



ACAA
INTERNATIONAL

Ash at Work

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New Book "Coal Ash - Innovative Applications of Coal Combustion Products" published

Coal Ash - Innovative Applications of Coal Combustion Products (CCPs), the hardcover book published by the American Coal Ash Association (ACAA), is ready for distribution in September 1998. A limited printing of 2,500 copies of this unique book is being shared by ACAA and the ACAA Educational Foundation.

This handsome 91-page cloth-bound book contains more than 100 full-color photographs to supplement the printed text. In addition to describing the need for CCP management and use programs, the benefits of membership in ACAA are also reviewed. The book provides a concise overview of CCP production and use, as well as a sampling of the wide range of CCP applications that can be found throughout the USA and internationally. These selected CCP applications include: concrete products, geotechnical projects, manufactured products, agricultural and environmental uses and examples of CCP applications for highway and building construction.

A technical section provides an overview of CCP production, physical and chemical characteristics of CCPs, and the wide variety of guidelines, standards and regulations that

play a part in the selection of CCPs for a variety of uses.

The Association and the Foundation have created this book both to enlighten and to inform, and it has been designed to be of interest to a wide range of readers, from the general public to those having detailed experience, either as producers or marketers of CCPs. Their reward will be the increase in awareness and knowledge that can accrue to anyone who finds this unique volume in both public and personal libraries throughout the world.

After mailing complimentary copies of the book to ACAA members, we are now fulfilling early purchase orders. Next, we will implement a staged plan to deliver copies of the coal ash book to key federal agency personnel, selected staff and committee members in Congress, administration officials, and major media contacts.

We expect to have some 1,500 copies of the coal ash book remaining in stock for sale to our members and others. We hope each ACAA member will choose to purchase multiple copies of the book for use in promotional and educational activities. For more on the Coal Ash Book see pages 6 and 27.

September 1998 Table of Contents

Coal Ash Book Published.....	1,6,27
Worldwide Coal Ash Council.....	2
Pittsburgh Coal Conference	3
State Regulations Update.....	4
Fly Ash Facts - Third Printing.....	5
CCP Production & Use.....	5,14-15
High Carbon Fly Ash as Kiln Feed.....	6
Chairman's Letter - Coal Ash Book.....	6
Land Application - FGD Material.....	7
Cement Industry & Kyoto Protocol. . .	7
Mining Industry & USDOE Agreement..	8
New Transportation Legislation.....	9
ACAA Supports Coalition.....	9
US-DOE National Energy Strategy...	10
Southeastern Electric Exchange.....	10
EPA Report - Electric Utility Industry....	11
ASTM E50 meets in Austin.....	11
More Dam News from PCA.....	11
CCP Industry Honors Jackie Bird.....	12
PCA Offers Publication Services.....	13
ACAA's 13th International Symposium ..	16
Symposium Registration Form.....	17
Symposium Program.....	18
Foundation Golf Outing.....	19
Golf Sponsorship/Registration.....	20
ACAA Foundation Scholarships.....	21
ACAA/ECOPA Meeting in Toronto.....	22
CCP Lagoon Liner in Ohio.....	23
Flowable Fill Workshop in Wisconsin...	24
Federal Procurement - Flowable Fill....	24
Fly Ash for Low Permeability Concrete..	25
Member News.....	25
New ACAA Promotional Video.....	25
ACAA's TRI Workshop - Atlanta.....	26
Order Form for "Coal Ash Book".....	27
ACAA Calendar of Events.....	28

Ash at Work is published three times per year and is available, free of charge, to ACAA members. The annual subscription price is US \$395.

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Tyson's Corner

Commentary by: Sam Tyson
ACAA Executive Director

CCP Industry to Pool Resources

Worldwide Coal Ash Council

The American Coal Ash Association (ACAA) has been in the unique position to provide leadership and service to the coal combustion product (CCP) industry for more than three decades. Since the Association's founding in March 1968, the methods for gathering and disseminating information have changed dramatically, from manual typewriters to the lightning speed of the Internet. Throughout that time, a stream of CCP applications--as diverse as agricultural soil amendment, mine reclamation, manufacture of structural concrete for buildings and bridges, and filler applications in paints, plastics and aluminum--has developed. And concurrently, laws and regulations governing the use of CCPs have been installed, both in the USA and internationally, and technical papers, guidance documents and specifications--recording the past and shaping the future for CCP applications--have increased dramatically.

As in other industries, the technical, commercial and environmental aspects of CCP management and use can be expected to develop and change over time; and the need to plan for and respond to change will continue to be important to the success of the Association and its members. Among the benefits to members from ACAA's programs and activities, the principal benefits have been generally described as follows: unified industry voice; educational opportunities and professional growth; market awareness and development; and information exchange and networking. I'd like to focus at this time on "information exchange and networking" and the synergy that results from the "pooling of resources."

In a recent interview, Joel Pattishall, ACAA's Chairman of the Board and manager of CCPs for Pennsylvania Power & Light, stated that "coal ash issues in the USA are really no different than coal ash issues in other parts of the world" (ACAA Video, 30 Years Leading and Serving the CCP Industry, Running Time: 6:00 minutes). And, as we discussed this thought several weeks later, Joel suggested that even though ACAA's committee meetings, workshops, symposium and related activities are full of opportunities for members to exchange information and network with peers, there should be additional opportunities for networking and sharing with representatives from international organizations beyond the ways we now do that (symposium papers, etc.). Following that discussion, ACAA has made arrangements for a special session to be held during ACAA's 13th International Symposium in which international representatives from organizations throughout the world can discuss their programs and activities to advance the management and use of CCPs.

(continued on page 3)

Tyson's Corner (Continued from page 2) - Worldwide Coal Ash Council

This initial meeting, as well as subsequent meetings, is not intended to be either lengthy or highly technical. On the contrary, it is intended only to open avenues of discussion for networking, and later for information exchange, for example about ongoing research topics, and subjects that could lead to benefits for participants in the discussion group. Later, as information is exchanged and as the networking continues, each member of participating organizations, such as ACAA, would begin to benefit from the ongoing "pooling of resources."

The name that has been proposed for this group is the **Worldwide Coal Ash Council**. The Council would not collect dues, and the only requirement for participation would be a willingness to develop networking opportunities and the exchange of information among voluntary participants for the advancement of CCP management and use in ways that are technically sound, commercially competitive and environmentally safe.

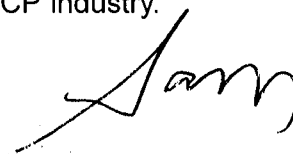
The Council will convene for the first time during ACAA's 13th International Symposium on the Management and Use of CCPs, to be held in Orlando, Florida. The Council will meet on Tuesday, January 12, 1999, from 11:00 am to 12:00 noon. The Council will function as an informal group without dues and will serve as a central clearinghouse for information about technical publications and ongoing research activities of mutual interest among the worldwide organizations concerned about advancing the management and use of CCPs.

Subsequent to this initial meeting, international participants could convene a meeting of the Council at any time and place found to be convenient by three or more participating organizations.

ACAA's international members will receive early invitations to attend the initial meeting of the Council. Current international members are: New Brunswick Power Corporation, Canada; Ontario Hydro, Canada; Center for Coal Utilization, Japan;

China Fly Ash Utilization Technology Center; Coal Ash Institute of India; European Association for Use of the Byproducts of Coal-Fired Power Stations (ECOPA, representing 15 countries); Finnish Energy Industries Federation, Finland; Prinsholland, The Netherlands; and Industrial Technology Research Institute, Taiwan.

Other organizations will be invited, and the meeting will be open to all international organizations having an interest in the management and use of CCPs. We look forward to this exciting opportunity to pool the resources of the worldwide CCP industry.



P.S. - Another special activity at ACAA's 1999 Symposium in Orlando will be The Second ACAA Educational Foundation Golf Tournament to fund the Foundation's Scholarship Program. To register to play, or to become a sponsor, visit ACAA's Internet web site at <<http://www.ACAA-USA.org>>.

1998 Pittsburgh Coal Conference Features Two Sessions on Coal Ash

The 1998 Pittsburgh Conference was held at the Pittsburgh Green Tree Marriott during the week of September 14-18, 1998. The Tuesday, September 15 program included two sessions on CCP management and use. A session on Ash Technology was organized and chaired by Barry Stewart of ACAA; and a session on Ash Utilization at Mine Sites was organized and chaired by Tom Gray of GAI Consultants and Leslie Ruppert of the U.S. Geological Survey. Six papers were presented in each of these two sessions. The 1998 conference theme was "Coal-Energy and the Environment". ACAA's Executive Director, Sam Tyson, serves on the Advisory Board for the Pittsburgh Coal Conference.

CCPs Strengthen Federal Legislation

In 1999, ACAA will target federal legislation dealing with infrastructure construction and maintenance to encourage the use of coal ash, or coal combustion products (CCPs), through the introduction of provisions stated as follows:

"The procurement and use of coal ash, or coal combustion products (CCPs), shall be maximized in all applications to construct and maintain the national infrastructure resulting from and/or supported by this legislation.

"CCPs are defined as fly ash, bottom ash, boiler slag and flue gas desulfurization material resulting from combustion of coal.

"The maximum usage of CCPs will be determined by employing sound engineering practices for applications that are technically sound, commercially competitive and environmentally safe.

"Principal applications of CCPs include, but are not limited to, use in concrete, base/subbase, flowable fill, structural fill, grout & paving as described in U.S. DOT-FHWA publication, Fly Ash Facts for Highway Engineers [FHWA-SA-94-081].

"These and other specific applications of CCPs are covered in the referenced U.S. DOT/FHWA publication, in standards developed by the American Society for Testing & Materials, and in specifications developed by individual state DOTs."

We will urge each ACAA member to tell their state and federal representatives why they should encourage the use of CCPs. Here is a short list of talking points to help with the delivery of this important message--

No Added Cost - CCPs are engineering materials. Annually, 100 million tons are available throughout the USA at competitive prices.

Stacked on a football field, these CCPs would reach a height of 10 miles.

Reduced Carbon Dioxide - Each 100 tons of CCPs used in cementing applications avoids the emission of 80 tons of CO₂, a greenhouse gas produced by the cement industry.

Safety and Lives - The construction of highway overpasses at dangerous intersections improves traffic flow and saves lives, and the

use of certain CCPs as structural fill can make this option a reality for communities in many areas.

Sustainable Development - The U.S. EPA supports the procurement of a number of environmentally preferable products containing CCPs. Such procurement conserves natural resources and energy, saves landfill space and promotes commerce.

Strengthening federal legislation with language that encourages the use of CCPs makes sense now, and in the future.

State Regulations Document Updated

ACAA's State Solid Waste Regulations Governing the Use of Coal Combustion Products has been revised and published in August.

The 57 page summary of state regulations was last published in June of 1996.

The publication was compiled by Diana Jagiella, an environmental attorney with the firm of Howard and Howard, in Peoria, Illinois.

The publication has been very popular with members and is now available.

Fly Ash Facts for Highway Engineers

Third Printing Scheduled

ACAA is preparing for a third printing of the document, Fly Ash Facts for Highway Engineers (FHWA-SA-95-081, August 1995). Originally published by the Federal Highway Administration, a second printing of 10,000 copies was funded by ACAA. To date, some 16,000 copies of the full color, 70-page document are in circulation. The publication is organized into six sections that address the use of coal fly ash in six applications: concrete, base stabilization, flowable fill, structural fill, grout and paving.

The original document was completed through a collaborative effort between FHWA and ACAA. Due to the incredible demand for the initial printing by the Government Printing Office (GPO), the first printing of 6,000 copies was

exhausted in a matter of a few weeks after the document was first released in January 1996. Subsequently, FHWA gave ACAA permission to reprint the document.

ACAA republished 10,000 copies of the document in the Spring of 1996. The demand for this publication has remained steady and ACAA has fewer than 100 copies remaining from the second printing. ACAA staff is currently working with a consultant to arrange the third printing of this popular document. The exact number to be printed and the expected publication date have not yet been determined.

Fly Ash Facts for Highway Engineers was written to provide technical information about engineering applications of fly ash to highway engineers.

Interestingly, other potential users of CCPs have also found this document to be very useful. It is supportive of ACAA's mission to advance the use of CCPs in ways that are technically sound, commercially competitive and environmentally safe. The current document supersedes the 1986 version with similar title, but which dealt only with concrete and base applications of fly ash.

When the FHWA document is reprinted, copies will be available through ACAA. Individual copies will be \$5.00 for members and \$9.50 for non-members; and cartons of 135 copies will be offered for \$492.00 for members and \$965.00 for non-members. These prices, established in 1996 to recover the costs to ACAA for printing, handling and mailing, are expected to remain the same through 1999.

ACAA's Report on Coal Combustion Product (CCP) Production & Use for Calendar-Year 1997

The total production of all CCPs (Fly Ash, Bottom Ash, Boiler Slag and FGD Material) was more than 105 million short tons in 1997. Some major uses of fly ash were: Cement/Concrete/Grout, 9.4 million tons; Flowable Fill, 0.4 million tons; Road Base/Subbase, 1.4 million tons; and Waste Stabilization/Solidification, 3.1 million tons. Overall, CCP production is up by 3.2 million tons from 1996, and total CCP use is up 4.0 million tons or 27.8 percent of total production.

The report is posted on ACAA's Internet web page <www.ACAA-USA.org> and may be printed from that source. Printed copies are available from ACAA on request for a nominal charge. ACAA distributes printed copies of the report to ACAA members and all participants in ACAA's annual survey of the CCP industry. Additional copies are distributed to government agencies and to registrants at trade shows and educational meetings. (See pages 14 & 15 for survey report.)

High Carbon Fly Ash - Kiln Feed for Cement Manufacture

[From the Electric Power Research Institute (EPRI report number TR-110808)]

ACAA is pleased to learn of the availability of this completed report. The report was prepared for EPRI by the Construction Technology Laboratories, Inc., Skokie, Illinois. The purpose of the project was to demonstrate the use of high-carbon fly ash as a component of raw kiln feed in the manufacture of portland cement. The study consisted of a review of the technical literature followed by a laboratory and pilot plant study.

Several candidate fly ashes were analyzed to determine their chemical composition. Based on these results, fly ashes were selected from four EPRI member power plants for further testing. A companion

cement plant was selected for each power plant.

Based on the analysis of the fly ashes and the materials from the cement plants, raw mix designs were developed for each cement plant. One was designed to replicate the kiln feed currently being used at the cement plant. Another was designed with the same composition, but incorporating the fly ash from the companion power plant. These mixes were fired in a bench-scale kiln to produce clinkers. The results of this work showed that three of the cement plant-power plant combinations warranted further work at a pilot plant. Two portland cement linkers, one with and one without fly ash,

were made from materials supplied by each cement plant-power plant pair.

The six clinkers were analyzed for chemical composition and mineral phases--then ground with gypsum to make cements. These were evaluated by a series of tests to determine abnormal stiffening potential, initial setting time, compressive strength, drying shrinkage, and heat of hydration. The results demonstrate the practicality of manufacturing cements that meet all of the requirements of ASTM C 150 for Type I portland cements. The use of fly ash as kiln feed offers the possibility of significant fuel savings and reduced alkali content of the portland cement.

The following letter appears on the inside cover of ACAA's new hardcover coal ash book.

The management and use of coal combustion products (CCPs) is an ACAA success story. Since its founding in 1968, ACAA has focused on the use of CCPs and the development of educational programs with an emphasis on technical soundness and environmental stewardship.

ACAA's efforts have gained international recognition for CCPs as valuable engineering and manufacturing materials. Created through the combustion of coal to generate electricity, CCPs will continue to be a valuable mineral resource for a sustainable future.

This book was created through the generous financial and technical support of ACAA members. The use of CCPs is the common thread that runs from cover to cover. From city skylines to rural roads; from massive dams to lightweight filler applications; the reader will gain an insight to the myriad of "innovative applications of CCPs."

Joel Pattishall - Chairman, ACAA Board of Directors

(For more on the Coal Ash Book, please see pages 1 and 27.)

Land Application Dry Flue Gas Desulfurization Material

[From the Electric Power Research Institute (EPRI report number TR-109652)]

This report resulted from cooperative research sponsored by: EPRI; American Electric Power Company; Dravo Lime Company; Ohio Coal Development Office; Ohio Edison Company; Ohio State University; and U.S. Department of Energy.

The Clean Air Act, as amended in 1990, spurred the development of flue gas desulfurization (FGD) technologies, several of which produce a dry, solid by-product material consisting of excess sorbent, reaction products containing sulfates and sulfites, and coal fly ash. A three-phase study was initiated in December 1990 to demonstrate high-volume beneficial uses of FGD by-products as alternates to landfilling. Phase 1 characterized the chemical, physical, mineralogical, and

engineering properties of FGD by-products from 13 coal-fired boilers, and provided a preliminary evaluation of the economic feasibility of various FGD by-product applications.

This report covers Phase 2 of the study, which included 1) laboratory and greenhouse studies to evaluate the use of dry FGD by-products as a soil conditioning amendment for acidic minespoils and agricultural soils, 2) field studies to test several high-volume agronomic and engineering uses, and 3) development and preliminary application of basic methodological framework for estimation of the economic costs and benefits to society of various beneficial reuse options. The laboratory and greenhouse studies found the FGD by-products, when applied at appropriate rates, were

highly effective in neutralizing acidity and ameliorating phytotoxic conditions in minespoils and soil. The field studies showed that FGD by-products have the necessary physical properties for successful use in a variety of engineering applications. However, the economic studies revealed that use of FGD by-products as a substitute for various agronomic construction, and mine reclamation applications would satisfy only a small market, and landfilling would continue to account for roughly 90 percent of FGD by-product disposal.

Still, this report provides support and encouragement for those who are interested in developing land application use for CCPs, and ACAA is pleased to announce its availability. Call EPRI at 510-934-4212.

Cement Hardens Stance on Kyoto Protocol

[From the PCA EXECUTIVE REPORT]

Deep cuts in carbon dioxide emissions could trigger cement trade imbalances that result in plant closings, a cement industry official told members of the Air & Waste Management Association at its June 1998 meeting in San Diego.

A paper presented by Andrew O'Hare, American Portland Cement Alliance, reviewed how last December's Kyoto protocol on global climate change could

affect the U.S. cement industry. The protocol of the Framework Convention on Climate Change reached in Kyoto calls for the U.S. to reduce greenhouse gas emissions 7% below what they were in 1990. By the target date of 2010, the cement industry's greenhouse gas emissions are expected to be 15% to 20% above 1990 levels.

Cuts of this magnitude go beyond process modifications

and would require reducing the clinker content of cement, a practice not allowed by current standards. Clearly, from ACAA's perspective, the contributions of fly ash to reductions in carbon dioxide emissions from the cement industry, through use of fly ash in concrete to replace a portion of the portland cement, will continue to be an important environmental benefit well into the 21st century. Call APCA at 202-408-9494.

Mining Industry Reaches Agreement with US Department of Energy

Sam Tyson and other trade association representatives attended a June 4, 1998, ceremony in which Secretary of Energy, Federico Pena, and officials from the National Mining Association penned an agreement to launch an important new government/industry research and development partnership.

According to Secretary Pena, "Today's agreement will help to maintain the United States as a world leader in mining, reduce costs for producing goods, increase our energy security, improve environmental performance, and help our economy prosper."

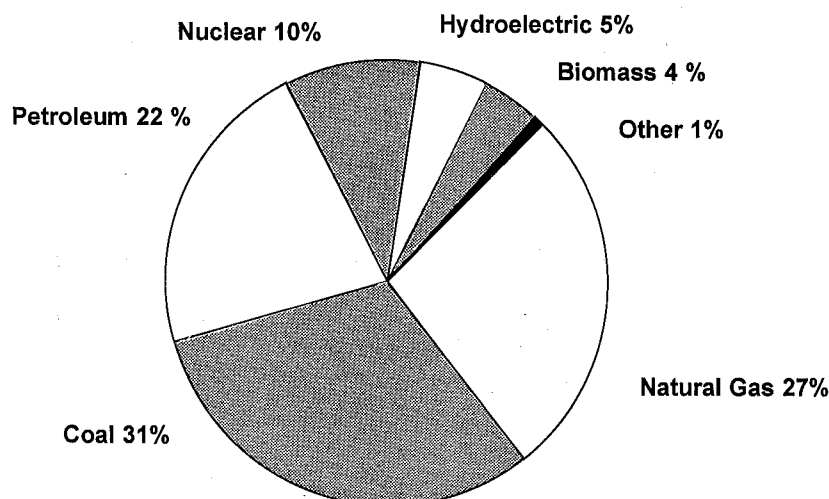
The mining industry's continued vitality is crucial to the U.S. economy--mining supplies the minerals and coal essential to the competitiveness and supporting infrastructure of virtually the entire U.S. economy. Buildings, bridges, and large and small equipment

are all manufactured from processed minerals such as glass, ceramics, metals and cement. Over half of the nation's electricity is generated from coal, and coal accounts for 31 percent of the total energy produced in the USA. (See chart, below.)

In signing up as one of the department's "Industries of the Future," the mining industry joins a group of seven other energy-intensive industries--aluminum, chemicals, forest products, glass, metal-casting, steel, and agriculture, that have come to rethink how they manage technology. The department's program began in 1995 and encourages energy-intensive industries to work together to: create broad, industry-wide goals for the future; identify specific technology needs and priorities; and form cooperative research alliances to help attain those goals through technology partnerships.

United States Congressman Jim Gibbons, Second Congressional District of Nevada, attended the ceremony and stated, "I formed the Congressional Mining Caucus to promote the mining industry and to educate my colleagues about the critical role the mining industry plays in our nation's strong and growing economy, to ensure the U.S. mining industry maintains a strong presence in America and increases global competitiveness through improved energy efficiency, environmental performance, health and safety conditions, and productivity."

Gibbons is a member of the House of Resources Committee, and founder and co-chair of the Congressional Mining Caucus. ACAA's mission to advance the management and use of CCPs enhances the sound technical, commercial and environmental aspects of the DOE-mining industry agreement.



Source:
Energy Information
Administration, Annual
Energy Review, 1996

New Transportation Legislation [From Transportation Builder]

On June 9, 1998, President Bill Clinton signed the long-awaited Transportation Equity Act for the 21st Century (TEA-21) into law. This landmark program reauthorization law provides a record \$217 billion in contract authority for federal investment in highway and mass transit programs through 2003. That represents a 44 percent boost in federal highway funding, when compared to the previous six-year authorization.

TEA-21 guarantees that virtually all incoming user-fee revenue in the next six years will be used exclusively to finance highway and transit improvement programs. No longer will the federal motor fuels excise tax and Highway Trust Fund be used to finance other federal priorities. Now, if federal gas tax revenue rises, so will federal surface transportation investment.

These achievements and many others in the new legislation, didn't just happen. They are the result of strong individual leadership in the Congress by members such as Representatives Bud Shuster (R-Pa.), Jim Oberstar (D-Minn.), Nick Rahall (D-W.Va.), Tom Petri (R-Wis.), Newt Gingrich (R-Ga.) and Senators John Warner (R-Va.), Max Baucus (D-Mont.), Robert Byrd (D-W.Va.), Phil Gramm (R-Texas), John Chafee (R-R.I.) and Trent Lott (R-Miss.).

Additionally, there was support from President Clinton and the nation's governors, and a well planned and concerted effort by the transportation construction industry and its allies.

ARTBA was a key player and ACAA, as a long-term member of ARTBA, had an opportunity to play a part in supporting this legislation. In February 1996,

ARTBA invited several dozen national construction-related associations and labor unions to join in forming a Transportation Construction Coalition (TCC). The TCC's mission would be to establish a common legislative agenda for the surface transportation program reauthorization and coordinated industry lobbying and communications activities on the legislation and funding issues. A number of organizations, including ACAA, answered the call.

The broad base of TCC member representation allowed it to deliver a powerful message on Capitol Hill. The TCC's unique focus and membership also allowed the expertise of different sectors of the transportation construction industry to complement each other while individual members remained free to pursue issues of special interest to them.

National Organizations Providing Financial Support to the TCC

American Road & Transportation Builders Association (TCC co-chair)
Associated General Contractors (TCC co-chair)
Laborers & Employers Cooperation & Education Trust
Equipment Manufacturers Institute
National Stone Association
International Union of Operating Engineers
American Traffic Safety Services Association
National Ready Mixed Concrete Association

American Consulting Engineers Council
American Concrete Pavement Association
American Coal Ash Association
American Portland Cement Alliance
Asphalt Recycling and Reclamation Association
International Slurry Surfacing Association
National Lime Association
National Utilities Contractors Association
Asphalt Emulsion Manufacturers
Construction Industry Manufacturers Association

Comprehensive National Energy Strategy--Report from U.S. DOE

ACAA has received a copy of U.S. Department of Energy (DOE) Comprehensive National Energy Strategy which sets forth a national blueprint to help guide the way energy is produced and used in this country. The report was prepared following deliberations among DOE and other government and private sector entities and the general public.

It establishes five common-sense goals for national energy policy and applies a new focus on this sector of our economy.

Goal I - Improve efficiency of the energy system

Goal II - Ensure against energy disruptions

Goal III - Promote energy production and use in ways that respect health and environmental values

Goal IV - Expand future energy choices

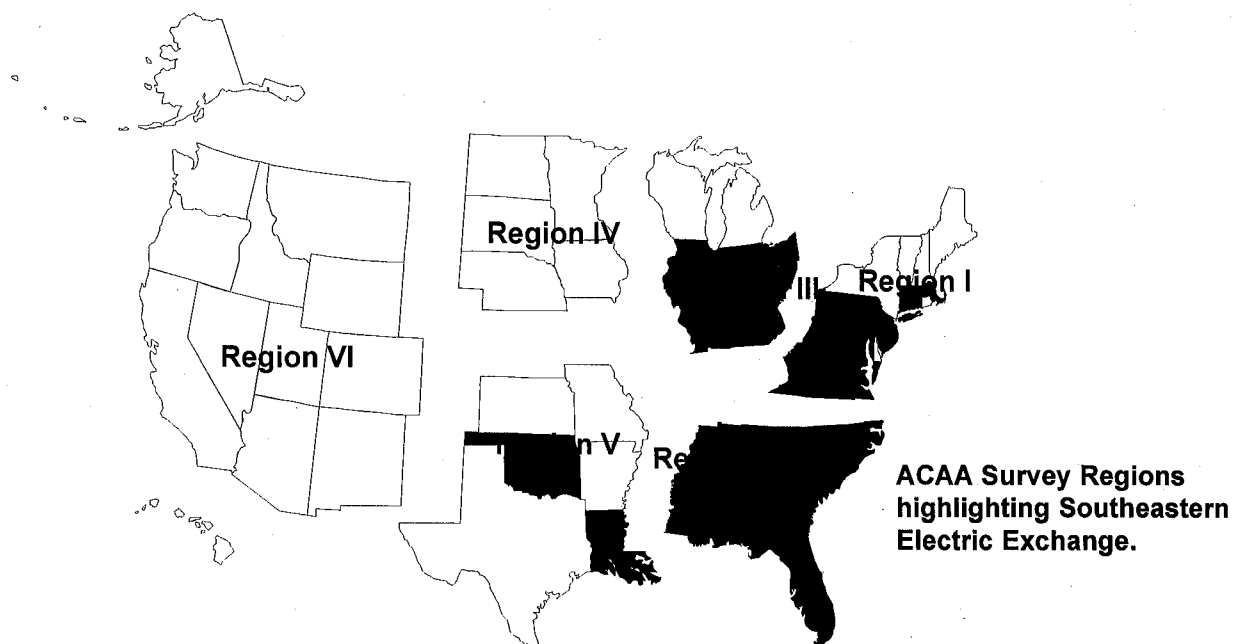
Goal V - Cooperate internationally on global issues

ACAA has developed programs and activities that are fully supportive of Goals III & V of this national energy strategy.

This document is available on DOE's Internet web site <<http://www.doe.gov>> for viewing and downloading. The DOE site can also be accessed through ACAA's Internet web site. The direct address of the Comprehensive National Energy Strategy information page is <<http://www.hr.doe.gov/nesp/cnes.html>>.

ACAA Addresses Southeastern Electric Utility Group

ACAA's Executive Director, Sam Tyson, addressed participants at the annual meeting of the Southeastern Electric Exchange, Engineering & Operation Division. The conference was held in Orlando, Florida on June 23-26, 1998. Sam attended the half-day session of the Production Section/Generation Projects on Friday, June 26, 1998, where he made his presentation, Coal Ash Use - Current Trends and Opportunities.



U.S. Environmental Protection Agency Releases Report -- Profile of the Fossil Fuel Electric Power Generation Industry

Recognition of the need to develop the industrial "sector based" approach within the U.S. Environmental Protection Agency (EPA) Office of Compliance led to the creation of this document. This Sector Notebook (EPA 310-R-97-007, September 1997) is one in a series of volumes published by EPA to provide information of general interest regarding environmental issues associated with specific industrial sectors. It addresses the fossil fuel electric power generation industry.

For a complete copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512-1800, fax (202) 512-2250. Complimentary volumes are available to certain groups or subscribers, such as public and academic libraries, Federal, state, and local governments, and the media from EPA's National Center for Environmental Publications and Information at (800) 490-9198. Electronic versions of all Sector Notebooks are available via Internet on the Enviro\$en\$e

World Wide Web at <http://es.epa.gov/comply/sector/index.html> or use www.epa.gov/oeca, select the button labeled Industry and Government Sectors and select the appropriate menu sector.

A listing of all available Sector Notebooks and document numbers are included for a number of industries. The Sector Notebook for the Fossil Fuel Electric Power Generation Industry refers the reader to ACAA for information about the management and use of CCPs.

American Society for Testing & Materials (ASTM)

ACAA staff and members who are active in the ASTM Committee E50.03 (Global Sustainability/Pollution Prevention) are reviewing a ballot on the first draft of a proposed standard, Use of Coal Combustion Product Grouts as Mine Backfill. A title change as

well as changes from CCBs to CCPs in the text was discussed at the last meeting in Atlanta.

Notwithstanding several changes, it appears that a number of negative votes will be cast for this proposed standard. The subcommittee's

next meeting will be during the September 23-25, 1998 meetings of ASTM in Austin, Texas. To join this committee, contact ASTM at <http://www.astm.org> or telephone: 610-832-9585. Contact ACAA for a draft review copy of this proposed standard.

Market News/Dam Construction [From the Portland Cement Association]

Current annual potential in the dam market was recently measured by PCA's market research department for the Public Works Committee. The survey found a potential market for the cement dam rehabilitation industry of about 1.6 million tons per year when considering public funding constraints or 11.2 million tons as the ultimate potential. The survey also calculated states holding the highest potential for cement. These potentials should apply equally to the use of coal fly ash.

The top states for high and significant hazard dams were California, Colorado, Kentucky, Missouri, North Carolina, Ohio, Pennsylvania, Texas, and West Virginia. The final phase of the analysis estimated the cement potential for newly constructed dams. The analysis uncovered a five-year average of 212 projects annually with a market potential of about 2.5 million tons. The new dam market is substantially smaller than the rehabilitation market due to the declining number of newly constructed dams. For additional information on the dam survey, contact Leslie Malmgren of PCA (E-mail: leslie.malmgren@portcement.org).

Ohio Coal Development Director Jackie Bird Honored

Jacqueline Bird, Director of the Ohio Department of Development Coal Development Office (OCDO) was recently awarded a certificate of recognition from ACAA. The certificate recognizes Ms. Bird's professional contributions through her position with OCDO to the advancement of CCP management and use. The certificate was presented to Ms. Bird by ACAA's Director of Technical Services, Barry Stewart, at an open house meeting highlighting a lagoon liner made from fixated FGD

material (see related story on page). Ms. Bird was nominated for the award by Howard Humphrey of American Electric Power, who said that Ms. Bird is a true friend to the CCP industry in Ohio.

Through Ms. Bird's involvement over the years, the OCDO has taken a leadership role in reviewing candidate projects and contributing funding to a number of highly qualified demonstration projects for CCPs such as the organization of public, private

and academic partners to fund in the amount of \$270,000 a two-year CCP pilot program aimed at diverting disposal from the state's landfills and finding markets for it. Dr. Tarunjit S. Butalia was hired in January 1998 for a key position in this program which is being administered through Ohio State University (OSU); and the support and funding for a project to produce commercial grade gypsum from scrubbers that use reagent lime.

(continued on page 13)



AEP's Howard Humphrey (far left), joins ACAA's Director of Technical Services, Barry Stewart and Jim McWilliams (far right), AEP's Vice President of Mining Engineering, as they congratulate Jacqueline Bird, Director of the Ohio Coal Development Office (OCDO).

Jackie Bird Honored (Continued from page 12)

Ohio Edison has announced plans to convert one of their coal-fired power plants to provide FGD gypsum and, ultimately, the use of the gypsum in a wallboard manufacturing facility that will be constructed at the generating plant site.

Ms Bird was also influential in obtaining a \$1.17 million grant to use CCPs to seal an abandoned coal mine and block acid mine drainage. Funding sources for this project included a broad-based coalition of public, private and academic partners that includes AEP,

the Ohio Department of Natural Resources and Reclamation, the Ohio EPA, U.S. DOE - Federal Energy Technology Center, Dravo Lime Company and OSU.

Additionally, she has been a catalyst in the development of effective communications between related agencies such as EPA and DNR in Ohio on the subject of CCP management and use. She has provided educational services to regulators and others, and has helped to organize seminars and workshops involving ACAA members and staff as key speakers for Ohio meetings.

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703-317-2400**

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703-317-2409**

**E-mail:
ACAA-Deinhart@msn.com**

PCA Offers Publication Services

The Portland Cement Association's Publication Services offers a variety of communications and publication services to PCA members and other organizations that are working to promote the use of cement and concrete.

Dale McFarlane, who has been with department since it's inception in 1990 feels that they offer "excellent service and quality", drawing on a library of information dating back to the early 1900's. "Our library is real huge - it goes back to 1916, when the association got started. We have over 100,000 images so it's a good resource."

Publication Services offers assistance in all areas of production including: Design and Illustration, Desktop Publishing, Presentation Graphics, Photography and Print Production.

For more information on PCA's Publication Services, contact: Dale McFarlane - PCA, 5420 Old Orchard Road, Skokie, IL 60077-1083. Ph: 847-966-6200 (ext 327), Fax: 847-966-9666 E-mail: dale_mcfarlane@portcement.org. PCA's Web site is <www.portcement.org>.



ACAA
INTERNATIONAL

American Coal Ash Association (ACAA)
1997 Coal Combustion Product (CCP)
Production and Use (Short Tons)

Category I - Dry, Moisture Conditioned & Compacted CCPs				
CCP Production	Fly Ash	Bottom Ash	Boiler Slag	FGD Material
	41,385,399	10,245,659	904,211	13,596,067
Subtotal-- Fly Ash, Bottom Ash, and Boiler Slag			52,535,268	
Total All CCPs				66,131,336
CCP Use				
Cement/Concrete/Grout	8,822,159	456,680	0	178,242
Flowable Fill	334,730	15,260	0	0
Structural Fills	1,473,537	388,820	42,494	91
Road Base/Subbase	1,337,615	989,369	0	175
Mineral Filler	285,580	129,683	12,307	0
Snow and Ice Control	0	445,784	10,256	0
Blasting Grit/Roofing Granules	0	88,858	702,507	0
Mining Applications	857,560	124,570	0	639
Wallboard	0	0	0	1,345,168
Waste Stabilization/Solidification	2,093,220	179,957	0	15,428
Agriculture	34,571	8,197	0	55,644
Miscellaneous/Other	250,678	346,983	30	40,959
Total Use	15,489,650	3,174,163	767,594	1,636,347
Subtotal -- Fly Ash, Bottom Ash, and Boiler Slag			19,431,407	
Total All CCPs				21,067,754
Individual Use Percentage	37.4%	31.0%	84.9%	12.0%
Cumulative Use Percentage	37.4%	36.1%	37.0%	31.9%
Category II - Pondered CCPs				
CCP Production	Fly Ash	Bottom Ash	Boiler Slag	FGD Material
	18,879,392	6,659,004	1,837,404	11,567,327
Subtotal-- Fly Ash, Bottom Ash, and Boiler Slag			27,375,800	
Total All CCPs				38,943,127
CCP Use				
Cement/Concrete/Grout	599,744	148,025	10,755	24,181
Flowable Fill	51,428	0	0	0
Structural Fills	1,403,997	995,506	42,175	0
Road Base/Subbase	79,985	297,216	792	17,622
Mineral Filler	0	1,205	96,489	0
Snow and Ice Control	0	277,831	45,802	0
Blasting Grit/Roofing Granules	0	70,891	1,586,074	0
Mining Applications	556,007	38,068	0	104,051
Wallboard	0	0	0	258,595
Waste Stabilization/Solidification	1,024,727	26,411	0	0
Agriculture	0	0	0	0
Miscellaneous/Other	111,823	67,589	29,170	142,568
Total Use	3,827,712	1,922,742	1,811,257	547,016
Subtotal -- Fly Ash, Bottom Ash, and Boiler Slag			7,561,712	
Total All CCPs				8,108,728
Individual Use Percentage	20.3%	28.9%	98.6%	4.7%
Cumulative Use Percentage	20.3%	22.5%	27.6%	20.8%

For metric equivalents, multiply tabular values by 0.9078

American Coal Ash Association
2760 Eisenhower Avenue, Suite 304 ♦ Alexandria, VA 22314-4569 ♦ USA
Phone: 703-317-2400 ♦ Fax: 703-317-2409 ♦ Internet: <http://www.ACAA-USA.org>



American Coal Ash Association (ACAA)
1997 Coal Combustion Product (CCP)
Production and Use (Short Tons)

Total CCPs - Category I (Dry) & II (Ponded)		Fly Ash	Bottom Ash	Boiler Slag	FGD Material
CCP Production		60,264,791	16,904,663	2,741,614	25,163,394
Subtotal -- Fly Ash, Bottom Ash, and Boiler Slag				79,911,068	
Total All CCPs					105,074,462
CCP Use					
Cement/Concrete/Grout		9,421,903	604,705	10,755	202,423
Flowable Fill		386,158	15,260	0	0
Structural Fills		2,877,535	1,384,327	84,669	91
Road Base/Subbase		1,417,600	1,286,585	792	17,797
Mineral Filler		285,580	130,888	108,796	0
Snow and Ice Control		0	723,615	56,057	0
Blasting Grit/Roofing Granules		0	159,749	2,288,581	0
Mining Applications		1,413,567	162,638	0	104,690
Wallboard		0	0	0	1,603,762
Waste Stabilization/Solidification		3,117,947	206,368	0	15,428
Agriculture		34,571	8,197	0	55,644
Miscellaneous/Other		362,501	414,572	29,200	183,527
Total Use		19,317,362	5,096,905	2,578,851	2,183,363
Subtotal -- Fly Ash, Bottom Ash, and Boiler Slag				26,993,119	
Total All CCPs					29,176,482
Individual Use Percentage		32.1%	30.2%	94.1%	8.7%
Cumulative Use Percentage		32.1%	31.6%	33.8%	27.8%

For metric equivalents, multiply tabular values by 0.9078

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13th International Symposium is Taking Shape

Innovation for a Sustainable Future, the theme of ACAA's 13th International Symposium on Management & Use of Coal Combustion Products (CCPs) is still over a half year away but to ACAA staff, much of the symposium is already taking shape. Over 8,000 flyers have been sent to members of the CCP industry worldwide.

The Symposium, sponsored by the American Coal Ash Association and the American Coal Ash Association Educational Foundation will be held January 11 - 14, 1999, at Walt Disney's Coronado Springs, Resort Hotel, Orlando, Florida. Attendance is expected to exceed 500 participants.

To date, over 100 abstracts have been received. ACAA's Director of Technical Services, Dr. Barry Stewart, said that ACAA "is on target for well-over 100 presentations" and added that "this group of abstracts is very good." For the first time, ACAA will be offering authors the opportunity to present their papers in poster sessions. Also new for 1999, winners of ACAA's Educational Foundation John Faber Scholarship will be featured in a student session. On Monday, January 11, 1999, special industry seminars are being planned on a wide variety of topics.

Abstracts are being reviewed by a committee made of ACAA members who must "grade" the

abstracts on ten separate areas to assure that the abstracts are acceptable for presentation and publication. Final manuscripts must be prepared to meet the proceedings format of the Electric Power Research Institute (EPRI). Instructions on the EPRI format for both hard copy and electronic formats will be sent to authors upon acceptance of abstracts.

Only authors with approved manuscripts will be scheduled for presentations at the Symposium. A list of suggested paper topics is located on ACAA's Home Page: <http://www.ACAA-USA.org>. For more information on publication and presentation at the 1999 symposium, contact Dr. Stewart.

ACAA will welcome as many as 32 exhibitors on a first call basis. The fee is US\$ 1,400 and this fee includes one registration. All exhibit personnel must be registered for the symposium. The Exhibit Hall hours have been expanded for the 1999 Symposium and will be open during all sessions. Drawings for prizes throughout the week in the Exhibit Hall and the Opening Night Reception, on Monday, January 11, 1999 will also be held there.

Also scheduled for Monday, January 11, preceding the opening reception, is The Second ACAA Educational Foundation Golf Tournament.

The tournament returns to the picturesque and challenging Lake Buena Vista Course. A variety of sponsorship opportunities are available for individuals and companies.

Proceeds from the tournament will benefit the Educational Foundation's John Faber Scholarship program.

A special Walt Disney World program is being organized for spouses. Spouses are also welcome at all Symposium functions including the Opening Reception and Banquet.

For more information about ACAA's 13th International Symposium, Contact ACAA..

Hotel Information

ACAA's 13th International Symposium on Management and Use of Coal Combustion Byproducts (CCBs)

Disney's Coronado Springs Resort

1000 West Buena Vista Blvd
Orlando, Florida 32830

Reservations: 407-939-1020
Guest Tel: 407-939-1000
Guest Fax: 407-939-1001

Room Rate: \$US 125.00
Single or Double Occupancy

Symposium Registration Form

- ☐ Register me/us for ACAA's 13th International Symposium
☐ Reserve my/our exhibit space at ACAA's 13th International Symposium
 Name of registrant covered by exhibit fee: _____
☐ Please send me information about sponsorship and participation in golf tournament to benefit ACAA's Educational Foundation.

Registration Fees

	Member	Non-Member
1 - 2 registrants	US\$ 450	US\$ 650
3 - 4 registrants	US\$ 425	US\$ 625
5 or more registrants	US\$ 400	US\$ 600
Speakers	US\$ 400	US\$ 400

Student Fees: US\$ 95 for full-time undergraduate and graduate students.

Spouse Program: US\$ 95. A special Disney program is being provided for spouses. Spouses are also welcome at all Symposium functions including the Opening Reception (Monday evening); and Banquet (Thursday evening).

Organizations sending six (6) or more registrants should contact ACAA for additional discounts. Single-day registrations are not offered. For more information on registration, please fill out the form below.

Items provided for registration fees: **Attendance at all Sessions; Entrance to Exhibit Area; Published Proceedings Volumes; Opening Reception (Monday evening); and Banquet (Thursday evening).**

Name (Please Print): _____ (Spouse Name) _____

Company: _____

Address: _____

City: _____ State: _____ Postal/Zip Code: _____ Country: _____

Phone: _____ FAX: _____ E-Mail: _____

of Registrants: _____ Registration Fee (see above): _____ Exhibit Fee: **US\$ 1,400**

☐ Spouse Program **US\$ 95** ☐ Student Program **US\$ 95** **TOTAL** _____

☐ Check enclosed ☐ Charge to VISA ☐ Charge to Master Card

Charge to Card # _____ Expiration Date: _____

Name of Cardholder: _____ Signature: _____

Return form to ACAA - 2760 Eisenhower Avenue, Suite 303 - Alexandria, VA 22314-4569

ACAA's 13th International Symposium Session and Exhibit Information

Sunday January 10, 1999		Session Information	Exhibit Information
	P M		Set-up 4 pm to 12 midnight
Monday January 11, 1999	A M	Workshops 9 am - 5 pm	Set-up Begins 8 am
	P M	Opening Reception held in Exhibit Hall 5:30 pm - 7:30 pm	Set-up Ends 2 pm Reception - 5:30 pm - 7:30 pm
Tuesday January 12, 1999	A M	Opening Session 9 am Worldwide Ash Council 11 am	Exhibit Hall Opens 11 am
	P M	Poster Presentations and Sessions 2 pm - 5 pm	Exhibit Hall Closes 7 pm
Wednesday January 13, 1999	A M	Poster Presentations and Sessions 9 am - 12 noon	Exhibit Hall Opens 8 am
	P M	Poster Presentations and Sessions 2 pm - 5 pm	Exhibit Hall Closes 6 pm
Thursday January 14, 1999	A M	Poster Presentations and Sessions 9 am - 12 noon	Exhibit Hall Breakdown 8 am - 12 noon
	P M	Poster Presentations and Sessions 2 pm - 5 pm	Reception & Banquet 6:30 - 10 pm

Directions to Disney's Coronado Springs Resort Hotel

From Orlando Airport - Take the South exit from the airport to Highway 417 South. Stay on 417 west for approximately 15 miles (go through 2 toll plazas). Merge onto Highway 536. Pass under Disney's "welcome arch" and take the second exit, Lake Buena Vista Drive. Follow signs past Disney-MGM Studios to Walt Disney's Coronado Springs Resort Hotel, located at: **1000 West Buena Vista Drive - Orlando, Florida USA.**

Reservations: 407-939-1020; Phone: 407-939-1000; Fax: 407-939-1001

Foundation Golf Outing - January 11th 1999

"Drive for show...and help raise some dough."

The Tournament

The Second ACAA Educational Foundation Golf Tournament is set for Monday, January 11, 1999 at Walt Disney World's Lake Buena Vista Course.

Special thanks go to ACAA member, **MINERAL SOLUTIONS, INC. (ACAA representative Larry Bacon)** a Silver Sponsor for the tournament.

Sponsorship levels are:

- \$5,000 *Gold*
- \$3,500 *Silver*
- \$1,500 *Bronze*

Sponsorship Benefits Include: Listing in the symposium program; hole sponsorship signs; recognition at opening reception and banquet; logo placed on ACAA's Internet web site; advertisement in ACAA's symposium program booklet; exhibit hall signs throughout the four-day symposium.

Proceeds benefit the John H. Faber Scholarship Program Sponsorship Opportunities are still available.

For more information, contact ACAA's Earline Marshall at 703-317-2400 or fax at 703-317-2409 or print and fill out the sponsorship form and mail it to ACAA with your check.

(See page 20.)

The Scholarship

A new chapter in the history of coal ash and education has been written with the development of the John H. Faber Scholarship Program, administered by the American Coal Ash Association Educational Foundation.

In August 1997, the ACAA Educational Foundation's Scholarship Committee selected five students to be the first recipients of scholarship awards. In the Spring of 1998, nine scholarships were awarded.

The scholarships are awarded to help advance each students knowledge of technically sound, commercially competitive and environmentally safe management and use of coal combustion products (CCPs).

Joel Pattishall, Chairman of ACAA Board of Directors is pleased with the progress of the program to date adding that "the scholarship program helps to ensure the future vitality of our industry."

Students who are judged to have produced outstanding results for either research papers or semester projects, through the fall of 1998, will be invited to publish and present their topics for a session at the Thirteenth International Symposium.

The Format

The Tournament format will be 4-player, "captain's choice" and will be organized on-site by ACAA staff and ACAA's Golf Tournament Task Force Chairman, Tracy Wandell. The US\$135.00 golf registration fee will cover greens fee, cart, scoring service and round-trip shuttle service from the hotel. There will be a "shotgun start" promptly at 12:30 pm. All pairings will be made by the tournament director and will be based on your declared handicap. To register for the tournament, please fill out the form on page 20.

Following the tournament, a golf reception will be held in the exhibit hall at the Coronado Springs Resort Hotel, in conjunction with the opening of the symposium.

The golf tournament is a major source of funding for ACAA's Educational Foundation. Your sponsorship will sustain the vital work of the John H. Faber Scholarship program and other Educational Foundation programs. Your golf sponsorship may be deductible for tax purposes.

Symposium attendance is expected to reach 600, with over 20 countries represented. For more information on the Symposium, see pages 16-18.

The Second ACAA Educational Foundation Golf Tournament
Monday, January 11, 1999
Walt Disney World's Lake Buena Vista Course

Select Sponsorship Level

\$ _____ *

Gold Sponsor	\$5,000
Silver Sponsor	\$3,500
Bronze Sponsor	\$1,500

Sponsorship Benefits: Listing in the symposium program/ Hole sponsorship signs/
 Recognition at opening reception and banquet/ Logo placed on ACAA's Internet Home Page/
 Advertisement in Symposium program booklet/ Exhibit hall signs throughout the symposium.

Name: _____

Organization: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ E-mail: _____

Sign up to play! (Fill out the form below to play in the tournament.)

Name: _____

Organization: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ E-mail: _____

Circle handicap: A (0-10 strokes) B (11-15 strokes) C (16-20 strokes) D (20 plus strokes)

No. of Golfers _____ @ \$135.00 Total: \$ _____. Also, I wish to make an additional donation to
 the ACAA Educational Foundation in the amount of \$ _____ for a Grand Total of: \$ _____

*Pay by: _____ Check _____ Visa _____ MasterCard

Card Number: _____

Expiration Date: _____ Signature: _____

Please copy this form and return it with your payment to ACAA 2760 Eisenhower Avenue, Suite 304
 Alexandria, VA 22314-4569. For more information, see ACAA's Internet web site:
 <[http:// www.ACAA-USA.org](http://www.ACAA-USA.org)>.

Fees for golf and tournament sponsorship may be deductible for tax purposes.

ACAA Educational Foundation Awards Scholarships

The ACAA Educational Foundation has announced that five scholarship applicants in the John H. Faber Scholarship Program have completed their projects by submitting satisfactory final reports. Each student was working on a semester project for which an initial award of \$300 had been made during the 1997-1998 academic year.

After the successful completion of each project, demonstrated by submittal of a written report judged to be satisfactory by the Foundation's Scholarship Committee, and a letter of approval from the student's academic advisor, each student received a final award in the amount of \$2,200 from the ACAA Educational Foundation.

In addition to the monetary awards, each student and their advisors received a copy of the hardcover book, *Coal Ash -- Innovative Applications of Coal Combustion Products*, published in 1998 by ACAA with cooperation from the Foundation.

The semester projects and related reports completed by these five students to satisfy the requirements of the John

H. Faber Scholarship Program were:

Use of Electron Beams for the Manufacture of Fertilizer from Coal Combustion Flue Gases, by Howard Hess under the direction of Dr. Jan Pels, Department of Materials Science and Engineering, Pennsylvania State University;

Influence of Natural Weathering and Plant Growth on the Form and Biological Availability of Trace Elements in Coal Fly Ash and Fly Ash Amended Soils, by Jessica Townsend under the direction of Dr. Tom Sims, Department of Plant and Soil Sciences, University of Delaware;

An Evaluation of Autoclaved Cellular Concrete Mix Design, by Jason Videtti under the direction of Dr. John Oyler, Civil and Environmental Engineering Department, University of Pittsburgh;

In-Situ Remediation of Anaerobic Mine Areas with Coal Combustion Products (CCPs), by Reynaldo Gonzales under the direction of Dr. Jess Everett, School of Civil Engineering and Environmental Science, University of Oklahoma; and

Using Class F Fly Ash and Cenospheres in Concrete, by Steve Thomas and Kevin Wolf (shared award) under the direction of Dr. Mumtaz Usman, Department of Civil and Environmental Engineering, Wayne State University.

The Foundation's Scholarship Committee was chaired by Oscar Manz, ACAA Honorary Member; Mike Schroeder of Solutions Management; Scott Renninger and Bill Aljoe, USDOE-FETC; Sam Tyson, President of the ACAA Educational Foundation; and Barry Stewart, ACAA's Director of Technical services.

In addition to reviewing all of the project proposals, draft reports and final reports, Barry Stewart served as the principal staff coordinator for all communications with the students, their faculty advisors and the members of the Scholarship Committee.

Applications and other information about the ACAA Foundation's scholarship program can be found on ACAA's Internet web site at <<http://www.ACAA-USA.org>> or from Director of Technical Services, Barry Stewart, at E-mail: coalash@erols.com.

Joint ACAA/ECOBA Meeting in Toronto a Success

ACAA's June 14-17, 1998 workshop and committee meetings in Toronto, Canada were attended by some 100 participants from the USA, Canada and European countries represented by ACAA member ECOBA.

The joint workshop was a great success as can be seen by the letter of thanks from ECOBA Secretary General, Dr. Wolfgang Vom Berg.

The success of this meeting lends support for developing a Worldwide Coal Ash Council, as proposed by ACAA's Chairman Joel Pattishall. The initial meeting of the Council is slated for Tuesday, January 12, 1998, in Orlando, Florida.
(See page 2 - Tyson's Corner for more on the Worldwide Coal Ash Council.)

American Coal Ash Association
Mr. Joel Pattishall
2760 Eisenhower Avenue, Suite 304
USA - Alexandria, Virginia 22314

ecoba

Dear Mr. Mr. Pattishall,

On behalf of ECOBA, I would like to thank ACAA and especially you and the ACAA staff very much for the excellent hospitality and management work at the Joint workshop and ECOBA General Assembly meeting.

The Joint meeting was a big step forward to promote the exchange of experience and intensify the cooperation between our two associations. It was an excellent opportunity to present the state of the art in CCP utilization in the US and Europe to all our members. Interesting enough it demonstrated that despite the geographical distance the situation and problems of utilizing CCPs are quite similar. The joint round table discussion confirmed the interest on both sides to intensify our cooperation.

For all ECOBA representatives it was a pleasant and interesting stay in Toronto and we look forward to welcoming you at our next General Assembly meeting in November in the UK.

Sincerely yours,

Dr. Wolfgang Vom Berg
Secretary General



**(Photo - left)
A tour of
Niagara Falls
was arranged by
ACAA for
spouses and
guests attending
the Toronto
meetings.**

Open House Highlights CCP Liner for Lagoon ACAA is Active as Advisor and Sponsor

A pond lined with a CCP from a local power plant was the site of an open house on August 7, 1998 at the Western Branch of the Ohio Agricultural Research and Development Center in South Charleston, Ohio. Over 100 interested parties with a wide variety of interests in CCP management and use attended the program.

Scientists from OSU and OCDO discussed the ongoing research which involves the use of FGD material as a liner for ponds which could serve as holding facilities for animal manure, and as recreational ponds and wetlands. Laboratory and field testing have shown that FGD material resists the flow of water much like clay. However, in the state of Ohio, good clay is not always abundant, and can therefore be expensive to buy and transport.

"In Ohio, coal-burning power plants annually produce four to six million tons of FGD that must be stored or disposed in landfills. By developing ways to recycle this CCP, we help the environment, rate payers, utilities and end users like farmers," said Dr. Tarunjit Butalia, Ohio State

researcher and CCP coordinator. According to Dr. William Wolfe, Associate Professor in the Department of Civil and Environmental Engineering and Geodetic Science, "It's a good time to discuss the project's progress because we are ready to begin the second phase of testing, which involves filling the facility with animal manure and testing the performance of the FGD-lined facility for at least one more year." The pond currently holds water, but will be filled with manure in time for the 1998 Farm Science Review in September 1998.

"This project and others like it are proving that CCPs can serve as low-cost raw materials for value-added products and applications," said OCDO Director Jacqueline Bird. "Diverting and recycling some of this material from costly landfills to productive applications saves money and also helps to improve the environment."

At the open house, Dr. Butalia presented an overview of the statewide CCP pilot "extension and technology transfer program" established at OSU with help from OCDO and others. The use of CCPs for highways

and other civil engineering applications, as well as for mine reclamation and agricultural applications, were discussed.

The CCP pilot extension program, overseen by Dr. Butalia, is an effort to move CCP utilization technologies and processes from the research and development phases into the marketplace in ways that are technically sound, environmentally safe and commercially competitive. The current extension program began in January 1998, and will operate for two years.

The Ohio Environmental Protection Agency has already approved FGD for constructing livestock feed lot and hay storage pads. "Last year 24 FGD pads ranging in size from 1,500 square feet to 15,000 square feet were constructed in southern and eastern Ohio using FGD. More than 100 such pads are expected to be installed this year," said Dr. Butalia.

ACAA is among the sponsors for this research; and, ACAA's Director of Technical Services, Barry Stewart, serves on the Advisory Panel for this impressive project.

Workshop on Flowable Fill Held in Wisconsin

A workshop and field demonstration of flowable slurry containing coal fly ash, used foundry sand, and other recyclable products was held on August 28, 1998, by the University of Wisconsin's Milwaukee Center for By-Products Utilization at Port Washington, Wisconsin.

The workshop included a demonstration of flowable fill made with coal fly ash being placed. Workshop presenters included Tarun Naik of UWM CBU, Bruce Ramme and Trent Kohl of Wisconsin Electric Power,

LaVern Weber of Engineered Fill Systems/Mineral Solutions, Frances McNeal of Master Builders, Bizhan Zia Sheikholeslami of UWM & Barry Stewart of ACAA.

Coincidentally, the meeting was held one day after the U.S. EPA released its notice that flowable fill containing coal fly ash or foundry sand is recommended to become a listed product for federal procurement within EPA's comprehensive procurement guidelines. Flowable fill with fly ash has a high potential for increased usage, and its

potential applications are limited only by the imagination.

Some market estimates have concluded that for every 10,000 people in an urban/suburban area, some 500 tons of fly ash can be used in flowable fill applications each year.

Documents describing the use of flowable fill containing coal fly ash are available from ACAA and from Dr. Naik, Center for By-Products Utilization, P.O. Box 784, Milwaukee, WI 53201.

EPA Docket for Flowable Fill Open Until 10/26/98

The U.S. EPA has developed recommendations for procuring agencies to use flowable fill containing coal fly ash as noticed in the Comprehensive Guideline for Procurement of Products Containing Recovered Materials (CPG) [Federal Register, Vol. 63, 45558, August 26, 1998], U.S. EPA, Proposed rule; and in the related Recovered Materials Advisory Notice III (RMAN) [Federal Register, Vol. 63, 45580, Aug. 26, 1998], U.S. EPA, Notice of draft document for review.

ACAA first proposed the incorporation of flowable fill

containing coal fly ash into the CPG and RMAN in a letter of February 28, 1996 to U.S. EPA's Office of Solid Waste. We proposed at that time that controlled low strength material (CLSM), or flowable fill, containing coal fly ash be included in the CPG and RMAN to provide guidance to procuring agencies for the purchase of recovered materials.

ACAA is pleased that EPA's current Federal Register notices are out for comment and that the ultimate effect will be an increase in the use of flowable fill containing coal fly ash. ACAA members are

encouraged to make supportive comments to EPA during the comment period which ends on October 26, 1998.

ACAA members and others in the CCP industry are encouraged to take advantage of this opportunity to expand use of coal fly ash in federally funded projects. Please contact ACAA's Barry Stewart or Sam Tyson with any questions or comments about the actions that are needed with respect to EPA's Federal Register notices concerning the procurement of flowable fill containing coal fly ash.

Fly Ash for Low Permeability Concrete [From VA Transportation Research Council]

Reinforced concrete structures exposed to the environment require durable concrete to provide long-lasting performance with minimal maintenance.

Low permeability is an important characteristic of durable concrete and may be obtained by lowering the water-cementitious material ratio (W/CM) and using pozzolans (fly ash and silica fume) or slag as a portion of the cementitious material.

ACAA is pleased to see that this report provides useful recommendations to highway officials concerning the successful application of fly ash in concrete. It notes that the low permeability expected in pozzolanic systems may take months to develop, during which time the concrete could be subjected to aggressive, deleterious solutions.

Similarly, in cold weather, the required 28-day strength could be delayed when pozzolan or

slag replace some percentages of the portland cement.

To obtain a copy of the full report, contact Ms. Eileen Dieck (Fax: 804-293-1990) and ask for: Effects of Temperature on the Development of Low Permeability in Concretes [VTRC Report No. 98-R14].

You may contact the principal research scientist, Mr. Celik Ozyildirim, at VTRC, 530 Edgemont Road, Charlottesville, VA 22903.

ACAA Member News - Woodward-Clyde

ACAA member, Woodward-Clyde, has become a part of URS Greiner Woodward-Clyde which provides professional planning, engineering and architectural design, and program and construction management services for projects involving surface and air transportation, commercial and industrial facilities, mining

complexes and dams and municipal water and wastewater facilities.

In addition, they offer a full range of environmental services including environmental management, pollution control, natural resource management, and solid and hazardous waste management.

Utilizing staff resources of over 6,200 employees in a network of 150 offices worldwide, URS Greiner Woodward-Clyde serves a variety of public sector clients at the local, state and federal level, and private sector clients in the oil, natural gas, chemical, forest products, mining, power and manufacturing industries.

New ACAA Promotional Video Set for Distribution

ACAA's new promotional video, ACAA- 30 Years Leading and Serving the CCP Industry has been completed and is now available to members and to potential members of ACAA. The six minute video, created from over six hours of raw footage, touches on the many programs and benefits of ACAA membership. ACAA's Executive Director Sam Tyson, Chairman Joel Pattishall and several ACAA members provide commentary throughout the video.

ACAA's Communications Coordinator Gregg Deinhart completed this milestone project on schedule and within the specified budget limitations. Deinhart noted "This video is a concise and effective way to remind current members, and to inform potential members, of the many things ACAA and it's members have accomplished during the last three decades. It summarizes the benefits of membership in ACAA, and is a valuable tool for membership retention and recruitment."

TRI Workshop October 5, 1998 in Atlanta - Schedule of Events

Contact ACAA staff or see Internet web site for more Information: www.ACAA-USA.org

7:30 am to 8:30 am Registration

8:30 am to 9:45 am Introduction and Background

EPCRA and TRI explained, EEI and USWAG efforts outlined, TRI reporting, industry compliance, chemicals reported, quantities of chemicals "released", how are land releases reported to EPA and the public. Form and occurrence of chemicals, and their environmental availability in coal combustion products (CCPs).

Guy Cerimele, American Electric Power

Barry Stewart, ACAA

10:30 am to 10:45 pm ♦ Break

10:00 am to 12:00 pm ♦ Communicating About TRI and CCPs

How to Communicate information about CCPs in a Low Trust/High Concern Environment
Why the Science, Facts and Data about CCPs are Less Important in These Type of Communication than other factors, and What To Do About It.

CCP Risk Distortion Factors - What Factors Escalate Risks in the Minds of the Public, and How to Overcome Those Factors.

How to Use Third Party Support for CCPs to Raise Your Credibility.

Keith Fulton, Communications Consultant, Fulton Communications

12:00 pm - 1:00 pm ♦ Lunch

1:00 pm - 2:30 pm ♦ Communicating with an Angry Public

How to Handle the Most Difficult Question You Can Get About TRI and CCPs.

How to Deal with Activists and Hostile Environmentalists and Individuals.

Keith Fulton, Fulton Communications

2:30 pm - 2:45 pm ♦ Break

2:45 pm - 4:30 pm ♦ Understanding your Audience

Community Profiling.

The Value of Public Meetings about CCPs and TRI and How to Conduct Them.

The Difference Between Communicating with General Public Versus the Media.

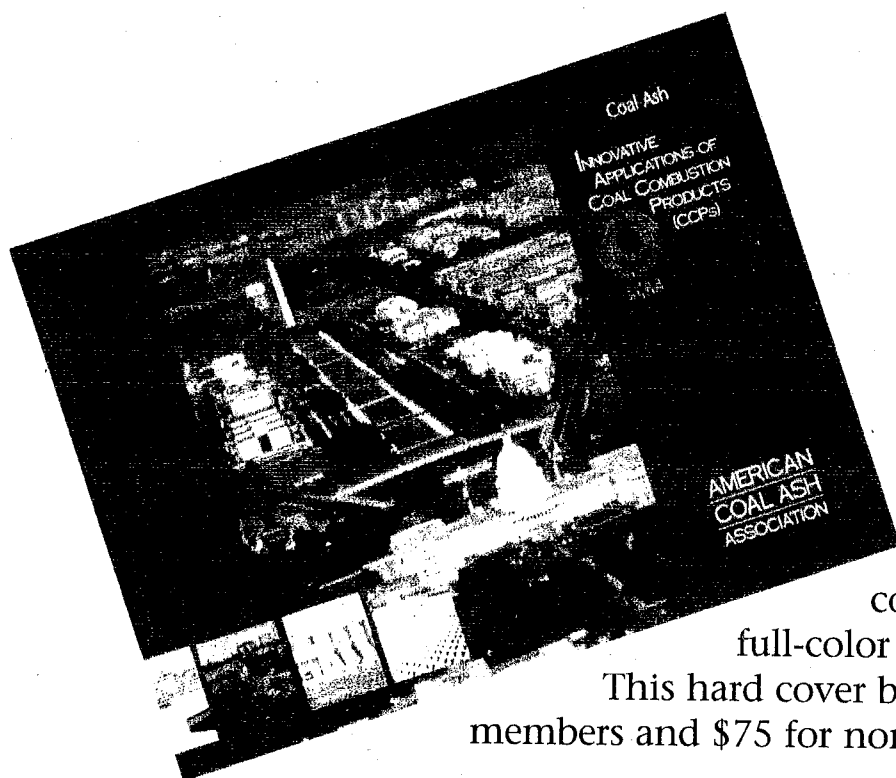
Keith Fulton, Fulton Communications

4:30 pm - 5:00 pm ♦ ACAA Communications Needs/Tools

ACAA's role in TRI - Group discussion facilitated by **Keith Fulton**

5:00 pm - 6:00 pm ♦ Open Time

6:00 pm - 7:30 pm ♦ Reception for Workshop Registrants



Coal Ash

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ACAA's *Coal Ash, Innovative Applications of Coal Combustion Products (CCPs)*, tells the story of coal ash using a wide range of full-color photographs and informative text.

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PHONE: 703-317-2400 FAX: 703-317-2409 INTERNET: [HTTP://WWW.ACAA-USA.ORG](http://www.ACAA-USA.ORG)**

ACAA Calendar 1998 - 1999

October 5-6, 1998

Committee Meetings and TRI Workshop
Atlanta, Georgia

Swissotel

3391 Peachtree Road NE
Atlanta, Georgia 30326
For Reservations: 1-800-253-1397
Guest Tel: 404-365-0065
Guest Fax: 404-365-8787
Room Rate: \$US 159.00 Single or Double Occupancy

Holiday Inn Buckhead Hotel

3377 Peachtree Road NE
Atlanta, Georgia 30326
For Reservations: 1-800-465-4329
Guest Tel: 404-264-1111
Guest Fax: 404-233-7061
Room Rate: \$US 109.00 Single or Double Occupancy

January 11-14, 1999

**ACAA's 13th International Symposium on
Management and Use of Coal Combustion
Products (CCPs)**
Orlando, Florida

Disney's Coronado Springs Resort

1000 West Buena Vista Blvd
Orlando, Florida 32830

Reservations: 407-939-1020
Guest Tel: 407-939-1000
Guest Fax: 407-939-1001
Room Rate: \$US 125.00 Single or Double Occupancy

Send Your News to ACAA

ACAA is in the process of gathering information for the next issue of Ash at Work and we need your help. If ACAA members have news concerning the management and use of CCPs, please submit it to ACAA. News or story ideas can be sent to ACAA via E-mail, fax or mail. If you have information in electronic format, send it on a disc in Microsoft Word or WordPerfect format.

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