

# Coal Ash Excavation – Riverbend Steam Station



Duke Energy is committed to permanently and safely closing ash basins at its coal plants. The company has accelerated its work in response to North Carolina's Coal Ash Management Act, which requires basins to be closed at four plants – Asheville, Dan River, Sutton and Riverbend – by August 2019, with all other plants closing their basins no later than December 2029.

As part of this process, Duke Energy submitted coal ash excavation plans to state regulators in November 2014 for the first four plants, including Riverbend. The excavation plans detail a multi-phase approach for removing coal ash from the site with an emphasis on the first 12 to 18 months of activities.

## Riverbend Steam Station

County: Gaston

Commercial date: 1929

Retirement date: 2013

Plant status: Decommissioning in process



## Overview of the Riverbend Excavation Plan, Phase I

- **Quantity and Destination:** To beneficially reuse the coal ash, 1 million tons of material will be excavated from the ash stack and taken to two locations.
  - The majority of the ash, approximately 90 percent, will be used in a structural fill to reclaim an open-pit clay mine at the Brickhaven mine in Chatham County, N.C., and the Sanford mine in Lee County, N.C.
  - About 10 percent of the ash will be used to make concrete by the Roanoke Cement Company in Troutville, Va.
- **Transportation:** Initially, all ash will be transported by truck. However, rail loading and unloading facilities are being built or upgraded at the Riverbend Plant and the Brickhaven and Sanford mines, which will take several months. Once complete, rail transport will be used for the ash taken to Brickhaven and Sanford while trucks will continue to transport ash to Roanoke Cement Company.
- **Timeline:** Pending all necessary approvals, Duke Energy is prepared to begin moving coal ash within 60 days after receiving necessary permits. Based on current estimates, coal ash excavation could begin by March 2015. Dewatering of the primary and secondary ash basins will begin along with project planning for later phases to identify storage options for the remaining 3.6 million tons of ash on the plant property.

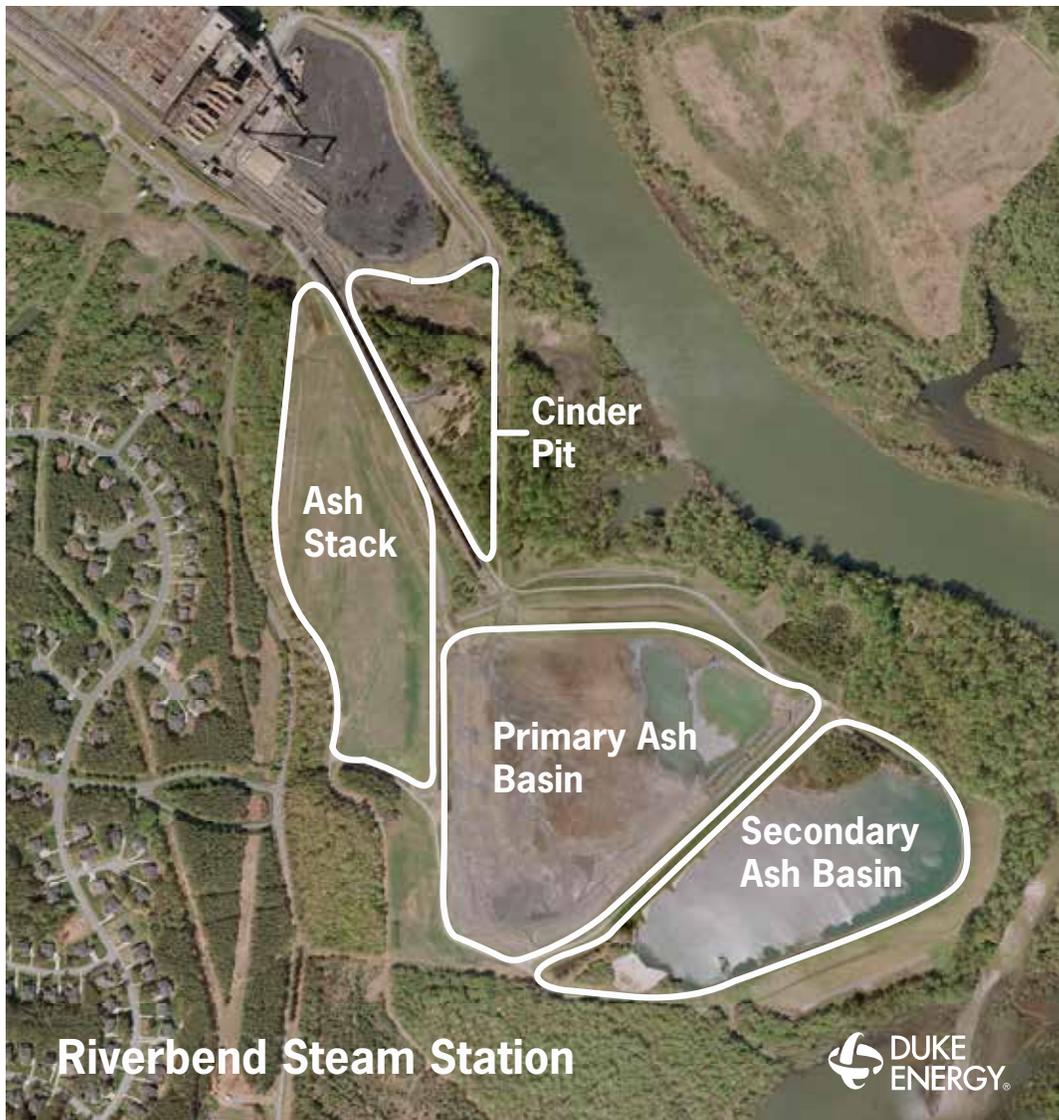
### Reclaimed Mine Structural Fill Projects

Coal ash from the Riverbend plant will be beneficially reused as a structural fill at open-pit clay mines in Chatham and Lee counties in North Carolina. Ash will be placed in a series of liners, with the top and bottom impermeable liners being heat-welded to encapsulate the ash. The completed structural fill will be covered with soil. This project will meet all state and federal standards for a structural fill, including groundwater monitoring and reporting.

Strategies developed and lessons learned in Phase I of the excavation plan will improve subsequent phases and inform the final closure plan for Riverbend, as well as other sites in North Carolina. The plan will be updated and submitted to state regulators annually or as necessary.

Duke Energy is committed to the health, safety and welfare of employees, contractors and the public, and to protecting the environment and natural resources. The coal ash excavation plan for Riverbend seeks to minimize public and environmental impacts and includes comprehensive safety plans.

When coal is burned, it creates multiple coal combustion products (CCPs), including fly ash, a fine material similar to the consistency of talcum powder, and bottom ash, which is a coarser, granular material collected from the bottom of coal-fired boilers. That material, totaling approximately 4.6 million tons at Riverbend, is safely stored on plant property. Over time, Duke Energy and the rest of the utility industry have changed and improved ash management practices. Early in the Riverbend plant's life, CCPs were stored in a primarily dry condition in an area known as the cinder pit. Then in 1957 the company constructed an engineered ash basin to serve as highly effective treatment systems for wastewater containing coal ash. That basin was expanded in 1979 and divided into what are now known as the primary and secondary ash basins. In addition, there is a dry ash stack on the property, which stores ash from basin clean-out projects, the last of which occurred in 2007.



For more information about coal ash and to view the Riverbend plant excavation plan, please visit [www.duke-energy.com/ash-management](http://www.duke-energy.com/ash-management).