


ASH AT WORK

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

 Printed on recycled paper.

Vol. X

1978

No. 4

AEP Pioneers New Program

NEW YORK—The American Electric Power Service Corporation has initiated the industry's first full-scale ash management program to coordinate production, research, and marketing activities.

Ronald E. Morrison is to direct the operation as head of the newly created Ash Utilization & Research Section within AEP's Materials Handling Division.



Ronald E. Morrison

The new section will be headquartered in Charleston, WV and will have overall responsibility for ash production, handling, disposal, marketing, and research for the utility's 17 coal-fired power plants in seven states.

AEP operates facilities in Michigan, Indiana, Illinois, Ohio, Kentucky, West Virginia, and Virginia.

The uniqueness of the concept is the establishment of a supervisory position at the power station level for directing all aspects of ash production, handling, and storage.

"We plan to give equal emphasis to our ash program at the power plant level as is now accorded the task of getting the coal into the station and maintaining the turbines," Morrison explained.

An engineer with 26 years of service that began in a small power plant, Morrison added "it is hoped the move will impact both the availability and

(See AEP on Page 4)

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Ash Collections, Use Attain New Peaks

ASH collections and utilization reached all-time peaks in 1977. And, yet, impending new environmental regulations threaten to invalidate these successes.

In fact, the future of the ash industry may be in jeopardy if power plant ash is classified as a "hazardous waste" rather than being treated as a recoverable resource.

During the same period a survey of 131 utilities operating coal-fired electric generating stations disclosed the units burned approximately 478 million tons of coal. Firms covered in the study represented 90 percent of that total or 430 million tons and the figures were adjusted to a 100 percent burn figure. (See regional summary below)

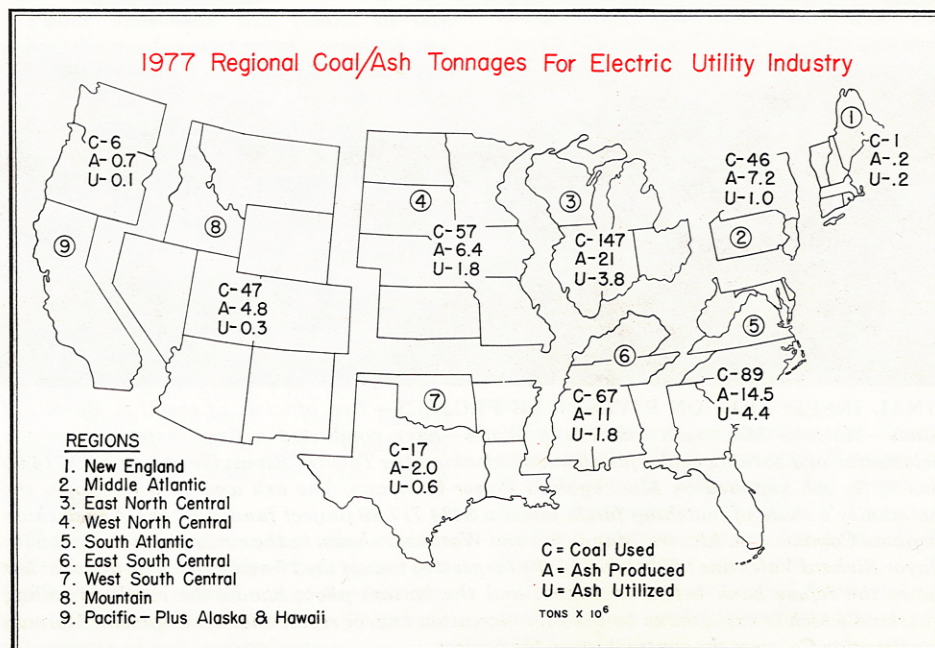
Collection data, compiled by the NAA in cooperation with the Edison Electric Institute, for last year placed overall tonnages at 67.8 million tons—up 5.9 million tons over 1976. A breakdown of the figures included 48.5 million tons of fly ash, 14.1 million tons of bottom ash, and 5.2 million tons of boiler slag.

A new utilization peak of 20.7 percent was also achieved during the 12-month period. The figures totaled 14 million tons with 6.3 million in fly ash, 4.6 million in bottom ash, and 3.1 million in boiler slag. (See annual report on Page 4).

NAA Director John H. Faber said a significant gain—73 percent—was noted in the use of ash for the partial replacement of cement in concrete and concrete products. The 1977 total in this category amounted to 1.575 million tons as compared to 912,000 tons the previous year.

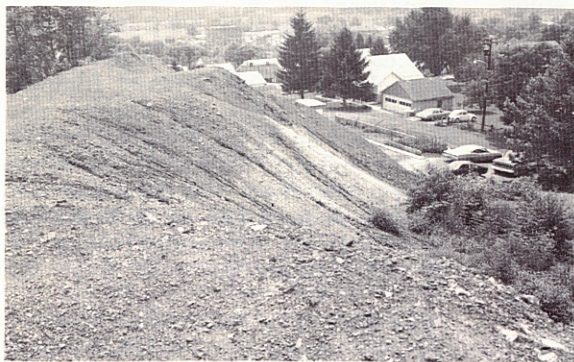
The expanded use of fly ash in highway construction is responsible for the lion's share of the increase. Highway departments across the country now have specs on fly ash concrete for both flexible and rigid pavements. Interstate contractors from the Virginias and Georgia to Iowa and on to Texas and Arizona placed substantial tonnages of fly ash concrete last year. Other ap-

(See ASH COLLECTION on Page 4)





ATTEND ASH SHORT COURSE—The 69 participants in the recently concluded Ash Short Course at West Virginia University pose for the cameraman during a final coffee break. The program featured technical presentations on the use of power plant ash in structural fills and embankments. Case histories on actual installations including an embankment on the Waukegan Expressway, a backfill at a Kansas City parking garage, and a Pennsylvania structural fill at evening sessions were well received. Another plus was a review of efforts by the Resource Recovery Division of the Environmental Protection Agency to document uses for the industrial by-products being generated in the United States. The program was coordinated by Dr. Roger K. Seals of the WVU Civil Engineering staff and NAA Director John H. Faber.



FINAL INSPECTION ON RIVESVILLE PROJECT—Two officials of the U.S. Bureau of Mines—Malcolm Magnuson and Frank Watts—have conducted a final inspection on the reclamation of a burning coal refuse bank overlooking the Town of Rivesville utilizing 30,714.05 tons of fly ash supplied by Monongahela Power Company. The ash was used to supply the community's share of matching funds under a \$424,717.89 project funded by the Appalachian Regional Commission. Messrs. Magnuson and Watts are shown in the circle photo at right with Mayor Richard Valentine (right) during the inspection tour of the 17-acre tract. The photo at left shows the refuse bank before treatment and the bottom photo shows the resultant rolling grassland which is expected to be used for recreation and/or residential development. Harman Construction Co. were the contractors on the project.

Personal Profile

L.M. Shydrowski

CHICAGO—L. Michael Shydrowski has been named Manager, Sales and Engineering for American Admixtures Corporation.

In his new position, Shydrowski will be responsible for the sale and field engineering of a full-line of chemical admixtures including fly ash, superplasticizers, and other coal by-products on a national basis.

He moved here from St. Louis where he served as Southern District Manager which included parts of Missouri, Kansas, Oklahoma, Kentucky, and Tennessee. Prior to that he spent two years in sales and service engineering for the firm in Indiana.

A graduate of Marquette University with a Bachelor of Science degree in Civil Engineering, Mike served as Service Engineer with the Penn-Dixie Cement Company specializing in expansive cement applications.

The Wisconsin native assisted in planning and staging the Fourth International Ash Utilization Symposium held in St. Louis in March 1976.

For the past eight years, Shydrowski has been active in the American Concrete Institute. He is currently serving on the ACI Committee 306, Cold Weather Concrete and Committee 332, Residential Concrete.



Reprints Available

DETROIT, MI.—A state of the art report on "Proportioning Concrete Mixes - Special Publication - 46 - is available through the American Concrete Institute.

The 13-paper compilation covers proportioning techniques for expansive cement concretes, pumped concrete, mass concrete, gap-graded aggregate concrete, factors influencing proportion of air-entrained concrete, use of chemical admixtures, proportioning mixes with fly ash and other pozzolans, and high strength concrete.

223 Pages, paper cover; Members \$10.95; Non-Members \$16.25; Published 1974.

To order write American Concrete Institute, P.O. Box 19150, Redford Station, Detroit, Michigan 48219.

London Congress Next

Five Ash Symposia are Planned

WASHINGTON—It is one down and five to go in a series of international conferences on ash technology scheduled through March 1979. The National Ash Association is the prime mover in staging the events.

Sixty-nine persons representing diversified roles in ash management and utilization participated in a recently concluded technology conference on structural fills and embankments at West Virginia University. Co-sponsored by the NAA, the sessions were held Aug. 13-16.

The next program will also be history by the time this issue of ASH AT WORK reaches you. Over 100 had pre-registered for the Ash Management Conference being held on the campus of Texas A. & M. University at College Station the last week in September.

London, England, is to be the site of the first international session set for October 22-27. The Central Electricity Generating Board is hosting the Ash Technology Congress in collaboration with the NAA and the Atomic Research Establishment at Harwell.

Conference Chairman John K. Dent has indicated the program will provide a valuable forum for an ash technology exchange and ideas on future concepts on ash utilization.

The final two days will be devoted to optional tours of ash installations. They include a power station ash handling plant, land restitution, geotechnical, conservation of historic buildings, other building and construction applications.

Papers from several NAA members and academic ash researchers have been accepted for presentation at the three-day marketing and utilization conferences.

Plans have been finalized for an Ash Short Course at Arizona State University on Nov. 27-29 to bring the message of ash utilization to the Southwest and Far West. The program is being co-sponsored by ASU, West Virginia University, the NAA, and Engineers Testing Laboratories, Inc. of Phoenix.

Dr. John Rosner of ETL is serving as program chairman for the course to be held in the Memorial Union Building on the ASU campus.

Enrollment will be limited to 75 and is open to all interested groups such as utility personnel, marketing agents, highway engineers and planner, contractors, and academic interests. Registration fees have been set at \$175.

Subject matter to be covered in the three-day course include production and availability, physical and chemical

properties, beneficiation and quality control, environmental aspects of ash disposal and utilization, marketing and uses, 1-D cements, fly ash concrete, specifications, and research needs.

Registrations are now being accepted for the Fifth International Ash Utilization Symposium to be held at the At-

Calendar of Events

- SEPT. 25-27 : Ash Management Conference, Texas A. & M. University, College Station, Tx.
- OCT. 22-27 : Ash Technology Congress, Central Electricity Generating Board, London, England.
- NOV. 27-29 : ASU/NAA/WVU/ETL Ash Short Course, Arizona State University, Tempe, AZ.
- FEB. 25-27 : Fifth International Ash Utilization Symposium, Atlanta Hilton, Atlanta, GA.
- MAR. ??? : LSU/NAA/WVU, Ash Short Course, Louisiana State University, Baton Rouge, LA.

lanta Hilton in Atlanta, Ga. on Feb. 25-27. (See enclosed application).

Director John H. Faber reports a record number of abstracts had been received from ash technologists around the world desiring to present papers at this prestigious ash conference.

Faber said this will result in the scheduling of concurrent sessions as was done at the 1976 symposium in St. Louis. Manuscripts selected will be due by December 15.

He also noted the Department of Energy had agreed to publish the proceedings as a co-sponsoring agency. Other groups participating with the NAA are Edison Electric Institute, American Public Power Association, National Coal Association.

Arrangements are now being made to conduct an Ash Short Course at Louisiana State University next March under the auspices of LSU, West Virginia University, and the NAA, Faber disclosed.

Further information on the course will be made available when dates are finalized, he added. As tentatively planned the subject matter will include all aspects of ash technology.

HERE & THERE

Santee is Sold

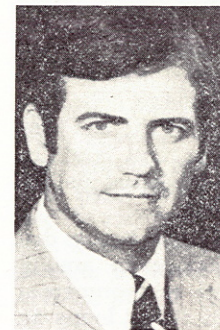
SANTEE, S.C.—The Santee Portland Cement Company has been sold to the Dundee Cement Company of Dundee, MI—merging two of the nation's major producers of Type 1-P portland-pozzolan cement.

Dundee is a part of a Swiss corporation—the Holderbank Group. The firm operates another facility in Clarksville, MO.

The sale culminated three months of negotiation with a 100 percent stock exchange of the locally-owned company which opened at Holly Hill in 1966.

At present the company name will remain intact including the Santee identity. Tentative plans call for increasing production here from six million to 7¼ million barrels annually.

Bowers Heads FHWA



WASHINGTON—Karl S. Bowers of Estill, SC has been nominated by President Carter to become federal highway administrator.

The 36-year-old Bowers has been serving in an acting capacity since the resignation of William Cox to run for lieutenant governor

of Kentucky.

The new FHWA chief served on the South Carolina Highway Commission for three years and its chairman for a year.

Bowers was appointed last year to serve as deputy administrator of the Department of Transportation Agency.

Ash Insulation

MEMPHIS, TN—The Tennessee Valley Authority has launched a large-scale feasibility test for the production of home insulation from fly ash here at its Station.

The mineral wool process was developed at the Coal Research Bureau at West Virginia University by Kenneth K. Humphreys and William F. Lawrence under a research grant from the U.S. Bureau of Mines.

The fibers are extracted from molten coal-ash slag as it comes from the power plant boiler.

Ash Collection . . .

(Continued from Page 1)

plications included cement-treated base-mixes and soil stabilization treatments.

Data by fuel types was also recorded for the first time in 1977. Stations fired with bituminous coal produced 56.6 million tons of ash and utilization was set at 11.9 million tons or 21 percent; sub-bituminous ash collected totaled 8.8 million tons of which 1.7 million tons were used for a percentage of 19; and lignite fuel ash produced was estimated at 2.4 million tons with a use factor of 16 percent at 400,000 tons.

As expected, about 79 percent of the total ash collected amounting to 53.9 million tons came from sources east of the Mississippi River. However, by the mid-1980's this figure is going to change when 59 new coal-fired units now in final design or under construction go on stream in the Southwest and Rocky Mountain area.

Increased use of fly ash was noted in the revegetation of strip-mined land and coal refuse piles and on mine subsidence correction projects.

A shift toward the dry collection of power plant ash was also noted during the year. American Electric Power disclosed they were going to convert their major units from a wet system with sluice ponds to on-site collection silos and the placement of the ash they don't market into structural landfills. Space conservation was listed as the major reason for the shift.

However, the split among wet vs dry systems remains pretty even among utility producers. New environmental regs which will require closed loops on wet systems will also expedite the changeover. The study also noted that 68 percent of the power plants have dry collection and unloading facilities for fly ash.

NAA officials feel the switch will also result in a separation of fly ash and bottom ash now being disposed of together at 72 percent of the installations.

AEP Pioneers...

(Continued from Page 1)

quality of the coal by-products we produce."

The program is being instituted at AEP's huge John Amos Power Station located near Charleston where the utility is constructing new ash handling facilities to convert from a wet to dry storage system.

At present Morrison's crew consists of a five engineering specialists—a senior staffer and four young interns. Dennis L. Kinder, an experienced ash technician, is assisting in developing and implementing the new program.

ASH COLLECTION & UTILIZATION 1977

(Million Tons)

	Fly Ash Tons x 10 ⁶	Bottom Ash Tons x 10 ⁶	Boiler Slag (if separated from Bottom Ash Tons x 10 ⁶)
1. TOTAL ASH COLLECTED	48.5	14.1	5.2
2. ASH UTILIZED	6.3	4.6	3.1
3. UTILIZATION PERCENTAGE			
A. COMMERCIAL UTILIZATION			
a. Mixed with raw material before forming cement clinker	7	—	3
b. Mixed with cement clinker or mixed with cement (Type 1-P cement)	5	2	—
c. Partial replacement of cement in concrete and blocks	25	—	—
d. Lightweight aggregate	2	3	—
e. Fill material for roads, construction sites, land reclamation, ecology dikes, etc.	20	20	8
f. Stabilizer for road bases, parking areas, etc.	3	5	2
g. Filler in asphalt mix	2	—	—
h. Ice control	—	22	13
i. Blast grit and roofing granules	—	—	48
j. Miscellaneous	3	9	22
B. ASH REMOVED FROM PLANT SITES AT NO COST TO UTILITY	7	17	4
C. ASH UTILIZED FROM DISPOSAL SITES AFTER DISPOSAL COSTS	26	22	—
	100	100	100

COMPARATIVE RESULTS

	1966*	1974	1975	1976	1977
ASH COLLECTED					
Fly Ash	17.1	40.4	42.3	42.8	48.5
Bottom Ash	8.1	14.3	13.1	14.3	14.1
Boiler Slag		4.8	4.6	4.8	5.2
TOTAL ASH COLLECTED-TONSx10 ⁶	25.2	59.5	60.0	61.9	67.8
ASH UTILIZED					
Fly Ash	1.4	3.4	4.5	5.7	6.3
Bottom Ash	1.7	2.9	3.5	4.5	4.6
Boiler Slag		2.4	1.8	2.2	3.1
TOTAL ASH UTILIZED-TONSx10 ⁶	3.1	8.7	9.8	12.4	14.0
PERCENT OF ASH UTILIZED					
% Fly Ash	7.9	8.4	10.6	13.3	13.0
% Bottom Ash	21.0	20.3	26.7	31.5	32.6
% Boiler Slag		50.0	40.0	45.8	60.0
PERCENT OF TOTAL ASH UTILIZED	12.1	14.6	16.4	20.0	20.7

*First year that data was taken

**1967-1973 data omitted from tabulation because of space limitation.

Compiled by the National Ash Association and Edison Electric Institute.