

ASH AT WORK

PUBLISHED BY NATIONAL ASH ASSOCIATION, 1819 H STREET NW, WASHINGTON, D.C. 20006

Printed on recycled paper.

Vol.XV

1983

No.2

NAA, RR&U Join Forces To Develop Data On Proposed New Ash Procurement Guidelines

WASHINGTON—A contract has been awarded to Valley Forge Laboratories for the preparation of supporting background data for proposed guidelines on the "Federal Procurement of Transportation Construction Materials Containing Fly Ash, Bottom Ash, and Boiler Slag."

The program is being jointly sponsored by the RR&U Committee of EET's Utilities Solid Waste Advisory Group and the National Ash Association.

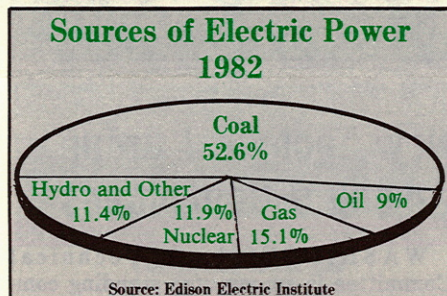
RR&U Chairman Robert Miller of Central Illinois Light Company and the NAA's Dennis L. Kinder will act as coordinators for the project. Kinder is a research engineer with American Electric Power Service Corporation.

Others serving on the NAA task force with Kinder are: Stephen Benza of Pennsylvania Power & Light, Don T. Ward of Baltimore Gas & Electric, Al Babcock of Allegheny Power Service Corp., and Technical Director Roy Aaron.

When developed, the guidelines will be presented to the Environmental Protection Agency for possible implementation under Section 6002 of the Resource Conservation & Recovery Act of 1976 as amended. It is being patterned after recently enacted guidelines calling for consideration of the use of fly ash concrete on all Federally funded construction projects.

The overall purpose of the guidelines is to promote the expanded utilization of power plant ash by procuring agencies on subgrade and embankments, subbase, base, and pavement applications. The

(Continued on Page 2)



COAL CONVERSIONS DOWN; SOME STILL PLAN SWITCH

WASHINGTON—Despite the fact that coal-fired generating stations are responsible for 52.6 percent of the electrical energy produced here in the United States the prospects for further re-conversion to coal seem to be diminishing.

On May 16, the Wall Street Journal reported that seven utilities have cancelled or postponed coal-conversion projects in the past year with Niagara Mohawk being the latest to abandon plans for its Albany Station.

On the plus side of the ledger, three new Association members - Consolidated Edison Co., Orange & Rockland Utilities in Pearl River, N.Y., and United Illuminating Co. in Bridgeport, CO - reported they are still eyeing a switch in fuel sources. Another NAA member, Virginia Electric & Power Co. has converted 1,800 megawatts since 1975 and expect to add another 680 megawatts by 1987.

Also, Boston Edison Company is considering converting 1,200 megawatts to coal.

Con Ed's decision hinges on the necessity to install scrubbers at one station, largely because of space limitations.

The Wall Street article said the recent dip in oil prices plus the economics of the overall conversions have tipped the scales to the point "many utilities aren't looking at it any more as a reasonable option."

'ASH ALERT' Is Issued by NAA

WASHINGTON—The NAA has issued an "Ash Alert" to its membership.

The Environmental Protection Agency is conducting a series of public hearings to accept public comment on an amendment to redefine the materials that should be classified as hazardous wastes when recycled under Section 3001 of Resource Conservation & Recovery Act of 1976 (RCRA).

In 1980, Congress passed an amendment to the RCRA act which deferred hazardous waste regulation of power plant ash until EPA evaluates a study on the environmental impact, if any, of the disposal and reuse of these materials and submits a report to the Congress.

The NAA filed a brief at the initial hearing in Washington on June 16 to the effect that power plant ash should not be placed under the hazardous waste umbrella and to do so would jeopardize the marketability of the material. It was also pointed out the re-use of ash is not harmful to human health or the environment.

Other NAA members and EET's RR&U Committee were slated to appear at subsequent hearings in Chicago on June 21 or in San Francisco on June 23.

A discussion of the proposed rules was contained in Part II of the Federal Register dated April 4, starting on Page 14472.

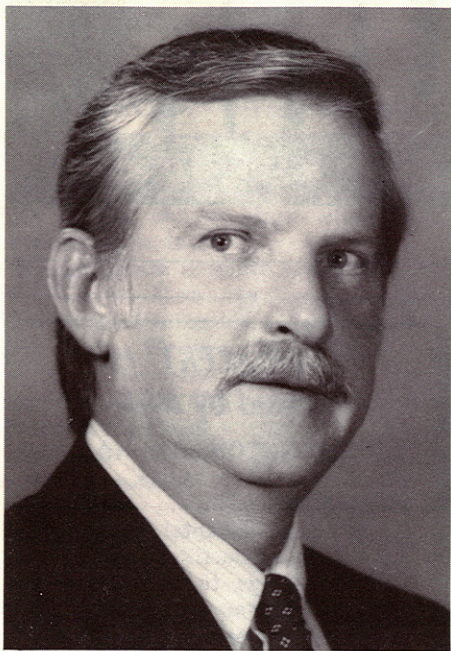
Public comments will be accepted by the EPA until August 2.

If you are a producer, user, or an exponent of the use of power plant ash, please submit your comments to Technical Director Roy Aaron immediately so they can be incorporated in the NAA's position statement.

IN THIS ISSUE

NAA Ash Alert.....	1
NAA, RR&U in Joint Study.....	1, 2
Coal Conversions Down.....	1
Committees Named.....	2
Kansas Guard Uses Ash.....	3
Mine Subsidence Work Begins.....	4

New NAA Officers



VEPCO OFFICIAL—Charles E. Shelton, who represents Virginia Electric & Power Company on the NAA Board of Directors, is Manager-Fossil & Hydro Operations Support for the Virginia utility. A Registered Professional Engineer, Shelton was employed by the utility shortly after graduation from VPI and held assignments at three generating stations before being named senior staff engineer in 1974. He assumed his present post in 1982.



NEW DIRECTOR—James S. Brunner, general manager for two Consumers Power Company's fossil-fired generating stations, is the newest member of the NAA's Executive Committee and the Association's Board of Directors. A registered professional engineer, Brunner is a graduate of Albion College. He joined the company in June 1948 as a junior engineer and assumed his present assignment in April of 1982. He has also attended the University of Michigan and Texas A&M University. In addition to managing the B.C. Cobb and J.R. Whiting stations, and the Grand Rapids Steam Heating Plant, he also directs the utility's travel repair crew.

TVA Celebrates 50th Birthday

CHATTANOOGA, TN—The Tennessee Valley Authority celebrated its 50th birthday on Wednesday, May 18, 1983.

Although more well-known for the 36 dams it operates in Tennessee and Alabama, the TVA also has 10 coal-fired electric generating stations in the two states and is, therefore, a major producer of power plant ash.

The TVA was also of the charter members of the National Ash Association.

New Technical Group Among 9 Committees

WASHINGTON—A Technical Committee is among nine standing committees appointed by President James P. Plumb to serve the membership of the National Ash Association during the coming year.

The objective of the new committee is to develop and maintain a technical support program for the entire ash industry.

Appointees are to provide guidance to Technical Director Roy Aaron and make recommendations to the Executive Committee and Board of Directors on technical activities beneficial to the Association.

Members named to serve with Chairman Aaron include Messrs. Al Babcock, Craig Cain, Robert J. Collins, Ronald E. Morrison, and Jack Weber.

Other standing committees, with the first named being the chairman, are:

Audit - James E. Davis, John Maier, Roger Ophaug;

Budget & Finance - Donald T. Ward, Gerald Bowdren, Joseph Mullan, Charles E. Shelton, and Charles Tackett;

Charter & By-Laws - Ronald E. Morrison, Joseph Mullan, Richard Ondreyko;

Membership - John Dorsett, Stephen T. Benza, Gerald Bowdren, Donald T. Ward;

Planning - Gerald Bowdren, Don T. Ward, Ronald E. Morrison, John Dorsett, Joe Mullan, Bart Thomas;

Publications - Al Babcock, Stephen Benza, William Collins and Ron Morrison;

Staffing - Joe Mullan, Steve Benza, Gerald Bowdren, Craig Cain, Ron Morrison, Don Ward.

NAA, RR&U Join

(Continued from Page 1)

specs are being structured to permit the use of ash on highways, airport runways and aprons, mass transit roadbeds, and on inland waterways.

Robert Collins, VFL Executive Vice President, will be the principal investigator on the \$40,000 project. Other participants include Robert Hunt of Franklin Associates and John H. Faber of Shepherdstown. The latter is the former executive director of the NAA.

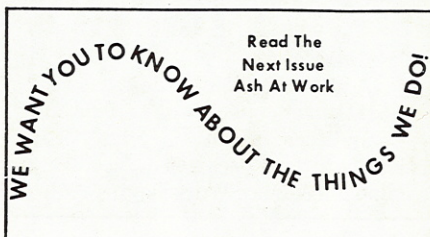
One of the integral components of the study will be the incorporation of a recently initiated NAA study to determine which states have standard specifications for the use of power plant ash in highway construction.

In 1974, the Federal Aviation Administration approved the "Use of Fly Ash in Portland Cement Concrete and Stabilized Base Construction." The P-305 spec was included in the FAA's "Standard Specifications for Construction of Airports" handbook.

And, historically, the U.S. Corps of Engineers pioneered the use of fly ash concrete in dam construction and continue to specify its use.



REVIEW CONTRACT—Robert Miller (seated), chairman of EEF's Resource, Recovery & Utilization Committee, is shown reviewing the Valley Forge Laboratories contract with other members of the committee at a recent meeting in Washington. They include (left to right) Dennis L. Kinder, American Electric Power Service Corp.; Russell Boyd, EnviroSphere Company; and Stephen Benza, Pennsylvania Power & Light Company. Messrs. Kinder and Benza represent the NAA on the joint committee.



Kansas Air National Guard Used Fly Ash To Stabilize Area Around Jet Fuel Tanks

TOPEKA, KA.—Soil stabilization techniques utilizing fly ash enabled the Kansas Air National Guard to save over \$400,000 in the renovation of three fuel storage ponds here at Forbes Air Force Base.

Captain Bob Burke of the ANG said the project was completed at a cost of \$141,000 - representing a substantial savings over the original estimates of \$550,000. Hamm Asphalt of Perry was the general contractor.

The Air Force officer is credited with "the foresight in seeing fly ash as a useful alternative to conventional chip and seal methodology and allowing the necessary field tests of the Class C ash."

IMPERVIOUS BARRIER

The project involved the renovation of existing banks and basins, covering approximately eight acres, as an impervious barrier to resist jet fuel spillage in the event of a tank rupture.

Midwest Fly Ash Co. supplied the 3,600 tons of ash from Kansas Power & Light Company's Jeffrey Energy Center with Robin Somerville serving as project coordinator. The Jeffrey Center burns sub-bituminous Wyoming coal.

Somerville explained the existing brown clay, gravel, and top soil was mixed with the fly ash at the rate of 20 pounds per square foot. The banks were cut back, the materials mixed with the ash on the basin floor, and then put back in place. An average percent of relative compaction of 101.5 was achieved on the dike slopes.

The percent moisture ranged from 10.1 to 17.6. The optimum moisture was listed at 21.5.

The basin was then scarified to a depth of six inches. The ash was placed in windrows, tilled with the existing soils and water added. The mat was rolled and compacted with a rubber-tired roller with the contractor achieving a percent of relative compaction of 104.8.

GRAIN TRAILERS

The floor was sealed with a CRF-iH emulsion at the rate .5 gallons per square yard.

Two modes of transport were used in delivering the ash to the job site including pneumatic tankers and bottom dump grain trailers. Somerville reported the dumps proved to be very successful because the turn around time was essential in completing the project on schedule.

Somerville said it is hoped the project will be a blueprint for similar applications in the Topeka area.



Compacting Basin Mat



Shaping Perimeter Banks



Spreading and Mixing of Fly Ash on Basin Mat

NAA Reps Participate In FHWA Fly Ash Workshop

SHREVEPORT, LA—Five representatives of the National Ash Association participated in a Fly Ash Workshop here June 8-9 for Federal Highway Administration engineers from 17 southern states.

Technical Director Roy Aaron headed the panel that included Claude Brown of Dallas, TX, Gifford-Hill Company; Lou Marcuz of Houston, TX, Ash Management Systems, Inc.; Jim Gumm of Des Plaines, IL, American Fly Ash Company; and Everett Perrien of New Orleans, LA, Middle South Services, Inc.

The opening session included a review of the current use of ash and state-by-state reports on the use of fly ash in soil stabilization, embankment and mineral filler applications as well as a partial replacement for cement in pavements and structural members.

Speakers included Jeffrey Sommerfeld of the FHWA in Washington who gave a nationwide overview of ash utilization and Robert Prochaska of FHWA Region 6 who led a discussion on the FHWA position on the use of fly ash under the new Federal Procurement Guidelines. Others included William Ledbetter of Texas Transportation Institute at Texas A&M University and Sam Thornton of the University of Arkansas.

States represented in the three FHWA regions are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Arkansas, Louisiana, New Mexico, Oklahoma, Texas, Iowa, Kansas, Missouri, and Nebraska.

\$2.1 Million Mine Subsidence Control Project Initiated in Fairmont

Fly Ash/Cement Grout To Be Used

FAIRMONT, WV — Work is underway on a \$2.174 million mine subsidence control project here utilizing a fly ash/cement grout to stabilize an 18-acre section of the McCoy Mine where coal removal began in 1894.

The program is being carried out by Nicholson Construction Co. of Pittsburgh, PA. under a contract from the West Virginia Department of Natural Resources. Funds are being provided by the U.S. Office of Surface Mining (OSM) from a trust fund created by a royalty on each ton of coal mined across the nation.

It is expected to take 125,000 tons of fly ash and 15,000 tons of cement to prepare the grout mix to fill the old underground mine workings. The job was designed by OSM Geologist Jesse L. Craft after studying the mine maps and exploratory films. The work is expected to stabilize the area and prevent further subsidence from taking place.

Dr. Craft identified the coal as being the Pittsburgh seam. The depth below the surface ranges from about 40 feet near the outcrop to 119 feet at the deepest point.

The ash is being supplied by Monongahela Power Company from its Harrison Power Station and will be trucked to the job site in tarped open-bed dump trucks.

Nicholson designed the grout mixer using a Warman high-solid slurry pump with a capacity of 600 slurry gallons per minute. The pump has a variable speed hydraulic motor (800 to 1,200 rpm) that can be adjusted to the distance and elevation the grout has to travel to reach the injection point.

'Specifications Require Group To Attain Unconfined Compression Strength of 200 PSI'

The game plan calls for the grout to be mixed at a central batch plant and transported to the injection points in a 3,500 foot network of six-inch diameter steel pipe. There are approximately 58 bore holes into the old haulageways including monitoring positions.

Project Manager Lynn Crayne explained the specs require the grout to attain an unconfined compressive strength of 200 psi in 7-days. As designed, the mix will contain an 8:1 ratio of fly ash to cement.

Due to the high pozzolan strength of the fly ash, Crayne said "We may be able



Drilling Bore Holes



Installing Victaulic Coupling

to reduce the cement ratio." Lab tests produced psi's in the 300 to 475 range in seven days and up to 850 psi in 28 days, he explained.

The Nicholson official stated the mix at the perimeter points will be "considerably stiffer" to prevent "blow outs or leaks at the outcrop." The barrier grout will be pugged with a 75 to 25 percent ratio of fly ash to cement.

The mixing operation will be directed by Construction Materials, Inc. - a Belot-Hoy Company, located in Morgantown. A Hetzel mixer has been installed at Fourth and Virginia streets with a rated capacity of 150/180 cubic yards per hour. "Our goal is to be able to inject 1,200 tons of grout per day," Crayne stated.

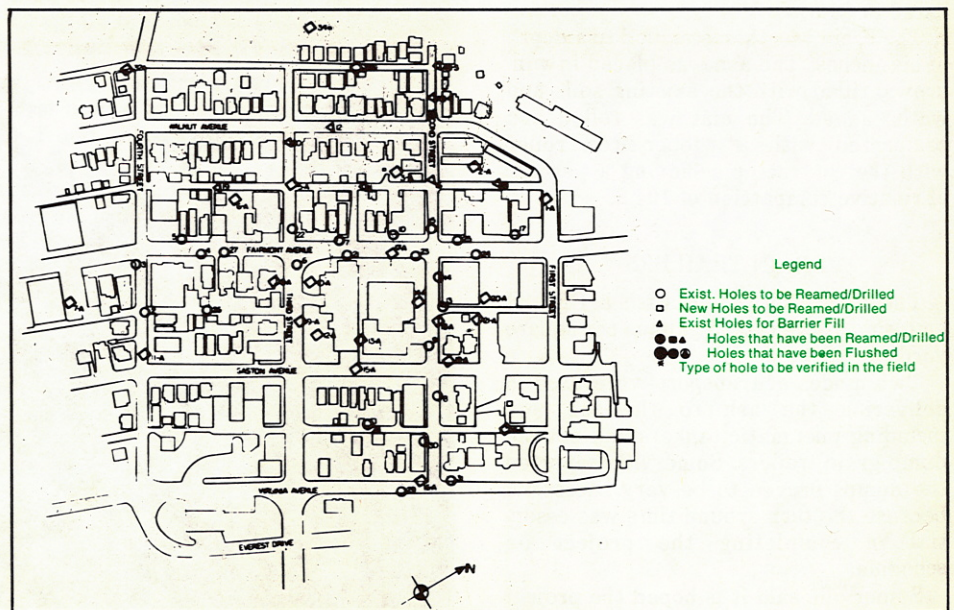
The injection process will be monitored by a TV camera lowered into an adjoining hole about 15 feet from the feed point to insure the fly ash-cement grout has a good flow around obstructions and is filling the mine cavity. The camera, mounted on a swivel head, has a

range of about 35 feet with an attached high intensity light. OSM staffers will be housed in an above ground trailer to record and document the results.

Subsidence first occurred in the 5 by 6 block area adjoining the city's Central Business District in September, 1978. Structures affected include 4 churches, 3 banks, U.S. Post Office, Health Department, Board of Education, County Fire/Rescue headquarters, an auto agency, several commercial buildings, as well as many apartment and single family dwellings.

In an order to facilitate the movement of vehicular traffic in the area, the piping will be placed beneath the surface across the main streets. At other intersections asphalt ramps will be placed over the pipe.

Nicholson was selected from among 14 contractors who bid the job. The completion date of the project is November, 1984.



Map of McCoy Mine with Injection Points