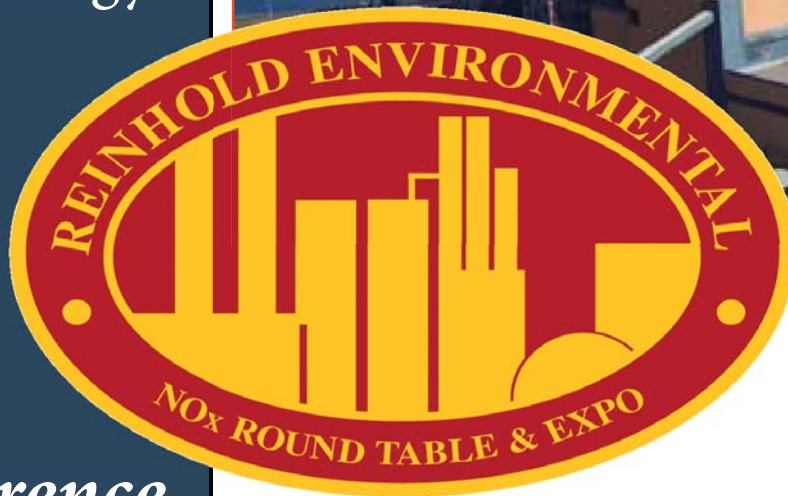


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13th Annual

NO_x-Combustion Round Table

**NO_x Emissions, Combustion O&M,
Mercury, SO₃, Acid Gases**

*2014
Show Guide*



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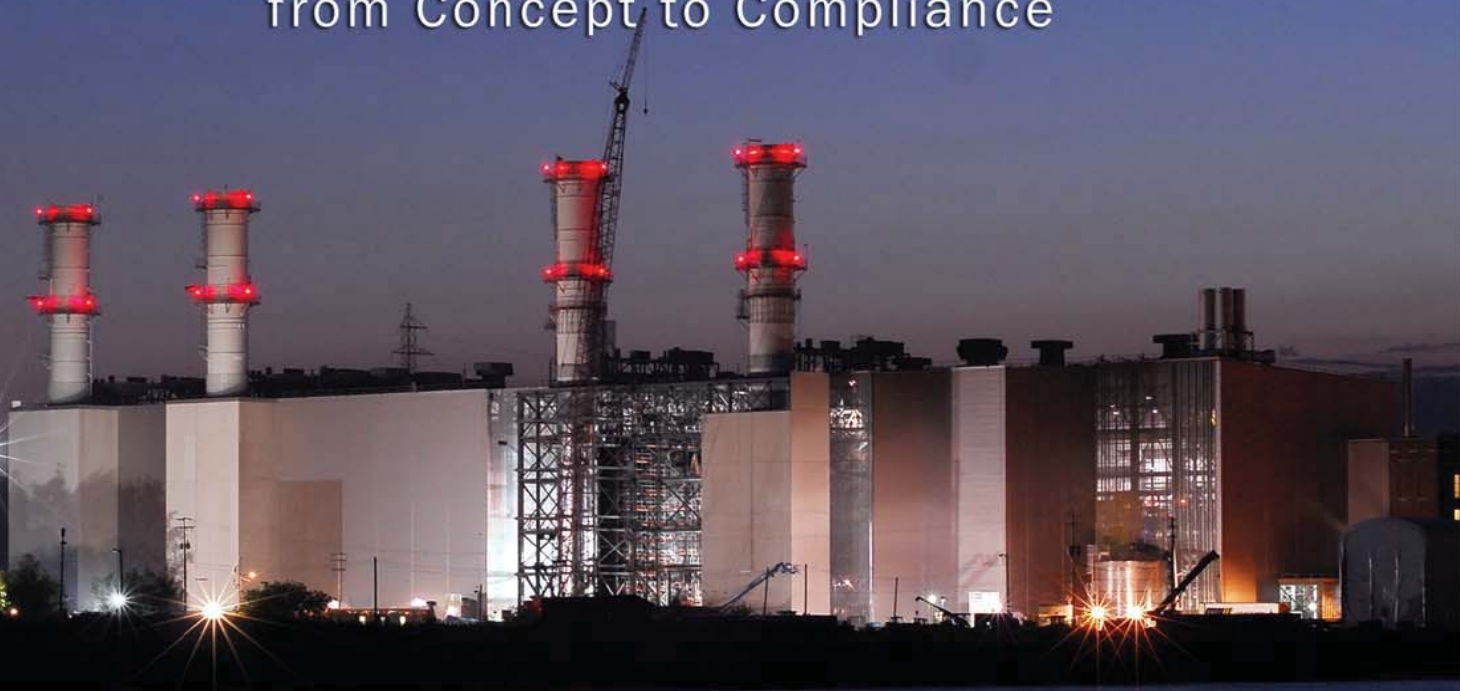
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Workshops and Panels

Monday: February 10, 2014

8:00 to 9:30 am

Training Class 1: “Keeping the SCR Fit (AIG Tuning, Catalyst Testing, Inspection and NH₃ System Inspections and Requirements)” by Philip Elliott, STEAG (Venice I)

This training class will discuss overall maintenance and operational practices for the optimal performance of the SCR System. It will include such topics as proper AIG Tuning, Catalyst Testing, SCR Inspections, and Ammonia Inspections. Best practices and lessons learned will be the overall emphasis of the course.

Training Class 2: “Low and High Temperature Corrosion Associated with Pollutant Control Technologies” by Kevin Davis, REI (Terrace Ballroom)

This training class will describe increased corrosion rates in coal-fired boilers using emission control technologies. Corrosion mechanisms for both high-temperature water wall corrosion resulting from NO_x control technologies and low-temperature air heater corrosion resulting from bromine-based mercury control technologies will be reviewed. Corrosion impacts of Section 45 fuel additives will also be discussed.

Training Class 3: “Challenges in Meeting Upcoming Wastewater Discharge Limits” by Michelle Mayfield, URS (Venice II)

EPA’s proposed Effluent Limitation Guidelines (ELGs) include numeric technology-based effluent limitations for arsenic, mercury, selenium and nitrate-nitrites as well as no discharge requirements for selected coal combustion residual products. Combined with North Carolina’s pending regulations for more stringent water quality standards for metals, power stations may have a moving target to aim for when establishing compliance strategies. These and other upcoming challenges to meeting wastewater discharge limits in the southeast will be reviewed.

Training Class 4: “Boiler Combustion Tuning 101” by Alan Paschedag, Siemens (Venice III)

Combustion tuning involves a wider view than just adjusting burner registers. Primary air and coal flow, excess air and secondary air balance all contribute to successful tuning. Planning, comparing, recording data and accounting for coal burned all contribute to the results of combustion tuning.

10:15 to 11:45 am

Training Class 5: “Bench-scale SCR Catalyst Testing” by Ken Jeffers, SRI (Venice I)

Bench-scale testing is useful for determining catalyst performance and supporting catalyst management. This training class will review specific measurements performed, testing methods, and critical parameters that affect results. Common misconceptions and testing pitfalls to avoid will also be discussed.

Training Class 6: “Fuel Effect on Boiler Maintenance and Catalysts” by Bill Medeiros and Enrique Vega, Babcock Power (Terrace Ballroom)

Coal fired boilers are designed to take into consideration the capacity and thermal conditions of the steam generation system while providing a reliable operation when firing a specific fuel. Fuel deviations from the originally specified coal will push the operating boundary limits and eventually create the need for additional maintenance. Types of coals and their physical and chemical properties will be reviewed as they impact the maintenance of the fuel equipment, the boiler proper and the boiler auxiliary equipment. Impact to SCR systems and specifically the catalyst will be reviewed as a result of the fuel characteristics.

Training Class 7: “DSI: Impact on Flyash and Wastewater” Chairman: Connie Senior, ADA-ES / Panelists: Curt Biehn, Mississippi Lime; Michael Atwell, Solvay; Howard Fitzgerald, LHoist (Venice II)

When dry sorbent injection (DSI) sorbents are injected for acid gas control, they interact with multiple constituents in the flue gas (SO_x, HCl, trace metals). Once the spent sorbents are collected, further interactions may occur because of the presence of the DSI sorbents in the collected fly ash. Thus, the DSI sorbents may have an impact on fly handling, fly ash disposition, and wastewater treatment in the plant. A panel of industry experts will provide their views on this topic.

Training Class 8: “Low NO_x Burners” by Tony Favale, Hitachi (Venice III)

This training class will first have a short review of the original coal burner designs and how they were efficient for combustion but bad for NO_x. Then the evolution of Low NO_x Burners along with Over Fired Air will be discussed. How burners are designed today for durability, low load capability, and fuel flexibility will also be included plus the latest performance capabilities of LNBs.

Workshops and Panels

Monday: February 10, 2014 (cont.)

LUNCH in Exhibition Hall (11:45 to 1:00 pm)

1:00 to 2:30 pm

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

The Round Table Awards will be given to George Valentine, Dominion; Nancy Stephenson, Cormetech and Jim Chaney, formerly of Ameren.

Keynote Speech: “Power Industry Dynamics Related to the Natural Gas Influence and its Impact on Coal Generation” by *Dave Renner, Vice President, Power Generation Operations, Central Engineering and Services, Duke Energy* (Terrace Ballroom)

This keynote address will provide a review and update of the impact Shale Gas is having on the coal fleet and the game changer it has become.

2:45 to 3:45 pm

Workshop 1: “Current Status and Challenges of Hg Oxidation Testing of SCR Catalyst” by *Thorsten Dux, STEAG* (Venice I)
Everyone is talking about mercury oxidation in the SCR to boost the capture within the FGD. Some even buy specially advertised catalyst or additives to increase the oxidation of mercury by the catalyst. But where do we stand with the verification testing of mercury oxidation by SCR catalyst? What is the current status of mercury oxidation catalyst testing in the lab and how can the results be used for catalyst management? Will catalyst management be driven by the SCR’s mercury oxidation performance? What are the challenges and unresolved issues and questions surrounding mercury oxidation testing of SCR catalyst in the lab?

Workshop 2: “SCR Phosphorus Poisoning Prevention & Reducing Br for Hg Control” by *Mandar Gadgil, Babcock & Wilcox and Murray Abbott, Chem-Mod* (Terrace Ballroom)

This workshop will discuss the use of additives to prevent SCR catalyst poisoning by phosphorus when firing PRB coal, and to minimize bromine requirements for Hg control. In the first part, the benefits of the Mitagent combustion additive for phosphorus poisoning control of the SCR will be discussed. A cost comparison will be given for operating a unit in staged mode and in de-staged mode from the standpoints of both capital and operating costs. In the second part, both pilot- and full-scale data to demonstrate the effectiveness of the combined combustion additives for reducing bromine injection rates while achieving mercury MATS emission compliance will be reviewed. The potential of the blended combustion additive as a lower-cost and effective alternative to ACI for Hg control will also be discussed.

Workshop 3: “CO Catalyst” by *David Repp, Johnson Matthey* (Venice II)

CO catalyst sizing considerations for various applications, including coal-to-gas conversions and gas turbines, will be presented. Operation and Maintenance recommendations to optimize catalyst life will also be discussed.

Workshop 4: “Boiler Load Cycling Issues and Strategies” by *Don Ryan, Babcock & Wilcox* (Venice III)

Today’s economics are forcing coal fired power plants away from base load operation and into load cycling modes. Meanwhile the regulatory environment requires emissions compliance across the load range. This workshop will discuss some of the issues associated with this mode of operation along with some strategies to overcome these problems.

4:30 to 5:30 pm

Workshop 5: “Mercury Oxidation in the SCR – Layer by Layer Performance” by *Kyle Neidig, Hitachi* (Venice I)

With the MATS compliance dates approaching, many utilities are planning to rely heavily on their SCR’s catalyst to provide the needed mercury oxidation to comply with the new mercury limit. Utilities will be placing more focus on catalyst design, type, and installation location in the SCR than ever before. Hitachi has conducted several tests to determine the best location in the SCR to install catalyst to optimize the mercury oxidation efficiency across the SCR and the results of these tests will be shared in this presentation

Workshop 6: “A Case Study in SCR Flow Modeling to Correct Flyash Accumulation” by *Scott Hiedeman, KCP&L* (Terrace Ballroom)

The Selective Catalytic Reduction (SCR) system installation at LaCygne Unit 1 in 2007 quickly experienced issues with PRB fly ash accumulation, causing KCP&L to replace eight catalyst layers in five years, and vacuum 2,900,000 lbs. of flyash from the SCR in 2012.

Workshops and Panels

Monday: February 10, 2014 (cont.)

This LaCygne case study discusses how proper technology and flow modeling can solve persistent plant issues. We will summarize the SCR design and modeling criteria for successful installations. The case study is presented for an 815 MW PRB coal plant SCR hood retrofit.

Workshop 7: “Overcoming Great Challenges in CCP Management” by Mark Rokoff and Gabe Lang, URS (Venice II)

As the power industry faces significant changes centered on the management of coal combustion products (CCPs), there are many unknown factors that can impact a CCP program. The regulatory atmosphere corresponding to the management of CCPs remains uncertain and utilities are faced with a collection of challenges that impact the success of the programs. Based on our experience with the CCP industry across the country, this presentation has compiled the greatest challenges faced by CCP management projects (technical and non-technical) and will present approaches to address and resolve these challenges.

Workshop 8: “Comprehensive Boiler Testing and Tuning Approach for a 550MW Corner Fired PC Boiler” by Samuel Tuzenew, SAS Global Corp. (Venice III)

The key to successful boiler testing and tuning is to be comprehensive in approach. Having and setting NOx and CO targets and parameters to achieve the desired results should be determined prior to and or during the tuning process. For this to occur it is necessary for the plant to have reliable data to diagnose existing performances and limiting factors. Tuning success depends on sound baseline data and real time results to determine cause and effect efforts made for combustion improvements. This workshop will cite the efforts made through comprehensive boiler testing and tuning.

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

Tuesday: February 11, 2014

8:30 to 9:30 am

Workshop 9: “Latest Developments in Mercury SCR Catalyst” by Christopher Bertole, Cormetech (Venice I)

The landscape for the utilization of SCR catalyst has changed over the years where development has led to breakthroughs in performance and increased design parameters. As a co-benefit of the NOx reduction capabilities of the SCR catalyst, mercury oxidation is becoming a more integral part in the SCR scope. This workshop will discuss the progress made regarding mercury oxidation as utilities face dealing with the EPA’s Mercury Air Toxics Standard, as well as state and local regulations.

Panel I: “Increasing Unit Efficiency to Meet Future GHG Regs for Existing Units” Chairman: Don Ryan, Babcock & Wilcox / Panelists: Steve Johnson, Quinapoxet Solutions; Sterling Gray, URS; Tony Licata, Licata Energy & Environmental Consulting (Terrace Ballroom)

The EPA is in the process of developing rules for decreasing the emission of GHG’s from existing power plants. It has been suggested that efficiency improvements may be one option for compliance. This panel is intended to encourage a discussion of possibilities to improve plant heat rate.

10:30 to 11:30 am

Workshop 10: “School of Hard NOx” by Walter Bembry and Greg Holscher, IBIDEN Ceram (Venice I)

Unfortunately not every SCR operates according to plan. Many owners have found that their SCR system is not ideally configured to meet the challenges of SCR operations and catalyst replacement cycles. This workshop will detail the challenges and actions taken to successfully manage a 740 MW PRB fueled, SCR equipped unit challenged with aggressive catalyst sizing, unexpected pluggage, steep deactivation, and catalyst replacement cycles that would otherwise not match the scheduled outage plan.

Panel II: “Startup and Shutdown Rules on SCR Operations” Chairman: Tony Licata, Licata Energy & Environmental Consulting / Panelists: Cindy Khalaf, Johnson Matthey; Bill Medeiros, Babcock Power; Mike O’Connor, Duke Energy; Ed Healy, Southern Company and Kyle Neidig, Hitachi (Terrace Ballroom)

EPA proposed rules for Startup, Shutdown & Maintenance present significant challenges to the operators of SCRs. This panel will discuss these rules and provide the views of the catalyst manufacturers, the SCRs technology and an operator. Audience participation is encouraged.

Workshops and Panels

Tuesday: February 11, 2014 (cont.)

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

1:00 to 2:00 pm

Workshop 11: “Selenium Mass Balance in Coal-Fired Power Plants” by *Connie Senior, ADA-ES* (Venice I)

The U.S. Environmental Protection Agency (EPA) issued new Effluent Limitation Guidelines for the electric utility industry, which include limits on the discharge of trace metals, including Se and Hg, from FGD wastewater. Selenium is also listed as a hazardous air pollutant under the Clean Air Act and air emissions of selenium are regulated for utility and industrial boilers, starting in 2015. Discharge of selenium from coal-fired boilers has become a multi-media issue, with the potential for regulation of both air and water discharges. To prepare for compliance, utilities need a better understanding of the mass balance of selenium in the coal-fired boiler. The origins of selenium in coal and its transformations in the combustion zone and air pollution control devices will be discussed in this workshop.

Workshop 12: : “Regeneration for the Long Haul – What’s Happening with Technology?” by *Mark Ehrnschwender, STEAG* (Terrace Ballroom)

This workshop will discuss the SCR reactor catalyst and what it takes to get longevity and performance out of the catalyst. It will cover: (1) catalyst original supply and requirements for new catalyst supply; (2) what techniques need to be maintained in SCR operation to protect the catalyst; and (3) what needs to be done in catalyst regeneration. The workshop will end with a discussion of what is being required and needs to be accomplished with catalyst regeneration / refurbishment.

Workshop 13: “Pre-APH Injection of Hydrated Lime – Update on Recent Testing” by *Curt Biehn, Mississippi Lime and Adam Harris, TVA* (Venice II)

Pre-APH injection of hydrated lime has grown in acceptance since evaluations began in earnest several years ago. Many utilities who need to mitigate SO_3 have implemented or are evaluating pre-APH control with hydrated lime. A major driver for this are the co-benefits utilities can achieve beyond elimination of SO_3 . This workshop will review some recent examples where utilities used Pre-APH hydrated lime DSI to help their plant meet regulations and potentially reduce costs.

Workshop 14: “High Temperature SCR Design and Field Experience with a Coal-Fired Utility Boiler” by *Larry Czarnecki and Paulo Oliveira, Alstom* (Venice III)

The formation of SO_3 emissions from SO_2 oxidation occurs during NO_x removal and the degree of oxidation is dependent on catalyst and operating condition factors. For high temperature SCR applications, SCR system design becomes challenging to meet both NO_x and SO_3 emission levels. This workshop will discuss experience with the design and operation of SCR systems at the coal-fired EDP Sines Power Plant (Portugal). These SCR units were designed for MCR operation at 800°F with 82% NO_x removal and 1% SO_2 oxidation rates. The SO_2 oxidation concerns, design strategy, and field performance results for these SCR systems will be discussed.

2:15 to 3:15 pm

Workshop 15: “Decision Modeling Improves Certainty: Catalyst Management Examples” by *Nancy Stephenson, Cormetech* (Venice I)

This workshop will provide some refreshers on the basics of finance and statistics and the application of certainty in creating measures for decision making. Discussion of applicability to current catalyst management challenges is provided.

Workshop 16: “Comparing Plate and Honeycomb Catalysts; Myths and Realities” by *Greg Holscher and Megan Winter, IBIDEN Ceram* (Terrace Ballroom)

There remain many misconceptions about SCR catalyst even though this technology has been used since the 1970’s in Japan, 1980’s in Europe and 1990’s in the U.S. This presentation will review differences, both positive and negative, concerning honeycomb and plate SCR catalyst. The technologies will also be compared concerning respective design benefits, regeneration, and laboratory performance testing methods. In addition, it will be demonstrated how these differences should be considered during catalyst management planning to accurately assess relative economics and technical value.

Workshop 17: “Dry Sorbent Injection Distribution” by *Matt Gentry, Airflow Sciences* (Venice II)

The principles behind modeling of dry sorbent injection systems using both CFD and physical scale modeling will be discussed. The two modeling techniques will be compared and sorbent distribution optimization strategies and techniques will be presented.

Workshops and Panels

Tuesday: February 11, 2014 (cont.)

2:15 to 3:15 pm cont.

Workshop 18: “Balancing LNB vs SCR Catalyst Layers” by *Bill Medeiros, Babcock Power and Scott Rutherford, Cormetech* (Venice III)

Ten to fifteen years ago decisions were being made about how to meet NO_x regulations; At the time, the primary technologies considered were, LNB, LNB + SNCR, SCR, or some combination thereof. Today, while the same basic technologies to achieve compliance are available, new demands and operational complexities must also be contemplated. We will explore the influence of the technologies, from a capital and operating cost viewpoint, to meet the basic goal of NO_x emissions compliance while addressing new considerations such as, load dispatching, SO₃ emissions, startup capability, Hg emissions, and fuel flexibility.

4:15 to 5:15 pm

Workshop 19: “Catalyst Cleaning” by *Mike Ware, SCR Solutions* (Venice I)

The workshop will discuss technological information on the In-Situation SCR Catalyst Cleaning Process, including side-by-side comparison to traditional in-situation cleaning methods and results from recent projects. Also, a method for manual entry into SCR Reactor, (in Isolated Bypass Operation), for the purpose of On-line SCR Catalyst Cleaning Process will be discussed.

Workshop 20: “Are We There Yet?” by *Darren Hanby, AEP* (Terrace Ballroom)

This presentation discusses one view of the history of SCR technology. The focus will be on the challenges the technology has overcome from infancy, through today, and into the future.

Workshop 21: : “Elimination of Ash Piling – The Kincaid Generation Story” by *Jake Shelton, CoaLogix* (Venice II)

This presentation will cover the history and issues of the catalyst pluggage experienced in the SCR reactors at the Kincaid Generation Plant. It will chronicle the steps taken over the years to minimize the pluggage with limited success to the eventual installation of the Ash Sweepers. Operational information and before/after pictures will be shown showing the results of the Ash Sweeper installation with controlling ash pluggage.

Workshop 22: : “NO_x Reductions Via Overfire Air Modifications” by *Brian King, Power and Industrial Services Corp.* (Venice III)

Increasingly stringent NO_x regulations have resulted in the design and installation of many OFA systems. Some of these systems were not optimally designed and the results of these installations are higher than necessary NO_x and CO emissions and operating boiler O₂. Through sound engineering practices and observations, modern OFA modifications can result in a combustion improvement and a reduction in NO_x and CO emissions.

6:00 to 10:00 pm

Conference Event: NASCAR Hall of Fame

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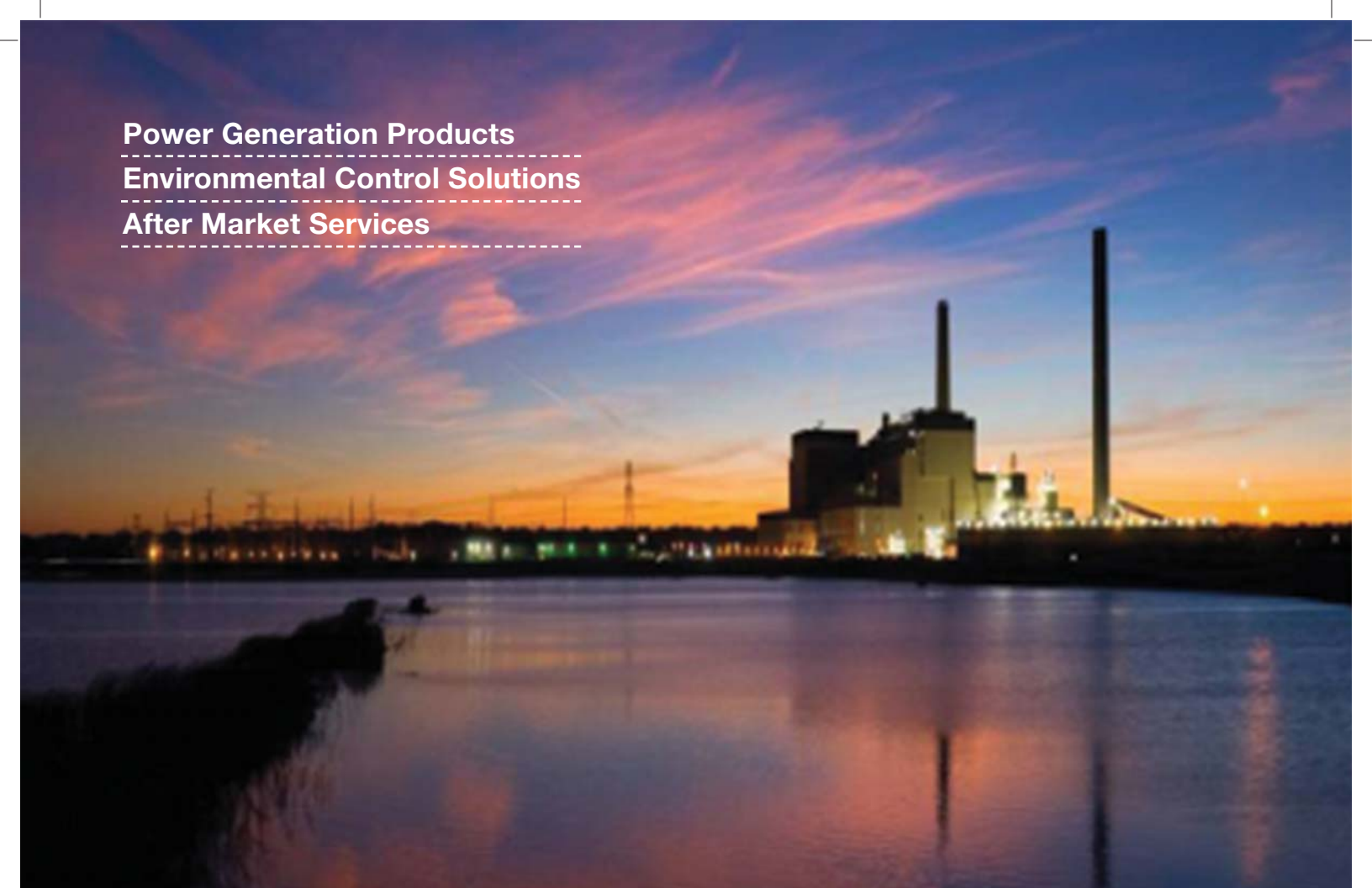


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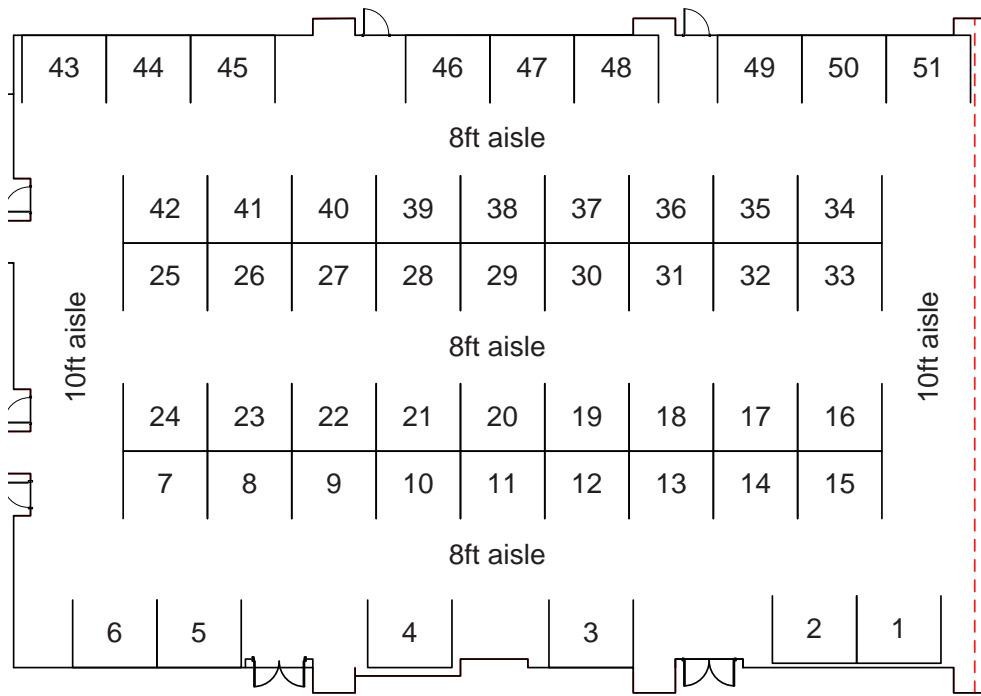
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2014 NO_x-Combustion Exhibitors



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Tuesday: 7:00am to 5:15pm

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At BASF, we understand that our customers must not only comply with environmental standards, but also must keep their operations in service, readily and cost effectively. To successfully meet this challenge, BASF offers years of experience developing innovative solutions that deliver proven results. We are committed to providing our customers with cost-effective solutions to the most complex emissions control problems. We are constantly developing new technologies to meet ever more stringent emission requirements to help our customers to be more successful.

Breen Energy Solutions.....42

104 Broadway Street
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ChetanChothani@BreenES.com
Business: 412-431-4499
www.BreenES.com



Breen Energy Solutions (BES) provides products & services associated with Sorbent Systems for Acid Gas Management. Our technology-independent approach allows us to demonstrate and optimize plant-unique solutions for control of acid gas emissions, air heater fouling and tube slagging. Products/services include: wet/dry sorbent demonstrations (SO₂, SO₃, HCl & FLGR), Instruments (SO₃, HCl, Sorbent flow) and SO₃/SCR Tuning and control. Our sorbent demonstration group is experienced in Trona and Hydrated Lime injection for SO₂, SO₃ and HCl control. Our services include monitoring and mitigating changes in superheat/reheat slag patterns associated with migration to higher sulfur coal. Breen is an industry leader in deployment of permanent Fuel Lean Gas Return (FLGR) systems for multi-pollutant control of both NO_x and SO₂. This natural gas-based technology is particularly effective in helping units meet the imminent requirements of CSAPR.

2015 NO_x-Combustion/ PCUG Conference

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2014 NO_x-Combustion Exhibitors

Cemtek Environmental Inc.1

3041 S. Orange Avenue
Santa Ana, CA 92707
Joanne Randall
CEMS Specialist
Business: 714-437-7100
joanne@cemteks.com / 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 SCR inlet & outlet NO_x 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.

CLARCOR Industrial Air | BHA.....30

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Sales Director-Industrial Filtration Americas
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Business: +1-800-821-2222 / www.clarcor.com



CLARCOR Industrial Air's team serves utility plants with integrated and flexible emissions control technology and services for fabric filtration systems. Our team evaluates your entire process and applies the right filtration solution to help improve the performance of your existing equipment and minimize O&M costs. In addition to filtration solutions for dust collection systems, our portfolio also include the BHA® Powerwave® line of acoustic cleaning systems for baghouses, ESPs, boiler tubes, heat transfer surfaces, SCRs, and material handling. The BHA Powerwave® impulse cleaning system can potentially improve flow rate, increase heat rate and reduce emissions and can replace traditional cleaning methods such as sootblowers.

Clyde Bergemann Power Group.....10

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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.

CoaLogix.....11-12

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National Sales Manager
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SCR-Tech, a CoaLogix company, is the leading provider of SCR Reactor Management services and regeneration technologies for selective catalytic reduction (SCR) systems used by coal-fired power plants. SCR Tech offers a wide variety of services including AIG tuning, acoustic cleaners (sonic horns), DeNO_x & SO₂/SO₃ catalyst testing services, Ash Sweepers for solving ash piling problems, reactor inspection services, and catalyst module supply. CoaLogix has regenerated more cubic meters (m³) of catalyst than anyone in the world and can swiftly supply honeycomb, plate, and corrugated from its inventory of over 5,000 modules. CoaLogix is owned by Energy Capital Partners, a \$7 billion dollar private equity firm, focused on the power generating sector.

Combustion Components Associates.....40

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CCA is a global provider of fuel conversion, in-furnace and SCR technologies for reducing NO_x, particulate matter, unburned carbon, and CO emissions. CCA's technologies are applied to power plants, paper mills, refineries and industrial facilities. More information is available at www.cca-inc.net.

Control Analytics, Inc.....46

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Control Analytics is a representative, distributor, and integrator of on-line process monitors, environmental analyzers and systems for industrial use. Specialties include Continuous Emissions Monitoring Systems, process monitoring, safety and industrial hygiene, pure water monitoring solutions, and Ambient Air Monitoring.

CORMETECH.....32-33

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Cormetech manufactures and tests engineered catalyst used to reduce emissions from coal and gas-fired power generation, chemical process industries, petroleum refineries, and diesel engines. We are the industry's leading technology solution provider, developing and applying highly reliable and cost effective Selective Catalytic Reduction (SCR) performance with unparalleled customer service. Every day, all over the world, we deliver cleaner air through innovation.

Environmental Energy Services.....47

5 Turnberry Lane
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Business: 203-270-0337
www.eescorp.com



Environmental Energy Services, Inc. offers slag and emissions control programs to maximize fuel flexibility and allow compliance with upcoming air and wastewater regulations. From enhancing coal combustion and remediating mercury and acid gases to continuous SO₃ monitoring, EES has a suite of technologies to assist your plant.

ENERACTIVE Solutions.....44

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ENERACTIVE Solutions is an independent, full service energy consulting, engineering, and project development company specializing in the analysis, design, development, and installation of energy efficiency and system optimization projects. ENERACTIVE Solutions, Power Plant Solutions Division provides SCR system optimization services including catalyst management, AIG tuning, field testing, flow modeling, inspection and consulting services.

Enertechnix.....27

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Enertech's line of high-performance infrared imaging cameras and gas temperature measurement tools enables performance engineers and operations managers to maximize combustion efficiency and minimize unplanned boiler and furnace outages, thereby improving heat rate and reducing carbon footprints.

Fossil Energy Research Corporation.....14
 23342-C
 Laguna Hills, CA 92653
 Richard Thompson, President
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 Business: 949-859-4466 / www.ferco.com



FERCo is an engineering services and R&D company specializing in combustion and emission control. FERCo has over 30 years of experience in combustion, SCR and SNCR optimization in the utility industry. SCR optimization tools developed for coal-fired systems are now being applied to gas turbine SCR systems. FERCo also specializes in the development of advanced measurement systems for the utility industry, such as CatalysTrak®, a system to measure and monitor catalyst activity in situ (e.g., without requiring an outage to remove catalyst samples).

Foster Wheeler North America.....17
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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.

Fuel Tech, Inc.....28
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 VP Business Development & Marketing
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Fuel Tech, Inc. provides technologies for multi-pollutant emission control and advanced combustion technologies. Products include: low NO_x burners, over-fire air systems, NO_xOUT® and HERT™ SNCR systems, ASCR™ Advanced SCR, NO_xOUT CAS-CADE®, ULTRA™ process to generate ammonia for SCR, Rich Reagent Injection (RRI), sorbent injection systems, and TIFI® Targeted in Furnace Injection programs to improve boiler performance while reducing slagging and emissions.

Haldor Topsoe, Inc9
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 Nate White, Director,
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 Business: 803-835-0571 / www.topsoe.com



Haldor Topsoe is the market leader in the development and supply of heterogeneous air pollution control catalyst and technology with over 1,000 stationary SCR references ranging from large boilers firing Lignite, PRB and high arsenic coals to bio-mass and natural gas sources operating at 300°F. Topsoe's diverse gas turbine experience covers IGCC and combined cycle sources to simple cycle gas turbine applications operating up to 1,100°F. Topsoe has proven, over our 70 plus years, to be the supplier of choice when it comes to advanced products for both industrial and environmental catalytic systems.

High Temperature Technologies.....41
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 Patrick Fitzgerald,
 Air In-Leakage Reduction Manager / patrick@isomembrane.com
 Business: 704-375-2111 / www.isomembrane.com



High Temperature Technologies (HTT) introduced the ISOMEMBRANE® sealing system to North America in 1993. After 20 years, and over 1000 installations around the world, ISOMEMBRANE® has a proven track-record in solving air in-leakage issues - from the boiler to the stack: most notably in areas that have direct impact on emissions, combustion performance & station safety; expansion joints, in boiler dead air spaces, at penetrations, soot blower ports, etc. Given the MATS rules, eliminating air in-leakage is critical as it has a significant impact on APC equipment performance and particulate matter collection. ISOMEMBRANE® is a maintenance-free alternative to refractory, weld repairs and joint replacement. It's a multi-layer system of several specially designed proprietary components that work in unison to optimize sealing by continuous flexibility, impermeability and robustness, making it effective and long-lasting. Additionally, the ISOMEMBRANE® system is fabricated onsite, making deployment and installation very fast. No pre-fabrication or engineering is necessary. (Many expansion joints can be renewed while the unit is online.)

Hitachi Power Systems America, Ltd.....22-23
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 Kyle Neidig
 Product Mgr., SCR Systems & Catalyst
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 Business: 908-605-4046
 www.hitachipowersystems.us



Hitachi, original co-developer of DeNO_x catalyst, has supplied NO_x removal catalyst for over 30 years to over 800 plants including over 350 SCR systems worldwide and the only catalyst manufacturer who offers SCR Systems for coal-fired units in the U.S. Our experience and knowledge led to the development of arsenic and phosphorus resistant blends, low SO₂ conversion catalyst and now longer lasting catalyst (CM) which can exceed the longevity of present day catalyst capabilities. Hitachi's Mercury Oxidation Catalyst (TRAC® "Triple Action"), for bituminous and PRB fuels reduces NO_x, maximizes mercury oxidation, and minimizes the conversion of SO₂ to SO₃. Because of our experience and knowledge, we can test and inspect catalyst and optimize AIG.

IBIDEN Ceram Environmental, Inc.....35
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 John Cochran, President
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CERAM manufacturers honeycomb and plate type SCR catalysts optimized for high NO_x removal, low SO₂ to SO₃ conversion, high mercury oxidation, and repeated regenerations. Since 1985 our experience base comprises more than 1000 DeNO_x catalyst applications at facilities burning coal, biomass, and nearly every other imaginable fuel type. CERAM also provides comprehensive services including AIG tuning, reactor inspection, catalyst testing, SCR operations evaluation, and catalyst management planning. Our catalyst management planning tools are the most advanced in the industry providing accurate and timely prediction of catalyst additions as well as comprehensive NPV evaluation of regenerated and new catalyst. To date, we have assisted our clients with the regeneration or rejuvenation of 40 catalyst layers.

Integrated Global Services.....51
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NoNO_x Components offers the leading high temperature erosion resistant LPA/Popcorn Ash filtration system for protection against catalyst plugging. NoNO_x supports utilities and OEM's in the design and manufacture of components for effective filtration over long service intervals, while minimizing system pressure drop. The NoNO_x patent-pending screens have been successfully installed in over 50 SCR's across the US.

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Johnson Matthey Stationary Emission Control LLC.....13

1121 Alderman Drive, Suite 204
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Cindy Khalaf, President
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Business: 678-341-7520 / www.jmcatlysts.com



Johnson Matthey
Catalysts

Johnson Matthey manufactures plate and honeycomb SCR catalyst and CO catalyst for many applications including coal fired power plants and gas turbines. We have extensive world-wide experience including over 50 coal-fired utility boiler installations in the U.S. alone. Johnson Matthey has installed over 50,000 m³ of plate-type SCR catalyst in U.S. coal-fired applications. Plate catalyst is recognized for its resistance to fly ash plugging, low SO₂/SO₃ conversion, low pressure loss and mechanical robustness. Johnson Matthey is a 200-year old specialty chemicals company focused on its core skills in catalysts, precious metals, fine chemicals and process technologies. Our \$15 billion company has been providing catalytic solutions for air quality problems for more than 30 years.

Kiewit/TIC.....8

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Lenexa, KS 66219
Michael Ross,
President, Kiewit Power Engineers
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Kiewit

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. Our experience and capabilities span the spectrum of today's complex power market and include: Gas, Coal, Air Quality Control Services (AQCS), Power Delivery, Renewable and Nuclear. With the acquisition of TIC – The Industrial Company (TIC) in 2008, Kiewit has advanced its cutting edge capabilities to better serve the power industry. As one of the leading and most respected industrial contractors, TIC is a perfect addition to expand our reach and broaden our scope.

Kirk Key Interlock Co.....31

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William Trautmann, Vice President of Sales & Marketing
wtrautmann@kirkkey.com
Business: 330-833-8223 www.kirkkey.com



Kirk Key Interlock Company has proven to be the leading U.S. manufacturer of trapped key interlocks since 1932. The Heavy Duty and Medium Duty Series are the ideal choice for ESP and Baghouse applications. Both interlock series use a robust style key with a dowel pin design that makes Kirk Key the most reliable Interlocks available. Please contact us for a complete on-site review of your existing interlock system.

Lechler Inc.....39

445 Kautz Road
St. Charles, IL 60174-2929
Mughis Naqvi, Sales Manager
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Business: 800-777-2926 ext. 6817 / 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 (CDS 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 experience enables us to provide you with the best solutions for your chemical/water injection requirements. Ask us about our successful SNCR, Direct Injection SCR installations. Learn about our new patented nozzle and online cleaning system (LOC) which are successfully in operation for Spray Dry Evaporation (SDE) at a Zero Liquid discharge (ZLD) plant.

Lhoist North America.....16

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Fort Worth, Texas 76107
Howard B. Fitzgerald, New Business Development Manager, FGT Solutions
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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 Sorbacal® Optimized Hydrated Lime products.

Mississippi Lime.....37

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Business: 314.543.6309
www.mississippilime.com



Mississippi Lime is a leading supplier of hydrated lime for Dry Sorbent Injection applications. Through the years, our company has supported the DSI industry through our high quality products, sponsorship of test programs, technical service, and research and development. Mississippi Lime has a new product, High Reactivity Hydrated Lime, that offers utilities improved utilization, lower emissions, and the potential for operational improvements. We also offer high purity quicklime for Spray Dry Absorbers and Circulating Dry Scrubbers. Mississippi Lime production facilities are located in Ste. Genevieve MO, Vicksburg MS, Verona KY, Weirton WV, Chester SC, Huron OH, and Mobile AL. We also have terminals located throughout North America. Please stop by our booth and to hear how Mississippi Lime's technical support and supply chain capabilities can help you achieve cost-effective control of acid gas emissions.

Nalco Air Protection Technologies.....38

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Nalco Air Protection Technologies (APT) and the Nalco Research & Development team provide proven and patented technologies for complete MATS compliance. The Nalco suite of products includes MerControl 7895, a mercury oxidant, MerControl 8034 for mercury re-emission control and MerControl 6012 for mercury control in dry scrubbers. APT's focus is to minimize capital intensive solutions while maximizing mercury capture in air and water for coal fired EGU's.

Nol-Tec Systems, Inc.....2

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Nol-Tec Systems offers Sorb-N-Ject® Technology, a proven dry bulk sorbent injection system to mitigate Hg, HCl, SO₂, SO₃, and HF 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 balances sound technical expertise with innovative thinking, partnering with our forward-thinking customers to exceed their expectations and deliver success.

Paragon Airheater.....34

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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.

2014 NO_x-Combustion Exhibitors

Power & Industrial Services.....45

95 Washington Street
Donora, PA, 15033
Larry Shekell
lshekell@piburners.com
Business: 800-676-7116 / www.piburners.com



Fire Up with Turnkey Combustion Optimization Systems from Power & Industrial Services. Proprietary Combustion Optimization Systems with LowNO_x Burners/Over Fire Air Systems/Comprehensive Testing/Tuning for the industry's only One-stop, Full-Service solution

RE Consulting.....19

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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 Corp.....21

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SAS patented pulverizer/burner technology is the first step in a boiler optimization program. Balance fuel pipes, reduce NO_x, lower LOI, reduce slagging, and lower SCR costs. 100% guaranteed.

Sealeze, a unit of Jason Inc.....24

8000 Whitepine Road
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XtraSeal HT™ is a patent-pending, adaptive brush sealing system specifically engineered for Rotary Air Preheaters and the constant variations in gap sizes inherent in their operation that strip seals can't accommodate. Air Preheaters, properly sealed with XtraSeal HT, provide measurable reductions in fuel consumption, fan power usage and CO₂ emissions, ensuring consistent conditions for optimal air pollution control equipment function.

SOLVAir Solutions.....4

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SOLVAir Solutions is the long-term, reliable supplier of trona and sodium bicarbonate to the air pollution control market. Its expert knowledge of Dry Sorbent Injection with sodium sorbents has helped power plants and industrial boilers make sense of EPA policies and achieve compliance, both effectively and cost-effectively, with ongoing regulations such as the MATS/MACT standards. Access www.solvair.us to view our products and services, and the wide variety of air pollution control documents in our Library.

Southern Research Institute.....6

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Southern Research Institute provides standard testing of de-NO_x SCR catalysts in both bench-scale and micro-reactor test facilities, air-pollution-control technology evaluation, and testing and laboratory services for utility, industry, and government clients. Our areas of expertise include: vapor-phase mercury monitoring; carbon-trap mercury measurements; SCR catalyst activity and reactivity testing; XRF, XRD, ICP-MS, and morphological analyses; coal combustion research; and, flue gas analysis for SO₂, Hg, halides, HCl, HF, and other gas species. We also provide analysis of FGD scrubber liquids and slurries, and water treatment technologies.

STEAG Energy Services25-26

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Dorothee Seidel, Marketing Manager
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STEAG Energy Services provides a full scope of environmental engineering and consulting service to the North American energy industry including 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, complete SCR on-site installation / removal services, STEAG's patented mercury capture / sequester system and SCR and FGD Training / O&M services.

URS Corporation.....49-50

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Vice President Power Sector
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Business: 919.461.1454
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A global leader in engineering, design, construction, and program management, URS Corporation provides a complete life cycle of services to clients in the power industry - emissions control (NO_x, SO₂, SO₃, mercury/toxics, PM), generation (fossil, nuclear, hydro, renewable, combined cycle), coal combustion residuals, and transmission/distribution.

Wahlco, Inc.....7

2722 South Fairview Street.
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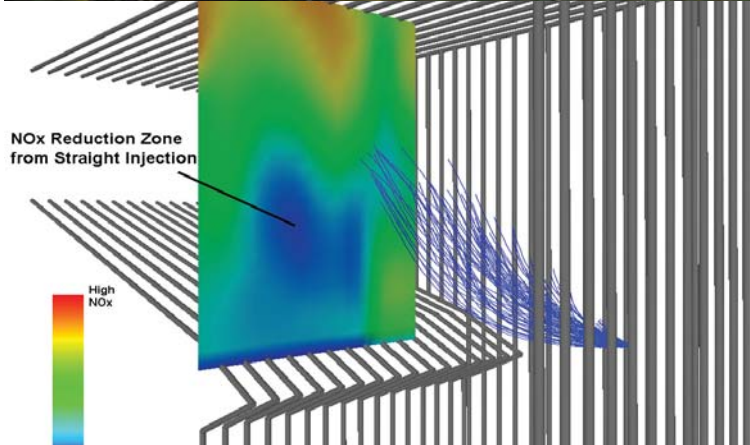
Wahlco serves the power, refinery and chemical industries through the manufacture and supply of SO₃ and NH₃ flue gas conditioning (FGC) systems, small NO_x reduction (SCR and SNCR) systems, ammonia systems for SCR plus patented urea-to-ammonia "U2A®" systems for DeNox and industrial applications.

Yara North America NOxCare.....36

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Yara North America is one of the largest producers in the world of Ammonia and Urea, with one third of the Ammonia traded in the world being supplied by Yara. We safely trade and ship Ammonia and Urea around the world to our SCR and SNCR customers. With more than 180 installations worldwide by Yara Miljö experts, we are also a world leader in SNCR systems at cement, waste incinerators and waste to energy plants.



STEAG Energy Services LLC

Visit us at booth 25 & 26.

SCR Catalyst Cleaning, Regeneration & Testing Services | SNCR & SCR System Design/Re-Design | LPA Screens | Ammonia System Design/Re-Design | FGD Services including Mercury and Selenium Control

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