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REINHOLD ENVIRONMENTAL
NOx ROUND TABLE & EXPO

February 7-8, 2011
Wynfrey Hotel
Birmingham, AL

Conference Sponsors

CoaLogix
Cormetech
Fuel Tech
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PCUG

10th Annual

NOx - Combustion Round Table & Expo

NOx, Combustion, Biomass, SO_3, Hg, Greenhouse Gases

Show Guide 2011

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2011 NOx-Combustion PCUG Conference

The 10th Annual NOx-Combustion/PCUG Conference is presented by Reinhold Environmental (www.reinholdenvironmental.com)

Hosted by the Southern Company

Special thanks to the Conference Sponsors and Utility Host

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2011 NOx-Combustion Round Table

February 7, 2011 - Monday - NOx-Combustion Round Table

Registration - Continental Breakfast & Breaks in expo from 7:00 to 5:30 (Wynfrey Ballroom)

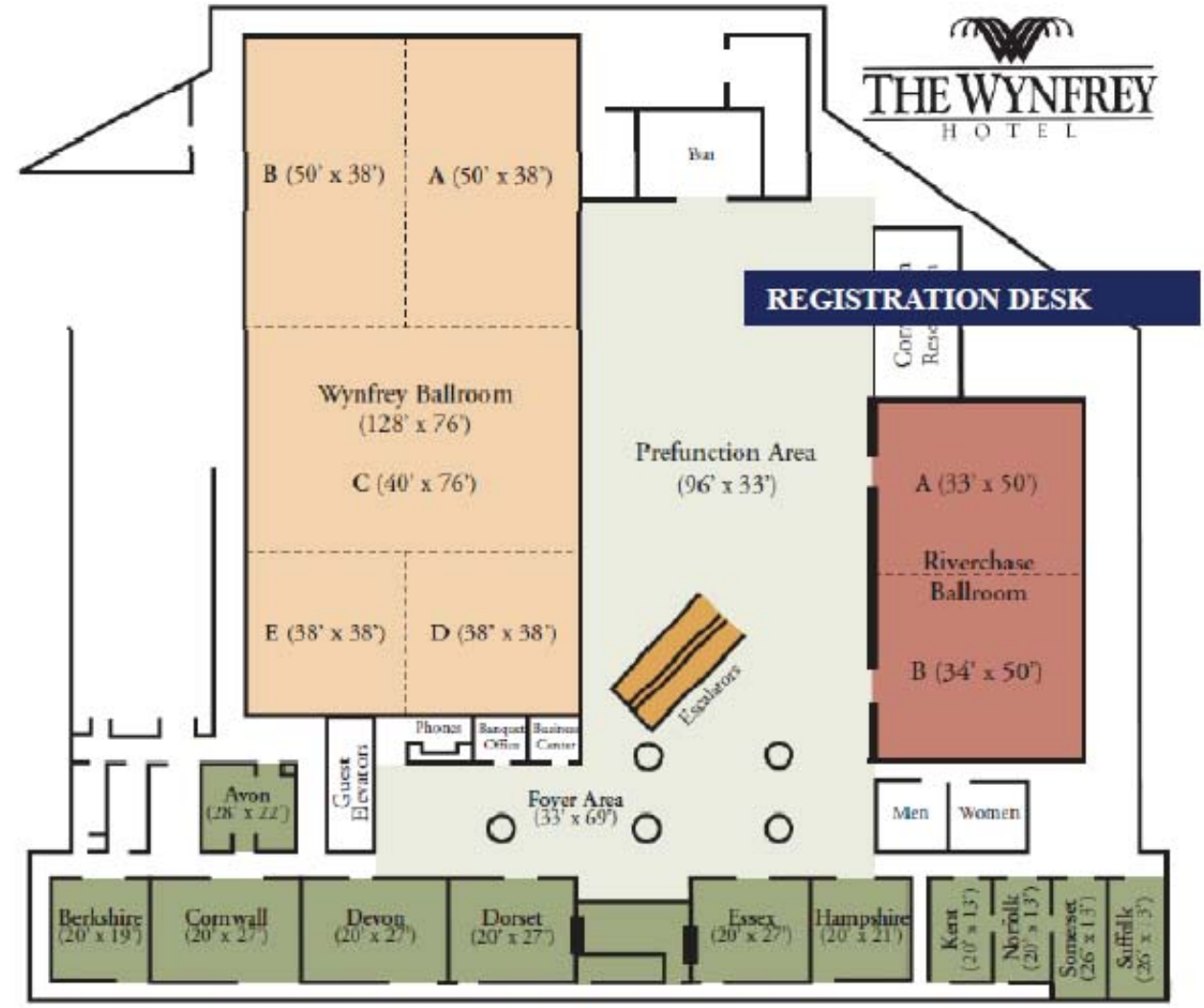
O&M Training Classes 8:30-12:00

8:00-9:30	**Training Class 1 (Riverchase Ballroom)** **SCR Catalyst Management** *by Jeremy Freeman, Cormetech*	**Training Class 2 (Wyndsor I Room)** **SNCR Operations** *by Kevin Dougherty, Fuel Tech*	**Training Class 3 (Wyndsor II Room)** **An Overview of Biomass Technology Options for Power Generation** *by Robert Giglio and Brad Moulton, Foster Wheeler*	**Training Class 4 (Yorkshire Room)** **Boiler Optimization to Reduce Backend Emissions** *by Craig Penterson, Babcock Power*
9:30-10:15	Break in Exhibition Hall (Wynfrey Ballroom)			
10:15-11:45	**Training Class 5 (Riverchase Ballroom)** **SCR Catalyst Regeneration** *by Mike Mattes, CoaLogix*	**Training Class 6 (Wyndsor I Room)** **Upcoming Utility MACT Discussion** *by Brian Higgins, Nalco Mobetec*	**Training Class 7 (Wyndsor II Room)** **SCR DeNOx Catalyst Considerations When Using Biomass in Power Generation** *by Hans Jensen-Holm, Haldor Topsoe Europe*	**Training Class 8 (Yorkshire Room)** **Combustion (T-fired)** *by Doug Hart, Alstom Power*
11:45-1:00	Lunch in Exhibition Hall (Wynfrey Ballroom)			
1:00 - 2:30	**General Session (Riverchase Ballroom)** **Welcome/Presentation of Round Table Award** *by Susan Reinhold* **…..Keynote Speech** *by Chris Hobson, Chief Environmental Officer and Senior Vice President, Southern Company*			
2:45-3:45	**Workshop 1 (Riverchase Ballroom)** **Comparison on Low Cost Capital Options for NOx Control** *by Gary Andes, WorleyParsons*	**Workshop 2 (Wyndsor I Room)** **An Integrated Approach to SO_3 Mitigation and Multi Pollution Controls** *by Mark Thomas, Consultant*	**Workshop 3 (Wyndsor II Room)** **Development of Carbon Capture Technologies for Power Generation** *by Sean Black, Doosan*	**Workshop 4 (Yorkshire Room)** **Integrating NOx Control Combustion and Equipment Optimization** *by Pat Jennings, Alstom Power*
3:45-4:30	Break in Exhibition Hall (Wynfrey Ballroom)			
4:30-5:30	**SCR Panel I (Riverchase Ballroom)** **SCR Catalyst Needs (including operational needs, catalyst management needs in response to year round operations, potential requirements for future guarantees, etc.)** *Chairman: Jim Benes, AEP and Michael O'Connor, Duke Energy / Panelists: Chao Lin, AEP; George Valentine, Dominion; David Collins, Southern Co.; Tony Engelmeyer, Orlando Utilities*		**Workshop 5 (Wyndsor II Room)** **Impacts of Oxy-combustion Retrofit for Coal-fired Boilers** *by Alan Paschadag, Siemens and Bradley Adams , REI*	**Workshop 6 (Wyndsor I Room)** **Measurement and Modeling of SO_3 Formation in PC Boilers** *by Joe McCain, SRI*
5:30-6:30	Reception			

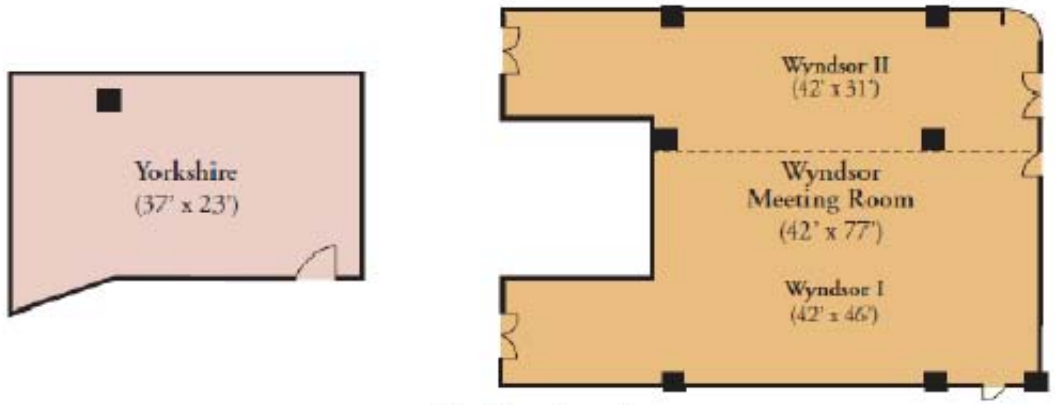
February 8, 2011 - Tuesday - NOx-Combustion Round Table

7:00 - 8:30	Registration & Continential Breakfast (Wynfrey Ballroom)			
8:30 - 9:30	**Workshop 7 (Riverchase Ballroom A)** **Regenerative SCR and Multi-Pollutant Catalytic Reduction** *by John Bowman, Babcock Power*	**Workshop 8 (Wyndsor I Room)** **In Situ NOx Analysis for SCR Control** *by Harold Henry, Horiba Instruments*	**Workshop 9 (Wyndsor II Room)** **Unit-Wide Optimization Systems: A CCPI Case Study** *by Ray Johnson, NeuCo*	**Workshop 10 (Riverchase Ballroom B)** **Methods for Mitigating SO_3** *by David Broske, EPRI*
9:30 - 10:30	Break in Exhibition Hall (Wynfrey Ballroom)			
10:30 - 11:30	**Workshop 11 (Riverchase Ballroom A)** **Low Load Operations and the Effects on SCR Catalyst Performance** *by Stephen Guglielmo, Hitachi*	**Workshop 12 (Wyndsor I Room)** **Fast Response NOx Monitoring for Better SCR Optimization During Transient Periods** *by Ken Greaves, CEMTEK; Darren Hanby, AEP*	**Workshop 13 (Wyndsor II Room)** **Overview of AEP Commercial Scale Carbon Capture & Storage Project** *by Matt Usher, AEP*	**Workshop 14 (Riverchase Ballroom B)** **Dynamic SO_3 Measurement and Mitigation** *by Cal Lockert, Breen Energy*
11:30 - 1:00	Lunch in Exhibition Hall (Wynfrey Ballroom)			
1:00-2:00	**Workshop 15 (Riverchase Ballroom A)** **Re-calcination for Regenerated Catalyst** *by Mark Ehrnschwender, Evonik Energy Services*	**Workshop 16 (Wyndsor I Room)** **Advanced SCR Catalyst – Multi-Pollutant Control Options** *by Nancy Stephenson, Cormetech*	**Workshop 17 (Wyndsor II Room)** **Urea to Ammonia Systems - Technology and Feed Stock Issues** *by Bill Hankins, Wahlco*	**Workshop 18 (Riverchase Ballroom B)** **Optimizing Plant Operations for Mercury Control** *by Scott Hinton, W.S. Hinton & Associates*
2:15-3:15	**Workshop 19 (Riverchase Ballroom A)** **Dealing with Flyash Fouling in SCR DeNOx - in Theory and Practice** *by Florian Huber and Nate White, Haldor Topsoe*	**Workshop 20 (Wyndsor I Room)** **SCR Inspection: The Good and the Bad** *Ron Richard, RE Consulting*	**Workshop 21 (Wyndsor II Room)** **Gas-Gas Mixing Fundamentals for SCR** *by Kevin Rogers, B&W*	**Workshop 22 (Riverchase Ballroom B)** **Acoustic Cleaning for SCRs - Operation and Maintenance** *by Dave Chapin and Vincent Barreto, GE Energy*
3:15-4:15	Break in Exhibition Hall (Wynfrey Ballroom) …drawing Treasure Hunt Winners			
4:15 - 5:15		**Workshop 23 (Wyndsor I Room)** **Development of Combustion Additives for Deactivation Mitigation of SCR Catalysts** *by Mandar Gadgil, B&W*	**Workshop 24 (Wyndsor II Room)** **Commercial Operation of the ULTRA™ Urea Conversion SCR Reagent Feed System** *by Dale Pfaff, Fuel Tech*	**Workshop 25 (Riverchase Ballroom B)** **Mercury Oxidation across SCR Catalyst** *by Brian Adair, CoaLogix*
6:00 - 10:00	**NOx Fest in the Riverchase Ballroom, Wynfrey Hotel .....free to all attendees and their families.…** **5:30 - Drinks; 6:00 - Dinner for all, followed by a comedy performance by Karen Mills ….. ending the night with the Southern Company Band - Power Play in the Wynfrey Ballroom**			

Wynfrey Hotel Floor Plan



Second Level



Lobby Level

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Workshops and Panels

Monday, February 7, 2011

8:00 to 9:30 am

Training Class 1: "SCR Catalyst Management" *by Jeremy Freeman, Cormetech (*Riverchase Ballroom)
As the currently installed base of SCR catalyst ages, emphasis must be placed on effectively managing the system investment for the lowest lifecycle cost. This training class will focus primarily on SCR system operation and SCR catalyst management. The training class will examine catalyst management techniques, operational environments, and overall system performance monitoring in order to enhance catalyst operation.

Training Class 2: "SNCR Operations" *by Kevin Dougherty, Fuel Tech* (Wyndsor I Room)
In this training class SNCR technology and operations will be discussed, including NOxOUT and HERT injection strategies, system hardware, performance and operating costs. Operational issues including the impact of biomass, CO levels, reagent specifications and sourcing will be reviewed, along with the impact on system performance when combined with other technologies such as low NOx burners, OFA, and SCR, in light of compliance strategies for the pending regulations and future plant operations.

Training Class 3: "An Overview of Biomass Technology Options for Power Generation " *by Robert Giglio, Foster Wheeler Global Sales & Marketing and Brad Moulton, Foster Wheeler* (Wyndsor II Room)
This training class will encompass an overview of biomass technology options for both new and retrofit applications covering both state of the art technologies as well as conventional well proven technologies. Industry experience both in the U.S. and Europe will be reviewed. The technology discussion will include biomass conversions to existing plants as well as options for new fully dedicated biomass plants.

Training Class 4: "Boiler (wall-fired) Optimization to Reduce Backend Emissions" *by Craig Penterson, Babcock Power* (Yorkshire Room)
This training class will focus on how to maintain low emissions at the boiler outlet of wall fired boilers. Topics to be presented include key parameters affecting low NOx combustion and the affects of mill, burner and boiler systems on emissions. The class will finish with a discussion of how to re-tune low NOx burners.

10:15 to 11:45 am

Training Class 5: "SCR Catalyst Regeneration" *by Mike Mattes, CoaLogix* (Riverchase Ballroom)
This training class covers catalyst processing terms and the anatomy of SCR catalyst. How does it work? What causes it to deactivate? How does regeneration work? What can one expect with regenerated catalyst (guarantees, performance, etc.)? Also covered will be operating experience and the future market for regenerated catalyst and, factors to consider when buying a replacement or additional catalyst layer.

Training Class 6: "Upcoming Utility MACT Discussion" *by Brian Higgins, Nalco Mobetec* (Wyndsor I Room)
This training class will start with the Clean Air Act's Section 112 requirements for NESHAPS (Air Toxics). Since the Utility MACT rule will not be released until March 2011, we will review the ICR process that was recently implemented by the EPA for Portland Cement and Industrial Boilers. Considering the same process for Utility MACT combined with recent EPA announcements, we will discuss the likely pollutants, emission levels, and compliance issues.

Training Class 7: "SCR DeNOx Catalyst Considerations When Using Biomass in Power Generation" *by Hans Jensen-Holm, Haldor Topsoe Europe* (Wyndsor II Room)
The use of biomass fuel represents a challenge to the designers of SCR units since the useful life of the catalyst can be significantly reduced. The mechanisms responsible for the catalyst deactivation will be discussed. Cases of SCR's implemented on boilers firing 100% biomass as well as units co-combusting biomass in Europe and the USA will be presented. These experiences demonstrate that choosing the right plant configuration and proper catalyst formulation can limit the negative effects.

Training Class 8: "Combustion (T-fired)" *by Doug Hart, Alstom Power* (Yorkshire Room)
This training class will focus on the key parameters that affect emissions for tangentially fired boilers and methods to mitigate them. Topics will include a brief overview of fuel fundamentals, understanding tangential firing systems, and tuning of the combustion system and the potential ramifications on boiler performance.

Workshops and Panels

Monday, February 7, 2011

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

1:00 to 2:30 pm

Welcome: "**Presentation of Round Table Lifetime Awards"** *by Susan Reinhold, Reinhold Environmental* (Riverchase Ballroom)
The Round Table Awards will be given to James Benes, AEP and Scott Hinton, WS Hinton & Assoc.

Keynote Speech: "Environmental Review and Update: Regulatory and Technical Implications" *by Chris Hobson, Chief Environmental Officer and Senior Vice President, Southern Company* (Riverchase Ballroom)
This keynote address will provide a review and update of environmental issues currently facing the electric utility industry. The implications of both regulatory and legislative issues will be assessed from a strategic perspective with an emphasis on technical, compliance and implementation considerations.

2:45 to 3:45 pm

Workshop 1: "Comparison on Low Cost Capital Options for NOx Control" *by Gary Andes, WorleyParsons* (Riverchase Ballroom)
This workshop will discuss and evaluate in-furnace, NOx Control retrofit options for wall-fired and tangentially-fired boilers burning bituminous, sub-bituminous, and lignite fuels. Technical and cost comparisons will be provided along with a discussion of major considerations and decision points for technology analysis.

Workshop 2: "An Integrated Approach to SO_3 Mitigation and Multi-Pollution Controls" *by Mark Thomas, Consultant* (Wyndsor I Room)
This workshop will show why an integrated approach for evaluating environmental compliance options is critical to successfully meet existing and emerging regulations. Complex and creative analysis is required but can yield unexpected benefits. Examples of integrated strategies for SO_3 Mitigation and Multi Pollutant Controls will be presented with adequate time for open discussion.

Workshop 3: "Development of Carbon Capture Technologies for Power Generation" *by Sean Black, Doosan* (Wyndsor II Room)
This workshop will cover the three main topics:

- Carbon Capture Technologies in Development
- Utilization/Storage of CO_2
- Key Challenges Associated with Development and Commercialization

The focus will be on providing an overview of the different technologies, how they work, how large they have been built to date, challenges in scale-up and application to power generation facilities, and technical and commercial challenges in developing large demonstration projects and commercializing the technology.

Workshop 4: "Integrating NOx Control Combustion and Equipment Optimization" *by Pat Jennings, Alstom Power* (Yorkshire Room)
This workshop will include a discussion of the various techniques to control inlet flue gas temperature to the SCR across the load range and an evaluation of the NOx removed by combustion vs. the SCR.

4:30 to 5:30 pm

Workshop 5: "Impacts of Oxy-combustion Retrofit for Coal-fired Boilers" *by Alan Paschadag, Siemens & Bradley Adams, REI* (Wyndsor II Room)
Results of pilot scale testing from a DOE oxy-combustion program will be presented. Data collected consisted of combustion gas temperatures, radiation heat flux, species concentrations, surface corrosion rates, as well as flame videos. Upon completion of testing and data collection, correlations were constructed between operating parameters and resulting effects on combustion performance and potentially boiler performance. Utilization of the flame videos identified limits of operating parameters that caused near unstable combustion. A brief description of how data and correlations from this phase of the project will be utilized in the next phase (full scale CFD combustion boiler modeling) will be provided.

Workshops and Panels

Monday, February 7, 2011

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

Workshop 6: "Measurement and Modeling of SO_3 Formation in PC Boilers" *by Joe McCain, SRI* (Riverchase Ballroom B)
SO_3 concentrations in the flue gas leaving a PC boiler are controlled primarily by two factors: (1) catalytic oxidation of SO_2 through the convective sections of the boiler by iron in the ash and (2) uptake of SO_3 by lithium, sodium, calcium and magnesium oxides in the ash. This workshop will describe a model that is being developed for predicting the resulting SO_3 concentration and supporting data that have been obtained by measurements that have been made on full-scale power boilers.

Panel I: "SCR Catalyst Needs (including operational needs, catalyst management needs in response to year round operations, potential requirements for future guarantees, etc.)" *Chairman: James Benes, AEP and Michael O'Connor, Duke Energy / Panelists: Chao Lin, AEP; George Valentine, Dominion; David Collins, Southern Company; and Tony Engelmeyer, Orlando Utilities* (Riverchase Ballroom)

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

Workshops and Panels

Tuesday, February 8, 2011

8:30 to 9:30 am

Workshop 7: "Regenerative SCR (RSCR) and Multi-Pollutant Catalytic Reduction (MPCR)" *by John Bowman, Babcock Power* (Riverchase Ballroom A)
This workshop will present an overview of the RSCR technology, including; its application as a tail-end NOx control, method of operation, installations, and achievable performance for biomass, WTE, and industrial applications. Related to the RSCR is the MPCR, also a tail-end NOx control will be reviewed briefly. In addition to NOx control both systems can be equipped with oxidation catalyst for CO and VOC control.

Workshop 8: "In Situ NOx Analysis for SCR Control" *by Harold Henry, Horiba Instruments* (Wyndsor I Room)
This workshop will discuss an in situ probe for measuring NOx, based upon ZrO_2 technology. This analyzer is ideal for SCR control applications, measuring NOx before and after the catalyst. An in situ device provides two important advantages over the current extractive type: 1) Timely NOx measurements insures timely feedback for NH_3 additions. 2) Lower installation and maintenance costs.

Workshop 9: "Unit-Wide Optimization Systems: A CCPI Case Study" *by Ray Johnson, NeuCo* (Wyndsor II Room)
NeuCo's Clean Coal Power Initiative (CCPI) phase 2 project, hosted by NRG's Limestone Generating Station, officially concluded with the recent publishing of NeuCo's final technical report by the U.S. Department of Energy (DOE). The project's intent was to demonstrate unit-wide optimization systems on a large coal fired steam electric power plant in order to minimize emissions while maximizing efficiency and maintaining saleable byproducts. Benefits that will be discussed include: NOx, CO and Hg emission reductions, efficiency and heat rate improvements, an increase in operating flexibility and improvements in unit reliability through anomaly detection and diagnostics systems.

Workshop 10: "Methods for Mitigating SO_3" *by David Broske, EPRI* (Riverchase Ballroom B)
Combustion in coal-fired boilers will inherently produce SO_3 in quantities of approximately 0.5 to 1.5% of the SO_2 in the flue gas. Even 5 ppm of SO_3 can cause a visible plume under some operating conditions. The application of SCR for NOx control can further increase SO_2 conversion by 0.5 to 2% on the SCR inlet SO_2. This workshop will review the two most broadly applied methods to control SO_3 formation. They are low SO_2 oxidation catalyst and alkali-based reagent injection.

10:30 to 11:30 am

Workshop 11: "Low Load Operations and the Effects on SCR Catalyst Performance" *by Stephen Guglielmo, Hitachi* (Riverchase Ballroom A)
There are many factors that result in the need for utilities to operate SCRs at lower temperatures. These include, but are not limited to increased regulations, year round operation requirements, more load cycling due to lower load demand, etc. This presentation discusses the effects on the SCR catalyst and operating concerns due to these lower temperatures for short and long term durations.

Workshops and Panels

Tuesday, February 8, 2011

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

Workshop 12: "Fast Response NOx Monitoring for Better SCR Optimization During Transient Periods" *by Ken Greaves, CEMTEK and Darren Hanby, AEP* (Wyndsor I Room)
SCR performance is dependent on a number of parameters based on design criteria for a particular boiler. These factors will vary with operating conditions, particularly during transient conditions. Controlling an SCR has been difficult over these transient periods mostly due to the inability to obtain feedback in a timely manner from the current NOx instrumentation. This workshop discusses the use of a fast, accurate NOx measurement system, which can be used to minimize excursions of both high and low NOx during these transient periods.

Workshop 13: "Overview of AEP Commercial Scale Carbon Capture & Storage Project" *by Matt Usher, AEP* (Wyndsor II Room)
This workshop outlines the efforts at AEP's Mountaineer Generating Station to validate and scale up Alstom Power's Chilled Ammonia Process for carbon capture and sequestration. Currently AEP is operating and testing a 20 MW product validation facility (PVF) at Mountaineer, and working directly with Alstom, an A/E and DOE to design and construct for a 235 MW commercial scale capture and storage facility. The presentation will provide a technical overview of the capture and storage design, as well as focus on the challenges, impacts, and considerations for retrofitting CCS technology onto an existing coal-fired generation unit, and how Mountaineer Plant has met / is meeting those challenges.

Workshop 14: "Dynamic SO_3 Measurement and Mitigation" *by Cal Lockert, Breen Energy* (Riverchase Ballroom B)
This workshop will cover the latest advances in measurement and mitigation of SO_3 between the SCR and the ESP Inlet. Specific attention will be paid to contour profiling of SO_3 concentration between the air heater and the ESP inlet as well as dynamic biasing of sorbent injection rates to match changes in SO_3 concentration.

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

1:00 to 2:00 pm

Workshop 15: "Re-calcination for Regenerated Catalyst" *by Mark Ehrnschwender, Evonik Energy Services* (Riverchase Ballroom A)
This workshop will focus on the strength metal impregnation / re-calcination technology that has been developed to significantly enhance the catalyst substrate life and the economics from this significant advancement in technology. It is now possible to utilize the initial catalyst for over 30 years of life of the plant without requiring the significant capital expenditure of new catalyst.

Workshop 16: "Advanced SCR Catalyst - Multi-Pollutant Control Options" *by Nancy Stephenson, Cormetech* (Wyndsor I Room)
With the growing need of more stringent emission reductions from an overall plant standpoint, SCR catalyst development has advanced beyond the NOx threshold. Current evolution in SCR technology encompasses improvements not only in the primary purpose of NOx control, but for additional criteria pollutants including mercury as well as controlling ammonia slip through the catalyst bed. This discussion will focus on development of a multiple pollutant evolution of SCR catalyst.

Workshop 17: "Urea to Ammonia Systems - Technology and Feed Stock Issues" *by Bill Hankins, Wahlco* (Wyndsor II Room)
Urea to Ammonia (U2A®) Systems are an established technology offering a safe alternative to storing and handling anhydrous or aqueous ammonia for DeNOx applications. The systems have been applied at over 50 plants worldwide with ammonia production rates from a few pounds per hour of ammonia up to 10,000 pounds per hour. The workshop covers safety implications of ammonia feedstocks, the basics of the urea to ammonia technology and cost comparisons between the ammonia feedstock options.

Workshop 18: "Optimizing Plant Operations for Mercury Control" *by Scott Hinton, W.S.Hinton & Assoc.* (Wyndsor I Room)
This workshop will include a "big picture" discussion of how various plant operations affect mercury control, including fuel purchasing, SCR operation and catalyst design, APH, ESP, and scrubber operation. Mercury control schemes to meet various potential mercury regulations will be discussed.

Workshops and Panels

Tuesday, February 8, 2011

2:15 to 3:15 pm

Workshop 19: **"Dealing With Flyash Fouling in SCR DeNOx – in Theory and Practice"** *by Florian Huber, Michael Lykke Heiredal, Hans Jensen-Holm and Nate White, Haldor Topsoe* (Riverchase Ballroom A)
In the presentation, we will address particle deposition mechanisms on monolithic catalysts from an experimental and theoretical standpoint. In the experimental part of the work deposition of submicrometer KCl aerosol particles has been investigated. In addition, a general computational fluid dynamics (CFD) model for prediction of particle deposition and deposit build-up in SCR DeNOx monoliths assuming laminar and turbulent flow is implemented and compared with the experimental findings. The obtained results demonstrate that CFD is a powerful tool to explain experimental observations and to gain an increased understanding of the particle deposition and plugging in monolithic catalysts.

Workshop 20: **"SCR Inspection: The Good and the Bad"** *by Ron Richard, RE Consulting* (Wyndsor I Room)
When inspecting an SCR system, one shouldn't focus mainly on the catalyst. There are items from the economizer outlet to the SCR outlet that can effect the NOx removal just as much as the catalyst. An effective inspection will include all of these items as well as the catalyst.

Workshop 21: **"Gas-Gas Mixing Fundamentals for SCR"** *by Kevin Rogers, Babcock & Wilcox* (Wyndsor II Room)
This is a technology workshop on the fundamentals and application of gas-gas mixing on DeNOx selective catalytic reduction systems. It provides a review of fundamental mixing theory and how it can be best applied to the duty requirements of SCR systems. A portion of the time will be dedicated to questions, problems or issues from the audience, and/or examples.

Workshop 22: "**Acoustic Cleaning for SCRs – Operation and Maintenance"** *by Dave Chapin and Vincent Barreto, GE Energy* (Riverchase Ballroom B)
This workshop will discuss acoustic cleaner maintenance procedures, operation, and troubleshooting tips that will ensure the best cleaning efficiency for SCR catalyst. This workshop is for a broad audience including people that are currently using acoustic cleaners for their SCRs and people who are new to acoustic cleaning.

4:15 to 5:15 pm

Workshop 23: **"Development of Combustion Additives for Deactivation Mitigation of SCR Catalysts"** *by Mandar Gadgil, Babcock & Wilcox* (Wyndsor I Room)
This workshop is about the role of combustion additives for mitigation of SCR catalyst deactivation. It will briefly talk about the use of calcium oxide to mitigate arsenic deactivation. The main focus of the presentation is an additive's role for mitigation of SCR catalyst deactivation caused by phosphorous on units burning PRB coal. Data from a long term (7000 hours+) testing will be presented in the form of an techno-economic analysis of the additive process comparing staged and unstaged combustion.

Workshop 24: **"Commercial Operation of the ULTRA™ Urea Conversion SCR Reagent Feed System"** *by Dale Pfaff, Fuel Tech* (Wyndsor II Room)
The City Utilities of Springfield, MO - Southwest Power Station is comprised of one (1) operational generating unit (Unit 1), and one (1) new generating unit which is currently in start up phase (Unit 2). The SCR reagent feed system is a urea based NH_3 generation system provided by Fuel Tech, that utilizes an on-line urea thermal decomposition process which provides the reagent feed to SCR systems. The presentation will review the system layout, operational record, and maintenance issues for the CUS Unit 1 SCR and reagent system since being placed into commercial operation in January 2009.

Workshop 25: **"Mercury Oxidation across SCR Catalyst"** *by Brian Adair,CoaLogix* (Riverchase Ballroom B)
This workshop covers mercury regulations, now and in the future, factors that effect mercury oxidation, mercury re-emission, challenges in both the field and laboratory testing, current data on SCR catalyst and future plans.

*******Conference Event in Wynfrey Ballroom (6:00 to 10:00 pm)*******
everyone is invited including families

Dinner with Karen Mills - Comedian followed by Power Play Band (Southern Company)

Conference Events

Power Play

8:00 to 10:30 pm

Tuesday Evening

Dinner: 6:00 pm

Karen Mills: 7:00 pm

Karen Mills, Comedian

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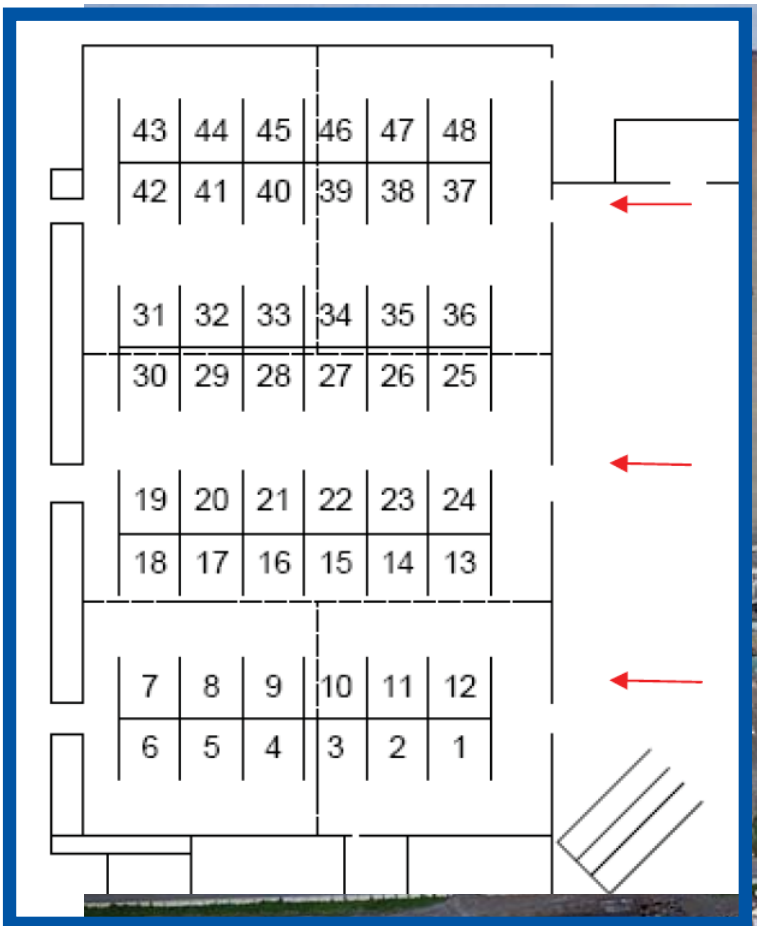

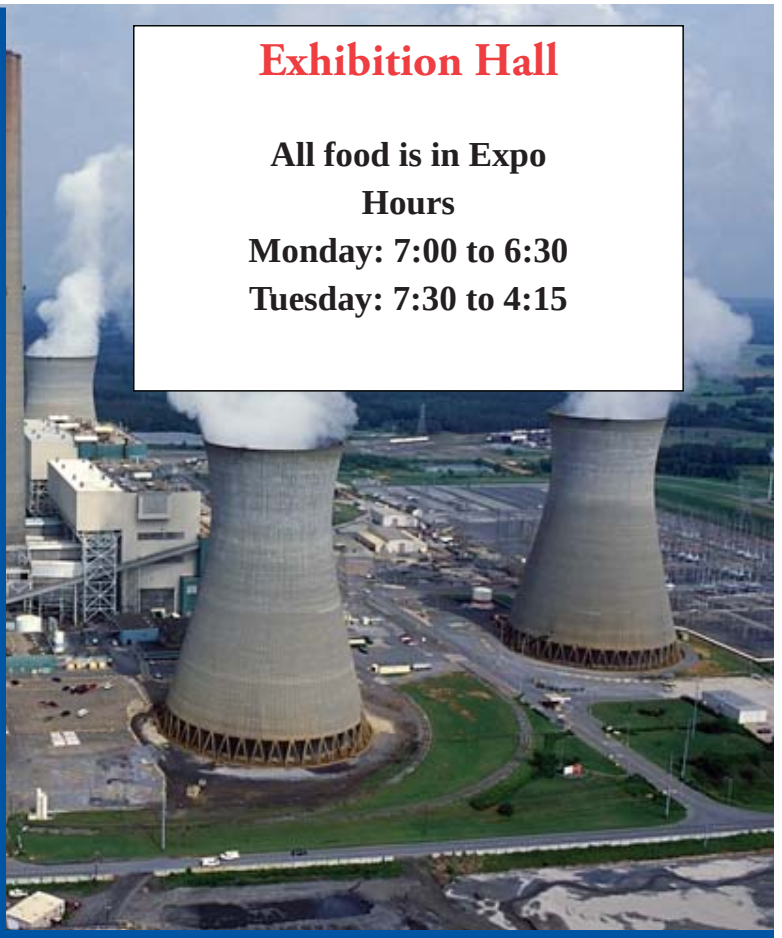

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Kings Mountain, NC 28086
Dorothee Seidel, Marketing Manager
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Business: 704-734-0688 Fax: 704-734-1088
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Warrenville, IL 60555
Kevin Dougherty,
VP Business Dev't & Marketing
info@ftek.com
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www.topsoe.com

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Hitachi, original co-developer of DeNOx catalyst, has supplied NOx removal catalyst for over 30 years to over 750 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 phosphorous resistant blends, low SO_2 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 NOx and oxidizes mercury and minimizes the conversion of SO_2 to SO_3. Because of our vast experience and knowledge, we can test and inspect catalyst and optimize AIG.

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2@ $300
3@ $200
4@ $100

Drawing to be held Tuesday at 3:30 pm in the Expo Hall

Topsøe DeNOx catalysts

– number one in biomass SCRs

RESEARCH | TECHNOLOGY | CATALYSTS

WWW.TOPSOE.COM

Designed for durability

Topsøe's unique DNX® catalyst

- unmatched resistance to poisoning by alkali metals and phosphorous
- shaped to avoid plugging
- high activity, also at low temperature

Proven performance on biomass

- high-dust co-combustion
- high-dust 100% biomass
- low-dust 100% biomass

Topsøe has supplied more than 1,000 catalyst installations for air pollution control

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CATALYSING YOUR BUSINESS