec Systems, Inc.5

425 Apollo Drive
Lino Lakes, MN 55014
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 flyash handling systems. Nol-Tec is dedicated to providing the best value in the form of high-quality products and unparalleled customer service.

NoNOx Components, LLC29 & 30

2713 Oak Lake Blvd.
Midlothian, VA 23112
Michael Edwards, General Manager
michael.edwards@nonox.biz
Business: 804-639-2600, ext. 20 Fax: 804-639-2601
www.nonox.biz



NoNOx Components is the leading supplier of warranted high temperature erosion resistant LPA/Popcorn Ash screen systems for plugging protection of catalyst. NoNOx supports utilities and OEM's in the design and manufacture of components for effective filtration over long service intervals while minimizing pressure drop. NoNOx patent pending screens are currently deployed in over 25 SCR's in the U.S.

2010 NOx Exhibitors

RE Consulting36 & 37

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

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.

SAS Global Corporation43

21601 Mullin Avenue
Warren, MI 48089
Fred Haumesser,
Manager of Combustion Optimization
fredh@sasglobalcorp.com
Business: 248-414-4470 Fax: 248-414-4480
www.sasglobalcorp.com



The SAS Global "Total Solution Approach" to your combustion concerns is a custom-tailored solution based upon your specific goals. Reduce Flyash LOI, NOx and Slagging, while Increasing Boiler Efficiency.

Synterprise Solutions18

1110 Market Street, Suite 525
Chattanooga, TN 37402
Haley Gautreaux, VP of Business Development
hgautreaux@synterprise.com
Business: 423-267-5363 Fax: 423-265-2350
www.synterprise.com



Synterprise Solutions provides emission related equipment and operational optimization services to improve utility and industrial clients' operations and reduce a wide variety of environmental emissions. Our strengths are identifying and eliminating waste, increasing productivity, decreasing emissions while improving combustion efficiency, and improving quality of the production process. Synterprise's Integrated Multiple Air Pollution System [IMPAPS] offers a customized, cost effective, emission mitigation system to provide individualized environmental improvement strategies.

Terra Environmental Technologies25

a Terra Industries Company

600 4th Street, P.O. Box 6000
Sioux City, IA 51101-6000
Barry W. Lonsdale, President
blonsdale@terraindustries.com
Business: 712-277-1340 Fax: 712-294-1284
www.terraindustries.com



Terra Environmental Technologies
A Terra Industries Company

Terra Environmental Technologies manufactures and delivers on-demand reagent solutions to help reduce nitrogen oxides (NOx) and other emissions from power plants, large industrial applications and diesel engines. TET also provides a compliment of support services including Technical, Maintenance and Environmental Health and Safety.

Testo Inc.31

40 White Lake Road
Sparta, NJ 07871
Craig McKim, Market Manager
info@testo.com
Business: 800-227-0729 Fax: 862-354-5020
www.testo350.com



Portable Emission Analyzers

Simplify your NOx testing with the testo 350 Portable Emission Analyzer. Testo advanced sensors and advanced design are the reasons for the highest accuracy and ease-of-use. SCR balancing and testing has never been easier. Come see the latest addition to testo's line of Thermal Imagers, the new testo 875/881. These cameras, coupled with powerful software, will simplify your preventive maintenance programs.

URS Corporation15

1600 Perimeter Park Drive
Morrisville, NC 27560
Gunseli Shareef, PhD
Vice President Power Sector
gunseli_shareef@urscorp.com
Business: 919-461-1454 Fax: 919-461-1415
www.urscorp.com



A global leader in engineering, design, construction, and program management, URS Corporation provides the complete life cycle of services to clients in the power industry - fossil fuels, cogeneration, emissions control (NOx, SO₂, SO₃, CO₂, toxics), renewable energy, hydroelectric, nuclear, transmission and distribution.

Wahlco, Inc.41

2722 S. Fairview Street
Santa Ana, CA 92704
Barry Southam,
Vice President of Sales & Marketing
bsoutham@wahlco.com
Business: 714-979-7300 Fax: 714-979-0603
www.wahlco.com



Wahlco serves the power industry through the manufacture and supply of SO₃ and NH₃ Flue Gas Conditioning (FGC) systems, small NOx reduction (SCR and SNCR) systems, ammonia systems for SCR plus Urea-to-Ammonia "U₂A™" systems for DeNOx and industrial applications.



Upcoming Conferences

2010 APC/PCUG Conference

Embassy Suites Resort Hotel
Concord, NC
July 18-22, 2010
Hosted by Duke Energy

The 2010 APC Round Table includes 2 days of O&M panels and technical workshops (with the first 4 hours for training) given by coal-fired power generation, particulate control, and scrubber industry experts with an 83-booth exhibition. The 2010 2-day APC PCUG Meeting is an O&M meeting open only to equipment users. **NOTE: The conference event will be held at the Lowe's Motor Speedway in Charlotte.**

2011 NOx-Combustion/PCUG Conference

The Wynfrey Hotel
Birmingham, AL
February 7-10, 2011
Hosted by Southern Company

The 2011 NOx-Combustion Round Table includes 2 days of O&M panels and technical workshops (with the first 4 hours for training) given by coal-fired power generation, NOx control, and combustion industry experts with a 48-booth exhibition. The 2-day 2011 NOx PCUG Meeting is an O&M meeting open only to equipment users.

Air Pollution Control Services

from concept to compliance

- * **New/Retrofit Installations**

 - ◆ 40,000 MW FGD

 - ◆ 23,000 MW SCR

- * **SBS Injection™ Technology**

- * **Controls Optimization/Troubleshooting**

- * **Performance Testing**

URS