



EUCI Presents a Conference on:

FUTURE OF COAL COMBUSTION PRODUCTS (CCP)

REGULATORY, LEGAL, TECHNICAL AND NEW MARKETS

March 29 - 30, 2010 • Jackson Walker LLP Offices • Houston, Texas

POST-CONFERENCE WORKSHOP
**COAL ASH BUSINESS
PLANNING AND
MANAGEMENT**

Tuesday, March 30, 2010

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OVERVIEW

Coal combustion products (CCP) are in the news these days. Ever since the TVA Kingston ash pond failure of December 2008, television and newspapers have focused on the disposal of coal combustion products that result from firing power plants with coal. In that incident, an estimated 5.4 million cubic yards of slurry coal ash was reported to have flowed across some 300 acres, including into the adjacent Emory and Clinch Rivers in eastern Tennessee. The US Environmental Protection Agency has been reviewing the regulatory requirements for disposal of coal combustion products.

It is anticipated that whatever the precise details of the new regulations (expected December 2009) there will be a drive toward retrofitting existing wet coal ash impoundments with improved seepage collection and control systems and groundwater monitoring programs, or requiring leaching studies to be conducted on all materials before they can be used or stored.

This conference will focus on the proposed Environmental Protection Agency (EPA) rules on CCP disposal with regard to technical design and management standards, the industry perspective on those rules, pressing technical and legal issues apart from exploring the beneficial use of CCP, for example, fly ash and flue-gas desulfurization (FGD) gypsum in agriculture and the new competitive landscape.

WHO SHOULD ATTEND

CCP managers and producers; utilities; government interests; military; CCP marketers; coal supply chain including manufactures of removal, cleaning, drying, scrubbing and transportation of coal ash; academics; construction; engineering and architectural interests; retailers; law firms and consultants.

LEARNING OUTCOMES

- Describe proposed rules anticipated to be announced by the U.S. Environmental Protection Agency to regulate coal ash
- Assess the proposed technical designs and management standards under the anticipated EPA rules and its ramifications;
- Compare and distinguish between dry and wet ponds, including retrofit, closure and conversion to wet ponds
- Discuss recent changes in state and federal rules regarding mine placement
- Analyze and identify chemistry and beneficiation of materials
- Explain the benefits, utilization and new markets for coal combustion products

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Requirements for Successful Completion of Program

Participants must sign in/out each day and be in attendance for the entirety of the conference to be eligible for continuing education credit.

Instructional Methods

Case Studies and PowerPoint Presentations will be used during the conference.

PROGRAM AGENDA

MONDAY, MARCH 29, 2010

- 7:30 – 8:00 a.m. Registration and Continental Breakfast**
- 8:00 – 8:15 a.m. Introduction and Opening Remarks by Co-Chairs**
- 8:15 – 9:00 a.m. KEYNOTE ADDRESS:: STATE PERSPECTIVE ON NEW FEDERAL REGULATORY PROPOSALS**
– *Dr. Bryan Shaw, Chairman, Texas Commission on Environmental Quality*
- 9:00 – 10:30 a.m. SESSION I :: CCP DISPOSAL**
- 9:00 – 9:45 a.m. Current CCP Management and Proposed EPA Rules**
An overview of the historical and current CCP management practices, including both disposal and use, and touch on environmental risk issues. It will then present the technical designs and management standards in the new rules proposed by the U.S. Environmental Protection Agency (EPA).
– *Ken Ladwig, Senior Project Manager for Coal Combustion Products Research, Electric Power Research Institute*
- 9:45 – 10:30 a.m. Proposed EPA Rules: Electric Utility Industry Perspective**
This presentation would focus on the electric utility industry's perspective regarding the EPA's proposal and USWAG's view regarding appropriate regulation of CCPs. The presentation will include the regulatory background and weave in the views of other stakeholders that have been communicated to the EPA and others such as the Office of Budget and Management (OMB) and the White House over the past several months.
– *James Roewer, Executive Director, Utility Solid Waste Activities Group*
- 10:30 – 11:00 a.m. Networking Break**
- 11:00 – 11:45 a.m. Retrofit, Closure and Conversions of Wet Coal Ash Impoundments: Technical and Commercial Implications of the New Regulatory Environment**
This presentation will review technical and commercial implications that have emerged from the TVA Kingston ash pond failure that occurred in December 2008. An estimated 5.4 million cubic yards of slurried coal ash was reported to have flowed across some 300 acres, including into the adjacent Emory and Clinch Rivers in eastern Tennessee. Post TVA Kingston, the US Environmental Protection Agency (EPA) has reviewed the regulatory requirements for disposal of coal combustion products.

It is anticipated that whatever the precise details of the new regulations (expected December 2009) there will be a drive toward retrofitting existing wet coal ash impoundments with improved seepage collection and control systems and groundwater monitoring programs. It is also possible that owners and operators will need to increase the level of impoundment safety inspection, monitoring, maintenance and long term closure planning activity than may currently prevail. A number of existing wet coal ash impoundments may also require to be closed, with the plants being converted to alternative waste technologies such as dry ash and thickened paste handling processes.

Conceptual designs for geosynthetic liner systems and seepage (leachate) collection will be presented, together with approximate all in unit cost estimates and schedules, based on similar projects. Examples of a dry ash conversion project and a thickened paste process will be reviewed as alternatives to conventional wet ash disposal.
– *Graham Elliott, Ph.D., CEng MICE, Golder Associates Inc.*

PROGRAM AGENDA

MONDAY, MARCH 29, 2010 (CONTINUED)

11:45 a.m. – 12:30 p.m. Utility Considerations Relating to Coal Combustion Products Disposal and Use Under the New Regulatory Regime

This presentation will discuss technical and practical utility considerations relating to the disposal and use of coal combustion products (CCPs) under the upcoming, new regulatory regime, using specific examples. Some of the issues addressed will be:

- Similarities and differences of CCP characteristics, including fly ash, bottom ash and flue gas desulfurization products, and how they compare to municipal solid waste and some industrial by-products
- Some existing landfill and pond design standards and how new regulations might impact ongoing regulations
- Some existing mine placement standards and how they might be impacted by new regulations
- Issues relating to wet and dry handling of fly ash, bottom ash and FGD products
- Issues relating to water treatment systems
- Issues relating to timing of planned operational modifications and changes, permitting and regulatory deadlines

– *Dana Meier, Manager, Fuel Supply, Indianapolis Power & Light*

12:30 – 1:30 p.m. Group Luncheon

1:30 – 3:00 p.m. SESSION II:: MINE PLACEMENT

1:30 – 2:15 p.m. Recent Legislative and Regulatory Developments re the Use of Coal Combustion By-products in Mine Reclamation - A State Perspective

As long as the United States continues to generate the majority of its electricity from coal (which has steadily been in the 50 percent range), we will generate substantial amounts of coal combustion by-products (CCBs) or coal ash. Disposal of CCBs can happen at expanded or newly created surface impoundments or landfills, thus requiring more land disturbance, or it can be placed and used in mines, where land disturbance has already occurred. Other beneficial uses of CCBs are also available and on the rise, including wall panel products, cement production, concrete products, road base, snow and ice control, waste stabilization, and agriculture -- however there is a limit to these applications.

Over the course of the past year, following the TVA coal ash spill in December of 2008, increasing attention and concern has been aimed at the mine placement of CCBs based on some of the same arguments and debate leveled against the use of impoundments and landfills for CCB disposal. This presentation will focus on some of the recent legislative and regulatory developments affecting mine placement of CCBs and the impact that these developments will have on state governments, who generally have primary responsibility for regulating in this area.

– *Gregory E. Conrad, Executive Director, Interstate Mining Compact Commission*

PROGRAM AGENDA

MONDAY, MARCH 29, 2010 (CONTINUED)

2:15 – 3:00 p.m.

Beneficial Use of Coal Ash for Mine Reclamation in Pennsylvania

The beneficial use of coal ash at Pennsylvania mines began in the late 1980s. Currently over 11 million tons of coal ash are beneficially used each year. Using ash at mines saves the power generation industry over \$200 million per year and has resulted in more than 4,500 acres of mine reclamation, valued at \$180 million.

Two levels of approval are needed to use coal ash at a mine: The ash must be “certified” for beneficial use and it must be evaluated to assure its use is consistent with mine site hydrology and the reclamation plan.

Technical guidance was updated in April 2009. Changes include:

- increases in the suite of parameters measured in coal ash and at water sample points
- increases in frequency of sampling
- improvements in sampling protocols
- collection of a full water year’s worth of baseline water monitoring
- 10 year’s worth of post-placement water monitoring

The acceptable leaching values for some chemical parameters were lowered. Lowering of the arsenic limit resulted in some sources used in the past to no longer be acceptable for beneficial use. The Department of Environmental Protection (DEP) is in the process of promulgating regulations that will incorporate much of what is in guidance into the regulations.

– *Keith Brady, P.G., Chief, Surface Mining Section, Bureau of Mining and Reclamation, Pennsylvania Department of Environmental Protection*

3:00 – 3:30 p.m.

Networking Break

3:30 – 5:00 p.m.

SESSION III :: PRESSING AND PRACTICAL LEGAL AND TECHNICAL ISSUES

3:30 – 4:15 p.m.

Establishing Protection of Human Health and the Environment for CCR Beneficial Use Applications through Use of Improved Leaching Test Methods

Significant advancements have been made to more accurately characterize the leaching potential of mercury and other metals in coal ash and other coal combustion residues (CCRs). At the same time, the addition of flue-gas desulfurization (FGD) systems, selective catalytic reduction, and activated carbon injection to capture mercury and other pollutants will shift mercury and other pollutants from the stack gas to fly ash, FGD gypsum, and other air pollution control residues.

Research is being conducted by the U.S. EPA’s Office of Research and Development to apply the new leaching test methods across a range of CCRs from facilities that use multi-pollutant control technologies. The new leaching test methods address concerns raised by EPA’s Science Advisory Board and the National Academy of Sciences on the overly broad use of single-point pH tests. Results from this research will be presented using a data management program (i.e., LeachXS Lite) that illustrates differences in CCR material types, coal rank, and air pollution control configurations. Information will be presented on how this data can be used to support future beneficial use decisions to ensure protection of human health and the environment.

– *Susan Thorneloe, Senior Environmental Engineer, U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory*

PROGRAM AGENDA

MONDAY, MARCH 29, 2010 (CONTINUED)

- 4:15 – 5:00 p.m.** **Legal Impacts on and Strategies for Ash Management in Light of New Federal Regulations Regarding CCB Disposal and Mine Placement**
Drawing upon historic experience from the initial implementation of federal hazardous and non-hazardous waste regulations this session will identify key legal issues that are likely to arise regarding applicability/grandfathering; closure versus continuation of existing units; financial assurance and bond release issues; and state permitting programs and associated public participation requirements. Conceptual proposals will be outlined regarding how states and operators might minimize the burdens of the new federal regulations governing CCB disposal and mine placement.
- *Mike Nasi, Partner, Regulatory & Legislative Practice Group, Jackson Walker LLP*

TUESDAY, MARCH 30, 2010

- 7:30 – 8:00 a.m.** **Continental Breakfast**
- 8:00 – 8:45 a.m.** **Opening Remarks: Perspective of the Coal Ash Industry**
– *Tom Adams, Executive Director, American Coal Ash Association*
- 8:45 a.m. – 12:30 p.m.** **SESSION IV:: CCP UTILIZATION, BENEFITS & NEW MARKETS**
- 8:45 – 9:30 a.m.** **Two Degrees and a Million Miles Off on CCP's?**
The benefits of Coal Combustion Products (CCP's) have widely been recognized for their contribution to reducing CO₂'s; a Greenhouse Gas (GHG) that is attributed to Global Warming/Climate Change. While understanding the magnitude, causes and implications of Climate change continues to grow, so do the efforts to further that understanding. Alongside these new realizations a sense of urgency is spurring many international, national, regional, and local policymakers along with, industry leaders, non-governmental organizations and citizens to mobilize toward action. Caught in the middle of this turbulent action are CCP's and the mechanisms for Beneficial Use.
- *Keith Bargaheiser, National Manager of CCP Utilization, Headwaters Resources*
- 9:30 – 10:15 a.m.** **Coal Ash Beneficiation Technologies**
Ash beneficiation is the use of processing technologies for the purpose of adding value and usefulness to coal combustion ash. The primary reason that ash beneficiation is necessary is that recent changes in combustion practice have rendered combustion ash less usable than in previous generations. For example, bottom ash was once commonly used to produce concrete masonry units. So common was the practice of using the coarse ash residue from stoker boilers, frequently called cinders, that the masonry units, or blocks, were called cinder blocks. Unfortunately, changes in the quality of the ash over the years made the practice less common. However, a resurgence is currently taking place, made possible by beneficiating the ash to remove the less desirable components and provide a high quality, consistent product.

PROGRAM AGENDA

TUESDAY, MARCH 30, 2010 (CONTINUED)

9:30 – 10:15 a.m.

Coal Ash Beneficiation Technologies *(continued)*

There are essentially three basic ash beneficiation technologies in commercial use that are applicable to fly ash; air classification, electrostatic separation and thermal processing. Using these technologies has become necessary with wide-spread adoption of low NO_x burners, which produce coarser fly ash containing higher levels of un-burned carbon. Each of these technologies focuses improving fly ash quality to enable use in concrete. Wet beneficiation technologies have also been developed with similar processing objectives, with the additional benefit of being applicable to ash stored in ponds and landfills.

The presentation will include a review of commercial beneficiation technologies for coal combustion bottom ash and fly ash in use today, as well as beneficiation technologies used for coal gasification slag.

– *Dr. Jack Groppo, Senior Engineer, Center for Applied Energy Research, University of Kentucky*

10:15 – 10:45 a.m.

Networking Break

10:45 a.m. – 12:30 p.m.

SESSION IV CONTINUED

10:45 – 11:30 a.m.

Agricultural and Land Application Uses of FGD Gypsum

The properties of FGD gypsum that have a direct impact on its potential benefit for agricultural and land application uses are due to its (1) being a source of high amounts of soluble calcium and sulfate, (2) being a source of plant nutrients, (3) ability to counteract soil acidity and (4) uniform particle size. Land application uses of FGD gypsum are identified by matching the properties of the FGD gypsum with improvement in some ecosystem function (or functions). For beneficial use, the change in ecosystem function is assumed to be positive and must be considered in terms of recommended application rates, environmental impact and economic return. More than 20 different potential beneficial uses of FGD gypsum have been identified. Often, the primary intended benefit relates to plant growth, but there may be other benefits to soil or water such as reduction of erosion, improved quality of runoff and/or leachate water, or improved internal drainage. The application rate must be sufficient to cause soil improvement, but not so great as to constitute disposal of the FGD gypsum. Acceptance in the agricultural community for using FGD gypsum to improve soil properties and enhance crop production is increasing. My presentation takes a systematic look at the various types of land application uses of FGD gypsum, a description of best management practices, and the potential environmental impact of the FGD gypsum use.

– *Warren A. Dick, Professor, Soil Science, The Ohio State University*

11:30 a.m. – 12:15 p.m.

Strategies for Development of FGD Gypsum Resources: The New Competitive Landscape

Up-to-date information will be presented on the status of new FGD scrubber installations in North America, projections for additional installations and how the competitive landscape is changing for FGD gypsum markets with an emphasis on corrections in the gypsum wallboard industry. Impacts of the nationwide housing slump on the wallboard manufacturing and cement industries will be discussed along with the potential for recovery. Strategies for development of new products and markets for FGD gypsum will be explored.

– *E. Cheri Miller, Founder, Gypsum Parameters*

12:15 – 12:30 p.m.

Closing Remarks from the Chair and End of Conference

POST-CONFERENCE WORKSHOP
**COAL ASH BUSINESS
PLANNING AND MANAGEMENT**

Tuesday, March 30, 2010
Registration: 1:00 – 1:30 p.m.
Workshop Timing: 1:30 – 4:30 p.m.

OVERVIEW

The purpose of this workshop is to provide a framework for utilities to evaluate options for management of coal ash products under the expected change in regulatory requirements. This framework provides a systematic method for considering the costs, constraints, potential liabilities and risks posed by operational, landfill/ash pond stability, facility closure, facility siting, and beneficial reuse.

Understanding the current condition of ash assets provides the foundation for sound business planning. This includes current disposal operations, existing permitted facilities, and how these facilities fit within the proposed regulatory framework. Potential changes in disposal options, operations, and facility design can then be evaluated with respect to business needs and regulatory changes. Beneficial reuse as an option will be evaluated within the context of proposed regulations, and the potential for past and future liabilities will be explored.

The workshop will conclude with a discussion of the facets of systems business planning modeling as it pertains to ash management in particular, and overall business planning in general.

LEARNING OBJECTIVES

- Discuss the current condition of ash assets which provides the foundation for sound business planning. This includes current disposal operations, existing permitted facilities and how these facilities fit within the proposed regulatory framework.
- Explain the expected changes in regulatory requirements
- Evaluate options for management of coal ash products under the expected change in regulatory requirements
- Analyze the potential changes in disposal options, operations, and facility design with respect to business needs and regulatory changes
- Identify beneficial reuse as an option within the context of proposed regulations, and the potential for past and future liabilities will be explored.
- Assess the facets of systems business planning modeling as it pertains to ash management in particular, and overall business planning in general.

AGENDA

- Developing an Ash Management Business Framework
- Evaluating the Potential Use of Current Landfill Assets and Associated Geotechnical Liabilities and Risks
- Identification of Alternative Ash Management Solutions and Systems, their Cost and Liabilities
- Role of Beneficial Reuse – Options, Costs Benefits and Potential Liabilities
- Development and Use of an Ash Management System Business Planning Model, Its Benefits and Uses

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Instructional Methods
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**Requirements for
Successful Completion**
Participants must sign
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workshop and be in
attendance for the entirety
of the workshop to be
eligible for continuing
education credit.

WORKSHOP PRESENTERS

Andrew Keir, M.Sc. (Econ), MCIP, RPP, Andy is a **Senior Economist in AECOM Environment**. He has strong experience in waste management for public and private sector organizations across North America and overseas. His specific areas of expertise involve system modeling, financial analysis and business planning.

John M. Trast, P.E., is a **Geotechnical / Solid Waste Engineer in AECOM Environment**. He has 16 years of experience in the permitting, design, construction, and operation of industrial landfills and beneficial reuse of ash and coal combustion products for utility and industrial clients.

Jamie S. Matus, VP, CPG, Jamie is the **Midwest District Manager** for geotechnical engineering services within the **Specialty Practices Group of AECOM**. He has over 23 years of consulting experience and has completed geotechnical engineering projects throughout the US and abroad including the Caribbean, The Middle East and the Korean Peninsula. He has worked with major power producers on environmental and geotechnical issues related to coal ash for the past 17 years.

Lisa JN Bradley, Ph.D., DABT, is a **Senior Toxicologist and Regional Program Manager** for **AECOM Environment**. She has a Ph.D. in Toxicology from MIT and is a board-certified toxicologist. She has over 20 years of experience in risk assessment and toxicology. She is currently managing several coal ash risk assessment projects, has worked with USWAG to prepare comments on USEPA's coal ash risk assessment, and has worked with clients on environmental communications for coal ash sites.

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PROCEEDINGS

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All cancellations received on or before February 26, 2010 will be subject to a \$195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI conference or publication. This credit will be good for six months. In case of conference cancellation, Electric Utility Consultants' liability is limited to refund of the conference registration fee only. for more information regarding administrative policies such as complaints and refunds, please contact our offices at (201) 871-0474.

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