

SUSTAINABLE SOLUTION



CONTRACTOR PROVIDES COAL-FIRED UTILITIES WITH UNMATCHED FLY ASH MANAGEMENT

As the largest privately-held provider of coal combustion product (CCP) management, fly ash sales and marketing and power plant support services, Charah®, LLC assists electric utilities with all aspects of managing and recycling ash byproducts generated from the combustion of coal.

Within the industry, the Louisville-based company is known for developing innovative solutions. Such was the case from 2009 to 2016 when Charah utilized approximately 4 million cu. yd. of fly ash from Duke Energy as structural fill to build a runway at the Asheville (N.C.) Regional Airport, saving the airport authority \$12 million in the process.

Also in 2014, in response to changing regulatory requirements and tight deadlines, Duke Energy announced plans to excavate or close many of their coal ash basins. The scale and complexity of the task was immense, and the result was a turnkey 20-million-ton solution, satisfying engineering and regulatory challenges.

The partnership with Charah and Duke Energy developed into a long-term commitment to safely move ash from two of Duke's retired power plants on opposite ends of North Carolina to a clay mine in the central part of the state. Charah designed a structural fill facility, accommodating the beneficial use of up to 20 million tons of coal ash.

Once the Brickhaven project is complete, more than 300 acres of formerly unusable land in Chatham County will be available for industrial development.

20 million tons handled

Founded in 1987, Louisville-based Charah operates at approximately 50 locations in over 20 states. With more than 700 employees, Charah crews handle over 20 million tons of CCP annually.

The type of work the company regularly performs includes:

- Landfill design, construction, management, operations and closure
- Fly ash, bottom ash and gypsum sales and marketing
- Ash pond management and closure
- Structural fill projects
- Power plant support services including limestone supply and FGD operations.

"We're there to help our utility customers innovate and define solutions that meet their needs," says corporate vice president Charles W. Price.

When it comes to CCP byproducts, about 50 percent of coal ash generated at power plants is reused. Three main products—fly ash, bottom ash and synthetic gypsum—are recycled and utilized in other applications.

Synthetic gypsum is a byproduct of the scrubber process that removes carbon dioxide and sulfur dioxide from the air. Sulfur dioxide is a nutrient that's needed in crops. At a facility in Louisville, Charah granulates synthetic gypsum that's used for providing sulfur for crops, and sells it to the agricultural industry.

"Our goal is to find as many uses as possible for these products," Price says. "As a result, we sell and market ash to cement and ready-mix companies; we process bottom ash for use in concrete blocks as a replacement for mined lightweight aggregate, and we also sell and market synthetic gypsum to gypsum wallboard companies, cement companies and for agricultural use."

Ash pond closures

The coal ash industry is in the midst of significant change regarding how ash is managed. One of the

biggest changes is the closure of wet ash ponds due to concerns over the potential for leachate to contaminate groundwater.

"We do a lot of work cleaning up existing ash ponds or actually closing them by excavating the ash and moving it elsewhere," Price says. "Ash pond closure is a huge focus of ours."

Working in challenging wet conditions, the depth of the ash pond basins varies—averaging around 40 feet—but can reach up to 100 feet.



Charah crews utilize Cat® 336F L XE and 349E Hydraulic Excavators with long reach booms to perform the excavation work, and are assisted by D6T LGP Dozers and 740 Articulated Trucks.

"We use the low ground pressure (LGP) dozers for ash ponds and everything else," says Keith Bolen, an assistant regional manager for Charah. "The wider dozer tracks allow for better operation in soft ground conditions."

As crews often work in challenging conditions, Charah places a major emphasis on safety. Charah has been recognized by the North Carolina Department of Labor for its safety record for six years in a row, and has received numerous safety recognitions and awards in other states, including Kentucky.

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Charles W. Price

CHARAH®, LLC

charah.com

Corporate Vice President:
Charles W. Price

Location: Louisville, Ky.

Established: 1987

Employees: 700-plus

Services: Landfill construction, operations, management & closure; fly ash, bottom ash, gypsum & FGD byproduct management; coal combustion product (CCP) sales and marketing; power plant support services including limestone supply, gypsum operations and wastewater treatment; ash pond conversion and closure; dry fly ash conversion; ash pond management; and Integrated Gasification Combine Cycle (IGCC) slag beneficiation.

Cat® Equipment: Skid Steer Loaders, 305 Mini Excavators, 1055 and 1255 Telehandlers, 316, 336E and 349 Hydraulic Excavators, 420 Backhoe Loaders, D4K, D6N, D6T and D8 Dozers, 950, 960 and 980 Wheel Loaders, 963 Track Loaders, Motor Graders, 735 and 745 Articulated Trucks, Water Trucks, Rollers, 815 Soil Compactors



“It’s a matter of not just talking about it, but living and breathing it,” Price says. “Safety is the first thing you hear about on any Charah jobsite, and our team believes it—it’s our culture.”

Power plant support services

Working as an on-site contractor, Charah crews provide a variety of services to Louisville Gas and Electric Co. (LG&E) at the Mill Creek Generating Station adjacent to the Ohio River.

Charah personnel handle the movement of fly ash from silos and stackout pads to an on-site landfill. Crews also are performing landfill construction and expansion work to increase on-site capacity. In addition, LG&E has some wet ash ponds on-site that Charah currently manages are scheduled to be closed out.

“In order to generate electricity our utility partners like LG&E are going to produce fly ash, so it has to be handled appropriately and effectively,” Price says. “We seek to sell as much of it as we possibly can. Every ton that we’re able to sell is a ton that’s being reused beneficially and saves the mining of another natural resource.”

Also, less ash is being stored on-site, which means over the long term the power plant is able to operate without having to find more space for a landfill, Price adds. Charah crews are working on an on-site landfill expansion, excavating a 20-acre, 22-foot deep basin as they prepare it to receive fly ash. 240,000 cu. yd. of earth was moved by Cat machines to prepare the basin.

A Cat D6T LGP equipped with GPS grades the sloped edge of the basin, as well as the floor, before it is lined with clay.

“We’ve used Cat equipment for years, and I think the Cat dozers are the best in the industry,” Bolen says. “With GPS, it’s really a plus because we can get everything to grade in the shortest time possible. Our excavators don’t over dig anymore. The dozers just come back through and slick it up, and it saves us a lot of time and effort.”

“We have some very good dozer operators who don’t really need it, but it just makes it that much more accurate,” Bolen adds. “You can’t do it as fast as GPS can. I’ve been running dozers for years, and I’ll spend twice the time achieving spot-on grade as I would if I put the GPS on it.”

Aggressive growth

Charah has an aggressive growth strategy, and continually sets the bar high. Over the last six years, its customer roster has expanded from one that essentially mirrored the footprint of the Southeast Conference to one that covers a much wider geographic area—most of it east of the Mississippi River.

Charah’s foundation for growth is built on providing excellent customer service, backed by an innovative approach that defines solutions.

“As a company, we always want to get better, so we set very aggressive goals,” Price says. “We make certain that for any Charah project, we get it done on time and on budget. These things are key for our customer, and our strong reputation has definitely aided in our growth.”

In turn, Charah requires timely support from the Cat dealer network to keep its machines running at all times.

“We work at power plants that are often in remote locations, so being able to get service and technicians to the jobsite, or to machines if they’re down—being able to get parts quickly—this level of service is a huge benefit and something that we depend on,” Price says.

“If any of our machines go down, we have to get them back up as soon as possible,” he says. “If we have a machine that is down and it can’t be repaired on the jobsite, a Cat dealer will get us a replacement within 48 hours so that we’re back up and running and not being held up.”

Caterpillar has been a great partner due primarily to its dealer network, Price adds.

“We don’t know where a machine is going to go next,” he says. “It may be



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— CHARLES W. PRICE
Corporate Vice President, Charah, LLC



here today, and it could be in North Carolina tomorrow and Florida next week. So we have to make certain that regardless of where it’s going, it can be taken care of. That’s a huge piece of why Caterpillar has been so important to us in what we do.”

When an articulated truck had an issue at the LG&E plant earlier this year, Wayne Supply was quick to provide Charah with a replacement 745 Articulated Truck.

As a Cat dealer based in its own backyard, Wayne Supply was instru-

mental in connecting Charah with a national Cat Corporate Account, which ultimately saves the contractor time and money on equipment acquisition.

“As our hometown Cat dealer, we call on Wayne Supply if we are looking for pricing on machines and other technical information,” Price says. “They help us figure out what we need and get us the pricing, and help connect us with other dealers throughout the country.”

We know we can depend on Wayne Supply when we need them.” ■

