Symposium Registration Exceeds 300

ATLANTA, GA—More than 300 have pre-registered for the Fifth International Ash Utilization Symposium opening here on February 25, according to Co-Chairman John H. Faber. Overall attendance is expected to reach 400-500, he added.

The two-day program, covering a wide-range of topics on ash technology, is being held at the Atlanta Hilton.

Twenty-five percent of the 71 papers to be presented at the symposium will document ash applications in nine foreign countries. These nations include the United Kingdom, Australia, Canada, India, Belgium, Saskatchewan, Yugoslavia, Romania, and the U.S.S.R.

A special feature of the ash conference will be two luncheon programs whose speakers will address topics of extreme importance to attendees—liability and resource recovery.

The two speakers are George P. Graves of American Alloy Steel, Inc. and Ms. Penelope Hansen of the Environmental Protection Agency. Graves’ will discuss “Ash Liability in Cement Replacement” and Ms. Hansen will review “Guidelines for Government Procurement of Waste By-Products.”

Graves has been involved in the field of ash handling for 10 years in Georgia, Colorado, Iowa, Mississippi, North Carolina, and Kansas. The EPA official is actively engaged in developing an awareness program within the Federal government on the use potential of various industrial by-products including power plant ash.

Also, two papers touching on environmental considerations will be presented by Dennis L. Kinder of American Electric Power Service Corporation and Bruce Boggs of AMAX Resource Recovery Systems, Inc.

Kinder, who is a member of the Utility Solid Waste Activities Group (USWAG), will review the impact of proposed RCRA Regulations on the ash industry and Boggs will cover the environmental aspects of ash disposal.

The NAA director stated the proposed new regs represent the most challenging crisis that has ever faced the ash industry.

“We must prevent an overkill by the environmentalists,” Faber asserted. “We need to continue our clean-up efforts, but let’s do so from a position of reason and knowledge,” he added.

Session Chairmen

(See SYMPOSIUM, Page 4)

Allan W. Babcock, Session A
Ronald E. Morrison, Session B
Robert J. Collins, Session C
Robert J. Morrison, Session D
William E. Morton, Session E
John P. Capp, Session F
WASHINGTON, DC—Early next month, on March 8 to be exact, the National Ash Association will conclude its 11th year of operation and 10th full year of service.

It is particularly relevant to note the anniversary on the eve of the Fifth International Ash Utilization Symposium in Atlanta as the trade association was the outgrowth of discussions at the first technical symposium held in Pittsburgh in March, 1967.

Additionally, no resume of NAA activities would be complete without incorporating the role of its only director—John H. Faber. Big John, as he is affectionately called by his associates, joined the association in May, 1968 and has been responsible for its day-to-day activities ever since. In fact, you might say he has devoted every waking moment to its activities.

The first steps toward the formation of the National Ash Association took place immediately following the Symposium. Early prime movers in this effort were Dr. Harry Perry of the U.S. Bureau of Mines, Leonard Bradley of the National Coal Association, Herbert Cohen of American Electric Power Co., James Williamson of Dayton Power & Light Co. (then serving as chairman of EEL’s Prime Movers’ Fuel and Ash Handling Subcommittee.) Ronald E. Morrison of American Electric Power Co., and Gerard C. Gambs of Consolidation Coal Company.

...has done a tremendous job...

More than 50 representatives of coal companies, electric utilities, and railroads attended the organizational meeting in October 1967.

Gambs, now affiliated with Ford, Bacon & Davis in an executive capacity, recollected that “John came into the organization and got it started under most difficult circumstances and has just done a tremendous job of promoting ash utilization in this country.”

“The very fact that most states have now adopted ash specification standards is one measure of the effectiveness of NAA’s program,” he added. Gambs related that back in 1968, Alabama was the only state that “permitted its use or had ever given it serious consideration.”

The spokesman further opined Faber’s leadership in staging technical conferences throughout the world has given added stature to the organization.

The Association was incorporated here on March 8, 1968. The first meetings establishing the NAA followed in April.

Faber was named Executive Director and joined the team in May. His work in staging the aforementioned symposium was largely instrumental in his selection over the other candidates.

One of the primary objectives of the NAA was, and still is, to spread “the word” on how these coal by-products can be effectively blended with or substituted for conventional aggregates in many building components and construction applications.

“Although some may disagree, I think we have been moderately successful in promoting the expanded use and acceptance of coal ashes,” Faber asserted.

The NAA executive, who refers to himself as a “plain old country boy,” has steadfastly opposed the use of “gimmicks” in advertising and promotion. “We feel the benefits of our products are genuine and that we can back them up technologically; and if the use has not been proven, we will not promote it,” Faber related.

In fact, the willingness of the National Ash Association to share its technology with others has probably contributed to the lack of financial support from potential dues paying members.

Many firms, who could well afford to become affiliated with the association have free loaded on the NAA by attending seminars and meetings and contacting individual members to solicit research data and hard won experience; many times, without so much as a thankyou. Other unscrupulous individuals have garnered information the same way and sold it for a profit.

And, conversely, many non-members have shared their test results and expertise in ash utilization with the rest of the world through the National Ash Association.

John Tillinghast, Vice Chairman-Research for American Electric Power Company and the first president of the NAA, stated unhesitantly “We picked the right man in Faber to get the organization moving.”

“The National Ash Association, under John’s direction, has created a public awareness of ash that has materially increased its use and acceptance,” Tillinghast added.

...we picked the right man...

Always maintaining a low profile, Faber has quietly convinced researchers in the academic, private and governmental sector the physical and chemical properties of these coal by-products merit a closer examination. Today, ash has been accepted as a construction material by the U.S. Department of Transportation for highway and airport construction. Most state highway departments have also incorporated ash in their specification handbooks.

The NAA executive is a trusted and active member of many American Society for Testing and Materials (ASTM) and Transportation Research Board committees. He is often called upon to review technical proposals prior to their approval for Federal funding.

As a result the association has been established and recognized as the leading exponent of ash technology. Users and producers alike keep the NAA phone humming for information.

If reason prevails in the final enactment of RCRA regulations by the Environmental Protection Agency it would appear that interest in the recycling of coal ash will continue to increase. And much of the credit for laying the foundation for this belief has to be given to Mr. Ash—John Henry Faber.
Resume of Major NAA Activities, 1968-1978

Listed below are some of the major activities of the NAA over the past decade:

1968
- Opened office and headquarters.
- Hired assistant director.
- Initiated advertising program.
- Sponsored field demonstration at fly ash brick pilot plant at West Virginia University.
- Participated in UN sponsored meeting in Prague, Czechoslovakia on ash utilization;

1969
- Paper on fly ash mineral wool research presented at AIME Annual meeting in Washington;
- Published first edition of newsletter, ASH AT WORK; NAA President discussed “Role of National Ash Association in the Ash Utilization Industry” before American Power Conference;

1970
- Co-sponsored Second General Conference on Ash Utilization in Pittsburgh;
- In co-operation with CEGB sponsored a tour to United Kingdom and France to study ash utilization programs, projects, and utilization.
- Conducted first regional seminar on ash utilization in St. Louis;
- Staff members elected to ASTM committees at latter’s annual meeting;
- Underwriters’ Laboratories, Inc approved results of fire endurance tests on concrete blocks with fly ash lightweight aggregate sponsored by the NAA.
- Participated in UN meeting of ash experts in Ankara, Turkey. Faber chaired opening session.
- Held First Annual Technical Meeting.

1971
- Sponsored tour of gas concrete manufacturing facilities and construction projects in England, Germany, and Denmark;
- Conducted tours of lightweight aggregate plants in Virginia and North Carolina;
- Held regional seminar in Buffalo, NY;
- Co-sponsored conference on lignite fly ash utilization with North Dakota Highway Department and ND’s College of Engineering; Addressed 24th Annual Short Course of the Midwest Ready Mixed Concrete Association on “Effective Uses of Fly Ash.”
- Conducted Second Annual Technical Meeting. Initiated publication of a series of Technical Bulletins;

1972
- Participated in demonstration project using fly ash-sulfate sludge basemix at a parking area at Dulles Airport for Transpo-72.
- Presented papers at roadbuilding seminars at Toledo, OH and Springfield, Ill.
- Conducted Third Annual Technical Meeting.
- Participated in demonstration sanitary landfill project at Morgantown, WV to evaluate effectiveness of fly ash in solid waste disposal;

1973
- Co-sponsored Third International Ash Utilization Symposium at Pittsburgh, PA.;
- Served as panelist at first progress review of the Federally Coordinated Program of Research & Development in Highway Transportation in San Francisco and at Electrical World’s Management Conference on Waste Disposal in Chicago;
- Cooperated with Iowa State University’s Engineering Research Institute on a soil stabilization project in Linn County, Iowa;
- Held Fourth Annual Technical Meeting at Toronto, Ontario, Canada;
- Published a technical publication on “Lime-Fly Ash Aggregate Mixtures in Pavement Construction.”

1974
- Federal Highway Administration and Federal Aviation Administration approved specifications for use of fly ash in Portland cement concrete and in base course construction culminating years of work by NAA in contacts and research with DOT staff members;
- Assisted in preparation of legislation adopted by Maryland General Assembly classifying fly ash as a natural resource;
- Held Fifth Annual Technical Meeting in St. Louis, MO.;
- Sponsored display booth and presented technical paper at first Coal and The Environment Conference in Louisville, KY.;

1975
- Conducted tour of United Kingdom in cooperation with CEGB to view large tonnage applications of fly ash;
- Received 100% response from State Highway departments to determine how extensively ash is being utilized in maintenance and construction programs.
- Published 72-page Design Guide for use of fly ash basemixes in highway construction;

1976
- Co-sponsored Fourth International Ash Utilization Symposium at St. Louis, MO.;
- Participated in joint US/USSR Symposium and presented paper on ash utilization held in Russia;
- Held Sixth Annual Technical Meeting at Washington, DC, FHWA released copies of bulletin titled “Fly Ash-A Highway Construction Material.”

1977
- Co-sponsored a short course on “Technology and Utilization of Power Plant Ash” at West Virginia University—a first for the industry.
- Honored C. E. (Sam) Lovewell as the first recipient of the NAA’s Award of Merit for his contributions to the ash industry.
- Held Seventh Annual Technical Meeting in Kansas City, MO. Session devoted to “Western Coal Ash: Past, Present & Future.”

1978
- Co-sponsored repeat session of an Ash Short Course at West Virginia University.
- Co-sponsored an Ash Management Conference on the campus of Texas A. & M. University;
- Co-sponsored an Ash Technology Exchange Congress at London, England;
- Co-sponsored an Ash Short Course at Arizona State University in Tempe, Az.
How PFA Makes A Good Concrete Mix

By David Weeks

LONDON—Under the microscope pulverised fuel ash looks like a close-up of a bubble bath. And that’s where the key to its successful use in concrete lies.

The Central Electricity Generating Board’s experts have found that the spherical shape of the particles plays a big part in the quality of the concrete.

“It’s a bit like throwing ball bearings on to a crowded dance floor,” said Don Blackie—a civil engineer who has spent years analysing concrete and cement.

“The spherical particles give the mix mobility—something that is normally achieved by adding water.”

When PFA is used the amount of water can be greatly reduced. This in turn reduces shrinkage and creep—two unwelcome deficiencies which occur in floors and granolithic surfaces when concrete sets.

The improvement in the size and shape of PFA molecules has come about recently through improved coal grinding mills and furnaces of higher thermal efficiency.

Better techniques have also been found for selecting ash for concrete from precipitators—the devices which catch the ash before it goes up the chimney.

The ash is as fine as household dust—the particles measure only 0.04 millimetres across.

It costs about 3 pound a ton and when added to concrete cuts down on the amount of cement needed in the mix by 30 per cent.

That’s where the money saving starts—cement works out at about 25 pound a ton.

The first large-scale use of ash was made by the Generation Division in a PFA concrete mix at Littlebrook D—and it proved a big success.

“Littlebrook will always be an outstanding example because by using the ash to make a first-class concrete for the piles we saved 1.50 pound for every cubic yard. And the work was done in sulphate-bearing ground,” said Don Blackie.

The success of the product has sent sales rocketing from about 500 tons a month in 1974 to 11,000 tons a month now.

“The qualities of PFA have been known since 1936 but it is only recently that we have come up with a quality assured product that is regularly available,” said Don.

Concrete know-how

Twelve million tons of PFA are salvaged from coal-burning stations each year—but only a third of this meets the exacting standards which have been set up after years of research.

Blackie has been involved in concrete technology since Generation Division was formed and before that spent six years with the Cement and Concrete Research Association.

Now, along with ash marketing officers Bob Brown and Barry Crispwell from the North Eastern Region, Don is leading still deeper research into the behaviour of ash in concrete.

The Generation Division has already solved a major problem in the South Western Region when an alkali aggregate reaction was found in some concrete. This leads to the expansion and eventual break-up of even massive sections of concrete.

“The cement companies suggested we use a low alkali cement at a higher price but we have been able to show that a more effective way of dealing with the problem was to replace 30 per cent of the cement with PFA to stifle the reaction,” explained Don.

Prices Secretary Roy Hattersley has urged the cement companies to get together with the CEGB to produce a blended product using PFA. This would save money and also a great deal of the energy used in making cement.

However, the Generation Division is convinced that the best economic benefit will be gained when the ash is blended on site.

About 60 per cent of all concrete used in Britain could readily contain PFA. And that could mean an income of 4,000,000 pound a year for what is basically a waste product.

(Courtesy Power News)

NOT TOO LATE
(Continued from Page 1)

material cannot be supplied on an as produced basis. Likewise, land farming interpretations would prevent the use of ash as a soil amendment.

Additionally, regulatory costs and administrative burdens imposed by the new RCRA regs will discourage producer interest in recycling these coal by-products. Also, individuals, private industry, and local governments will avoid any items carrying the “hazardous waste” label even if the application is termed environmentally safe.

Comments received prior to the promulgation of the regs will be considered. The last of five scheduled public hearings are set for March 7-9 in Denver, CO and March 12-14 in San Francisco, CA.


SYMPOSIUM
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The program has been split into six (6) different sessions including two concurrent meetings on Monday afternoon and three all-day panels on Tuesday.

This means an individual will have to pick and choose the sessions he wishes to attend, Faber noted. “However, all papers will be incorporated in the proceedings to be published by the Department of Energy,” he stated.

William T. Wertman of the DOE’s Morgantown Energy Research Center is serving as co-chairman for the symposium and will address the opening session.