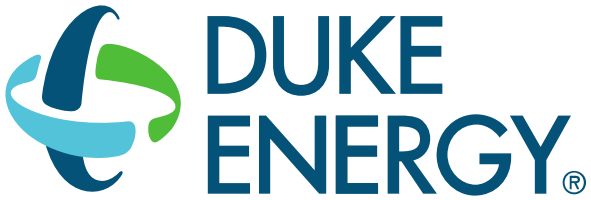
Riverbend Steam Station

Coal Ash Excavation Plan



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I. Statement of Purpose

Duke Energy Carolinas, LLC (Duke Energy or the Company) is required by Section 3(b) of the Coal Ash Management Act of 2014 to close in accordance of Section 3(c) the coal combustion residuals (CCR) surface impoundments located at the Riverbend Steam Station, National Pollutant Discharge Eliminations System Permit No. NC0004961 Gaston County (Riverbend) as soon as practicable, but not later than August 1, 2019. Further, by letter to Duke Energy dated August 13, 2014, North Carolina Department of Environment and Natural Resources (NC DENR) requested that Duke Energy submit coal ash excavation plans for inactive coal ash impoundments at Riverbend no later than November 15, 2014 (NC DENR Letter).

This Coal Ash Excavation Plan (Plan) represents Phase I and other Subsequent Phase(s) activities to satisfy the closure requirements outlined in Sections 3(b) and 3(c) sub paragraph 1&2 of the Coal Ash Management Act of 2014 and the requests set forth in the NC DENR Letter.

In general, the Plan covers the first 12 – 18 months of ash basin excavation activities, including the initiation of basin dewatering, ash stack removal, and any other permitted ash removal activities within the ash basins and/or Cinder Pit Area. These activities may include decanting ash within the ash basin system. The areas within the Ash Basin include the Primary Ash Basin, the Secondary Ash Basin, and the Ash Stack.

For Subsequent Phase(s), this document will be revised for any modifications to the Plan for the site. The Plan will be updated and submitted to NC DENR annually or earlier as required by Subsequent Phase(s).

The NC DENR letter specifically requests that the Plan include 1) a schedule for soil and sedimentation erosion control measures, 2) dewatering, and 3) the proposed location(s) of the removed ash. These requirements are found in Section V. Level 1 Schedule, Section VI. Erosion and Sedimentation Control Plans, Section VII. Dewatering Plan, and Section VIII. Proposed Location(s) for Removed Ash.

The Plan covers some of the work required by Sections 3(b) and 3(c) of the Coal Ash Management Act of 2014 (Session Law 2014-122) (Coal Ash Act, or Act). The Act requires the closure of the ash basins as soon as practicable, but no later than August 1, 2019. However, the Act contains no requirement for the submittal of an excavation plan of the kind presented here. Thus, while the formulation, submittal, and review of this Plan will assist in Duke Energy's work to close the ash basin, its ultimate approval is an action not specifically required by statutory, regulatory or other applicable authority. Additionally, it may become necessary for the Company to modify the Plan to address other legal requirements or factors that develop during ash basin excavation. Any

changes will be included in annual updates to the Plan that Duke Energy will submit to NC DENR.

The precise scope of work in excavating the ash basins will be determined by applicable laws, rules, permits, and approvals that control the activities to be performed under the Plan. For example, the United States Environmental Protection Agency (EPA) is considering issuing rules regarding the management of coal ash (proposed EPA Coal Ash Rules). Similarly, the water quality permit for the discharge from the Pond (National Pollutant Discharge Elimination System Permit No. #NC0004961 Gaston County) or its reissuance or amendment (NPDES Permit) could contain terms that control or affect the scope of that work. NC DENR filed legal cases in Superior Court (NC DENR Cases), which could be resolved through decision or settlement. NC DENR also sent Duke Energy a Notices of Violation (NOVs) regarding surface water and groundwater quality issues at the Plant.

All of the above (Coal Ash Act, NC DENR Letter, NPDES Permit, NC DENR Cases, NOVs, and the proposed EPA Coal Ash Rules) are illustrative of actions that could potentially affect the precise scope of the work to be performed under the Plan. As a consequence, neither the submittal of this Plan nor its approval by NC DENR should be taken as requiring actions different from other such applicable requirements. Thus, Duke Energy submits this Plan to NC DENR based on the understanding that it may be necessary to make changes in the Plan in the future to reflect any such actions and reserves the right to make such changes after NC DENR's approval of the Plan.

II. General Facility Description

Riverbend is located off of Horse Shoe Beach Road near the town of Mt. Holly in Gaston County, North Carolina, on the south bank of the Catawba River. The seven-unit station began commercial operation in 1929 with two units and then expanded to seven by 1954. At its peak, the generating facility had a capacity of 454 megawatts. As of April 1, 2013, all of the coal-fired units were retired.

The CCR from Riverbend's coal combustion operations was historically processed in the ash basin system located on the northeast of the property adjacent to the Catawba River. The discharge from the ash basin system is permitted through Outfall #002 to the Catawba River in the Catawba River Basin by NC DENR's Division of Water Resources (DWR) under the National Pollutant Discharge Elimination System (NPDES) Permit # NC0004961. Currently, Riverbend is being decommissioned, and no active ash placement or sluicing is occurring within the ash basin system.

Ash Basin System

The ash basin system was an integral part of the station's NPDES permitted wastewater treatment system, which predominantly received inflows from the ash removal system, station yard drain sump, and stormwater flows. During station operations, inflows to the ash basin were highly variable due to the cyclical nature of station operations. The current ash basin system consists of a Primary Ash Basin cell (west side) and a Secondary Ash Basin cell (north side), which are separated by an intermediate dam. For the purpose of stormwater management, the Ash Stack is also within the ash basin system.

The ash basin system is located approximately 2,400 feet to the northeast of the power plant, adjacent to the Catawba River, as shown on Figure 1. The Primary Ash Basin cell is impounded by an earthen embankment dam, referred to as Primary Dam #GASTO-97, located on the west side of the Primary Ash Basin cell. The Secondary Ash Basin cell is impounded by an earthen embankment dam, referred to as Secondary Dam #GASTO-98, located along the northeast side of the Secondary Ash Basin cell.

Originally, the ash basin at Riverbend consisted of a single-cell basin commissioned in 1957. It was expanded in 1979 to its current configuration. In 1979, the original single basin was divided by constructing a divider dam (Intermediate Dam #GASTO-99) to form two separate cells (Primary Ash Basin and Secondary Ash Basin). This modification improved the original pond's overall ability for suspended solids removal. The Intermediate Dam was built over sluiced ash to a crest of 730 feet. At the same time, the Secondary Dam crest elevation remained at 720 feet. At present, the Primary Ash Basin and the Secondary Ash Basin are estimated to contain approximately 2.1 million and 700 thousand tons of CCR, respectively.

The inflows from the ash removal system and the station yard drain sump are directed through sluice lines into the Primary Ash Basin cell. The discharge from the Primary Ash Basin to the Secondary Ash Basin is through a concrete discharge tower located near the divider dam. The surface area of the Primary Ash Basin is approximately 41 acres with an approximate maximum pond elevation of 724 feet above mean sea level. The surface area of the Secondary Ash Basin is approximately 28 acres with an approximate maximum pond elevation of 714 feet above mean sea level. The full pond elevation of Mountain Island Lake is approximately 647 feet above mean sea level.

Although the station is retired, stormwater and wastewater effluent from other non-ash-related station flows to the ash basin are discharged in compliance with the station's NPDES permit to Catawba River through a concrete discharge tower located in the Secondary Ash Basin. The concrete discharge tower drains through a 30 inch diameter corrugated metal pipe (CMP) into a concrete-lined channel. The channel extends from the Secondary Ash Basin to an NPDES Outfall #002 that discharges to the Catawba River. The Secondary Ash Basin elevation is controlled by the use of concrete stop logs.

Ash Stack

An ash fill deposit, known as the "Ash Stack", was constructed from ash removed from the Primary and Secondary Ash Basins during basin clean-out projects. The Ash Stack was utilized for the ash basin cleanouts periodically to prolong the life of the ash basins. The Ash Stack is a 29 acre area located south of the Primary Ash Basin and is estimated to contain 1.5 million tons of CCR. The Ash Stack was constructed during two ash basin clean-outs; the last recorded ash basin cleanout project was in 2007. The Ash Stack area currently has a 1.5 – 2.0 ft. soil cover and vegetation that has been maintained following the last deposition in this area. For the purpose of water management, the stormwater run-off from the Ash Stack area is routed to the ash basin system.

Cinder Pit And Other Identified Ash Storage Areas

Prior to construction of the ash basin, bottom ash (cinders) were deposited in a primarily dry condition in the "Cinder Pit" and other areas near the cinder pit and coal pile. The Cinder pit is approximately 13 acres and is located in a triangular area northeast of the coal pile and northwest of the rail spur (See Figure 1). This area was utilized for storage of ash material at the station prior to the installation of precipitators and a wet sluicing system. The Cinder Pit contains predominantly dry cinders and is currently covered with dense vegetation. The Cinder Pit is estimated to contain 300 thousand tons of CCR.

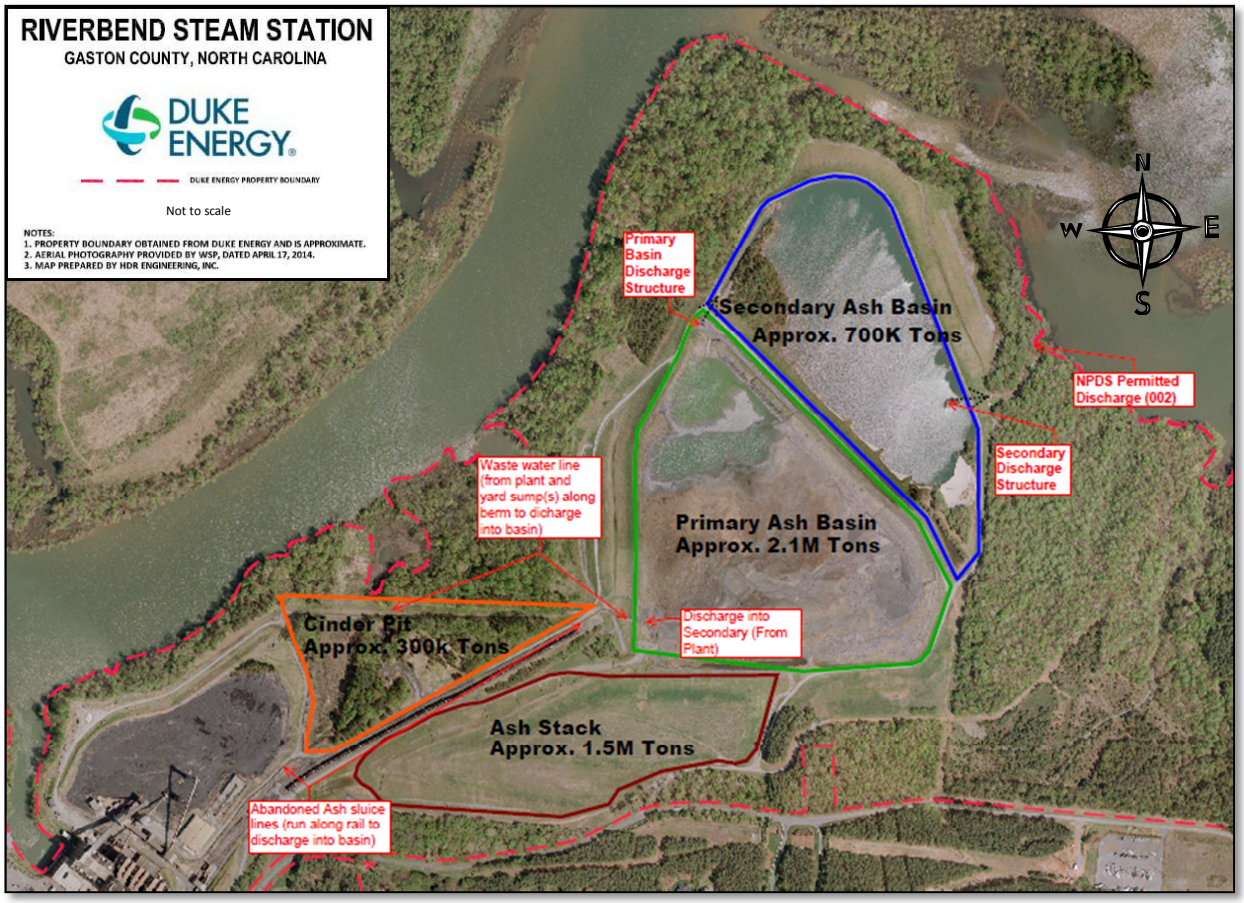


Figure 1: Riverbend Steam Station

III. Project Charter

As a further commitment, the Company has formed an internal team, the Ash Basin Strategic Action Team (ABSAT). This team is dedicated to strengthening and executing a comprehensive strategy for increased oversight and closure of all of the Company's ash basins.

Dewatering of the ash basins and the removal of ash from the site will be performed within project phases: Phase I and Subsequent Phase(s). Required permits for each phase are set forth in Section X of this Plan. Phase I will include the initial removal of ash from the Ash Stack, begin bulk dewatering, and complete any other subsequent permitted activities. The excavation will begin with the approval of this Plan by NC DENR and the receipt of final permits.

In addition, a dewatering plan for the ash basins has been drafted and, if approved by NC DENR, bulk dewatering will be expedited during the initial phase of work. Duke Energy has submitted an application to modify its NPDES wastewater permit to include controls to be implemented during dewatering activities.

During Phase I, the Company will continue to perform the pre-construction and planning activities for the Subsequent Phase(s). These activities include project planning, development of new ash disposition options, and completion of additional required permitting that may be necessary for the ash removal from the ash basins and Cinder Pit. Knowledge and opportunities for program improvement obtained during Phase I of the project will be applied to the Subsequent Phase(s).

Project Charter Objectives

Phase I Objectives

1. Initiate the removal of ash from the Riverbend site
2. Plan activities for the Subsequent Phase(s), including development of option(s) for proposed ash disposal or beneficial reuse location(s)
3. Validate production rates to meet project requirements
4. Gain knowledge and opportunities for program improvement that can be applied to the Subsequent Phase(s)

Subsequent Phase(s) Objectives

1. Dewater Ash Basins
2. Remove all remaining ash from the Ash Stack, Cinder Pit, Primary Ash Basin and Secondary Ash Basin
3. Submit permit applications for next Subsequent Phase (if applicable)

Project Charter Scope

Phase I Scope

1. Finalize end location(s) for removed ash and obtain all required permits
2. Obtain all applicable permits for work in Phase I
3. Install site erosion and sedimentation control measures
4. Begin site preparation activities, including mobilization
5. Excavate and transport approximately 1 million tons of ash from the Ash Stack to Roanoke Cement Company and Brickhaven Mine
6. Engineer plan to stop water inputs into the ash basins
7. Initiate rerouting of inflows to the ash basins
8. Begin dewatering the Primary and Secondary Ash Basins
9. Plan activities for Subsequent Phase(s) and submit an updated Plan
10. Begin site preparation activities for the Subsequent Phase(s)
11. Assess, including delineation, the potential remediation efforts in the Cinder Pit
12. Submit and/or obtain all remaining required permit applications for ash removal activities for Subsequent Phase(s)
13. Identify and/or develop additional location(s) for removed ash for Subsequent Phase (if applicable), including obtaining all required permits

Subsequent Phase(s) Scope

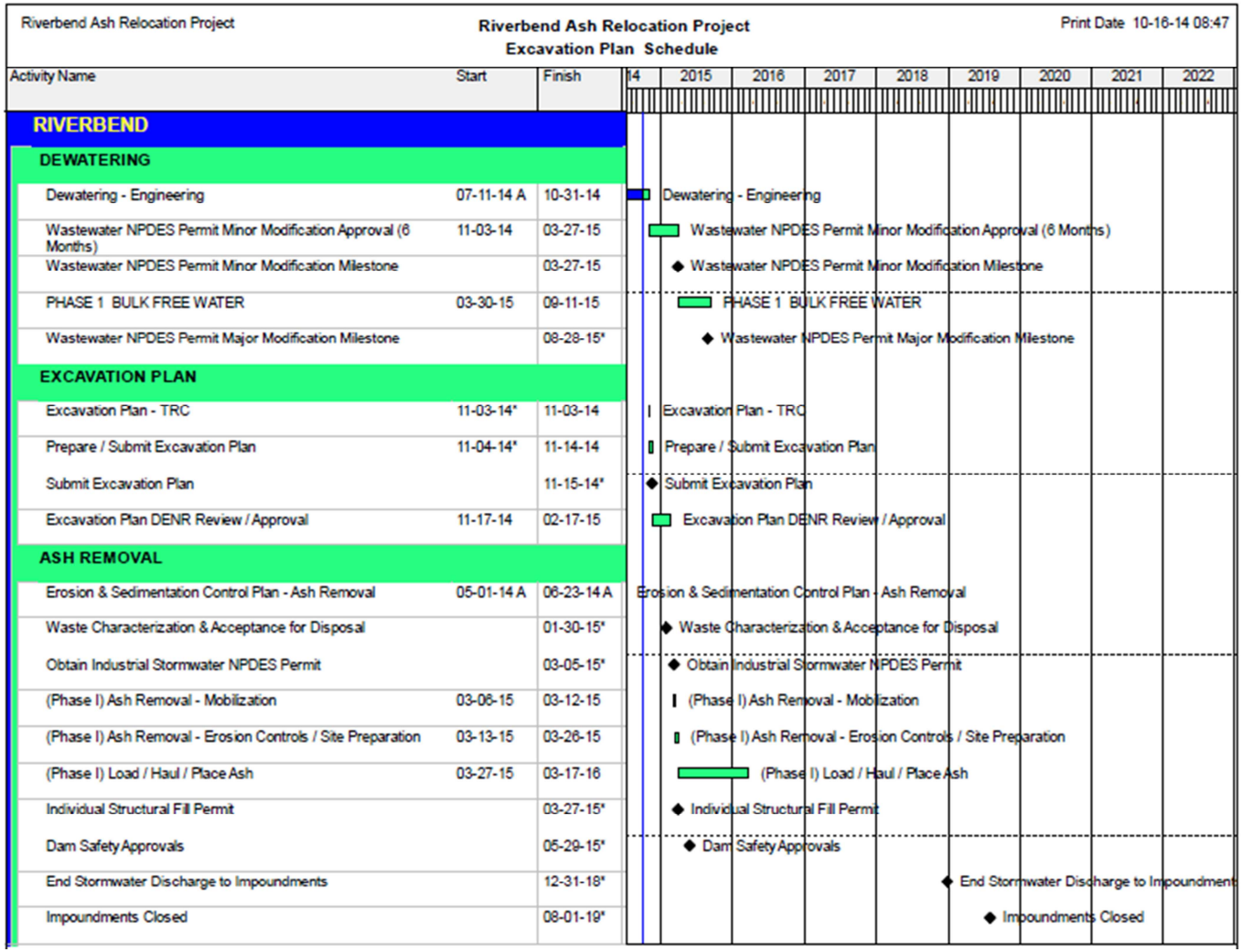
1. Obtain all remaining required permits for next Subsequent Phase for ash removal activities (if applicable)
2. Finalize and/or develop additional location(s) for removed ash (if applicable) and obtain all required permits
3. Complete activities to stop basin inflows
4. Complete basin dewatering
5. Excavate and transport the remaining ash from Riverbend to an approved landfill or structural fill location
6. Complete closure activities as outlined in Sections 3(b) and 3(c) subparagraphs 1&2 of the Coal Ash Management Act of 2014

IV. Critical Milestone Dates

Critical Milestones within the Plan are summarized in the table below. These milestones have been added to the Level 1 Schedule.

MILESTONES	NO LATER THAN DATE
Submit Excavation Plan	November 15, 2014
Complete comprehensive engineering review	November 30, 2014
Excavation Plan Approval	February 17, 2015
Industrial Stormwater Permit	March 5, 2015
Commence work – ash removal	Final permit approval + 60 Days
Submit Updated Excavation Plan – Subsequent Phase(s)	December 31, 2015
Eliminate stormwater discharge into impoundments	December 31, 2018
Impoundments closed per Sections 3(b) and 3(c) of the Coal Ash Management Act of 2014	August 1, 2019

V. Level 1 Schedule



Note: This Level 1 Schedule is a living element of this Plan. Dates and durations are based on known information on the date of this Plan.

VI. Erosion and Sedimentation Control Plan

The Erosion and Sedimentation Control Plan (E&SC) for the excavation of the Ash Stack has been developed. This plan and schedule were submitted to NC DENR and approved on July 3, 2014. The approval of this plan by NC DENR meets the requirement outlined in the NC DENR Letter.

The approved contractor will install the E&SC measures indicated in the plan. The Engineer of Record will review the installation prior to commencing excavation on site. All control measures will be maintained through the project in accordance with the E&SC.

The modification of the E&SC for the excavation of the ash basins and Cinder Pit Area is currently under development and will be submitted as part of the Subsequent Phase(s). Any deviations from the current E&SC for Subsequent Phase(s) are to be approved by NC DENR prior to installation.

VII. Dewatering Plan

The Riverbend ash basins will be dewatered to facilitate the removal of ash and to mitigate risk. Lowering the water level within each basin will improve safety factors of the dams by reducing the driving force on the upstream face of the dam. Similarly, dewatering will improve the physical properties of the retained ash, making it less susceptible to flow in the event of an unexpected dam failure.

An Engineered Dewatering Plan for Riverbend was developed to remove the following water from the ponds:

Sequence

1. Primary Ash Basin – Removal of free water

   Based on data from June 2014, the Primary Ash Basin contains approximately 2.1 million gallons of free water. The free water in the Primary Ash Basin will be pumped to the Secondary Ash Basin to minimize hydraulic pressure on the intermediate dam. The maximum free water drawdown rate will be one foot over seven days. Following free water removal, accumulated stormwater will be removed at a maximum rate of 2 feet over 1day.

2. Primary Ash Basin – Removal of water 10 feet below top of ash

   After removal of free water, the entrapped water level within the Primary Ash Basin will be lowered by approximately 10 feet. To achieve the desired water level, a trench approximately 15 – 20 feet deep will be constructed in the Primary Basin just inside the Primary Ash Basin dam to draw down entrapped water in the vicinity of the dam.

3. Secondary Ash Basin– Removal of free water

   Based on data from June 2014, the Secondary Ash Basin contains approximately 101 million gallons of free water. The maximum free water drawdown rate will be one foot over seven days. Following free water removal, accumulated stormwater will be removed at a maximum rate of 2 feet over 1day.

VIII. Proposed Location(s) for Removed Ash

Phase I of the Plan will include the excavation and removal of approximately 1.0 million tons of ash from the Ash Stack. Subsequent Phase(s) will remove the remaining ash at the site. Ash removed from the site will be transported by the contractor to properly permitted facilities. The ash placement location will be properly managed and maintained to ensure environmental compliance with all applicable rules and regulations.

Phase I: Storage Sites

For Phase I, several sites have been identified for beneficial reuse. The primary option provides a solution for Phase I and/ or Subsequent Phase(s). These sites include the Roanoke Cement Company in Troutville, Virginia and the Brickhaven Mine in Moncure, North Carolina.

Disposition Site	Location	Amount (Tons)	CCR Use
Roanoke Cement Company	Troutville, VA	115,000	Cement Component
Brickhaven Mine	Moncure, NC	885,000	Structural Fill

Roanoke Cement Company

The Roanoke Cement Company (RCC) is located at 6701 Catawba Road, Troutville, Virginia. The material hauled from Riverbend to RCC will be used primarily to produce fly ash modified concrete. The practice of adding fly ash to concrete has been accepted

since the 1970's and will be in accordance with ASTM standards, which provides standards and specification for the production at the RCC facility.

Brickhaven Mine

The mine is located near the city of Moncure in Chatham County of North Carolina. The mine resides on approximately 299 acres. Its primary mined minerals are clays. Ash will be transported to the mine as a reclamation project. The Brickhaven Mine will comply with the requirements set forth in Sections 4(b) and (c) of the Coal Ash Management Act of 2014.

Contingent Plan: Ash Disposition Sites

For a Contingent Plan, the RCC facility will be utilized as described above. In the event of any issues with accepting ash at the Brickhaven Mine, the Sanford Mine has been determined as a suitable alternative site. All necessary steps will be taken to assure that the Sanford Mine is ready to accept ash in the event of any issues at the Brickhaven Mine.

Disposition Site	Location	Amount (Tons)	CCR Use
Roanoke Cement Company	Troutville, VA	115,000	Cement Component
Sanford Mine	Sanford, NC	885,000	Structural Fill

Sanford Mine

The Sanford Mine is located in Sanford, North Carolina. Ash will be transported from Riverbend to the Sanford Mine as a reclamation project.

Structural Fill Alternative

In the event the structural fill options are not available, the Anson County Landfill, a permitted solid waste landfill, has been identified as the alternate location. The Anson County Landfill is located in Polkton, NC. Material will be transported by rail.

Subsequent Phase(s): Ash Disposition Sites

The project team will utilize lessons learned from Phase I to develop an off-site disposal strategy and/or alternative beneficial reuse site(s) that will provide the improvements below.

- Provide a reliable, long-term, cost effective, solution for ash designated for removal
- Develop a supplier diverse Program to drive innovation and competition
- Establish performance baselines and the system to optimize pickup, transport, drop-off and reuse

IX. Transportation Plan

Ash will be transported from the site via rail car and/or highway trucks to the off-site facilities. Transportation will be conducted by approved transporters. Drivers and trucks will meet Department of Transportation (DOT) and other applicable federal, state, and local regulations. All drivers will follow all DOT regulations pertaining to the trucking including DOT bridge laws.

Phase 1: Transportation

For Phase I, approximately 10,000 tons per month of ash will be excavated and hauled to the RCC facility in the first three to four months via truck (see Figure 2). This tonnage equates to approximately 15 to 22 truckloads per day. After this start-up period, throughput will be increased by approximately 50,000 to 55,000 tons per month, which will be moved to the Brickhaven Mine via truck (see Figure 3). The total tonnage of 60,000 to 65,000 tons per month equates to 120 to 142 truckloads per day.

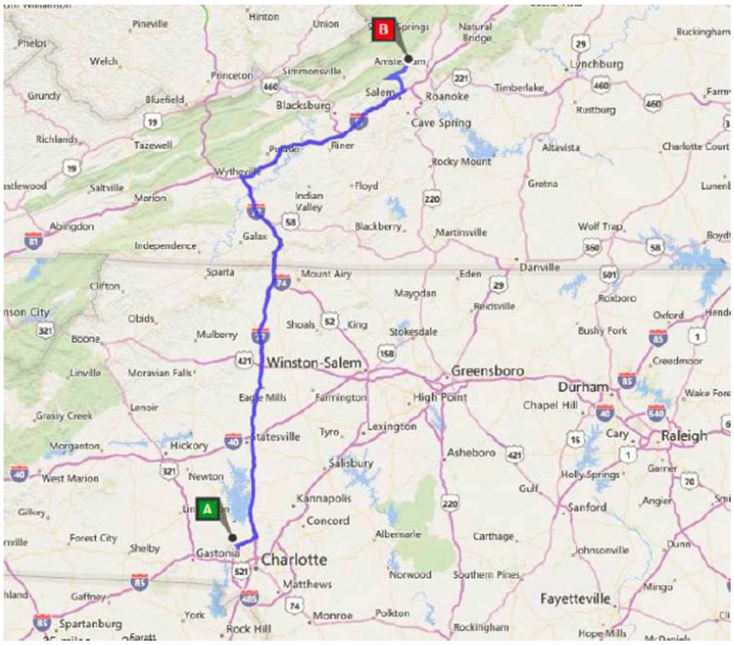


Figure 2: Typical Truck Route to Roanoke Cement Company Facility

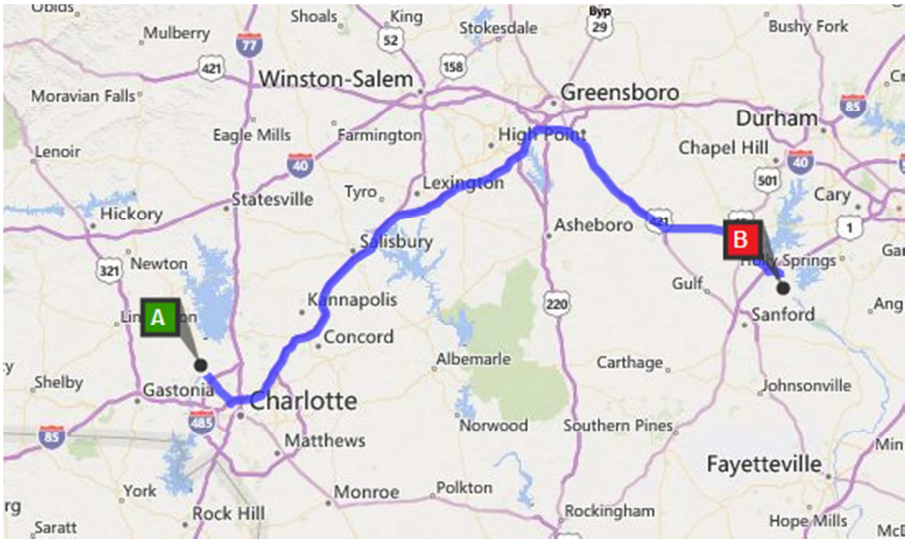


Figure 3: Typical Truck Route to Brickhaven Mine

Plans are being made to design and install a rail loading system at Riverbend that would transport ash to the Brickhaven Mine. Once rail loading/unloading systems have been installed and established at Riverbend and at the Brickhaven Mine, a combination of rail and truck or all rail can be utilized to transport ash to the two locations. By utilizing a combination of truck and rail or all rail, an estimated total of 160,000 to 165,000 tons of ash can be transported per month. The schedule estimates that ash can start being hauled by rail during the seventh month.

For Phase I excavation and hauling, a typical 9-hour work shift with two shifts per day for five days per week will be employed. This typical schedule may be utilized or modified in Subsequent Phase(s) to meet the August 1, 2019 compliance date.

Figure 4: Typical Truck Route to Sanford Mine

Increase Rail Opportunity

If the opportunity of transporting more ash by rail occurs, the amount sent to the RCC facility may be reduced and the amount sent to the structural fill options may be increased.

Subsequent Phase(s): Transportation

The transportation plan and any other options will be reviewed and could be amended in Subsequent Phase(s) to enhance the excavation process and objectives.

X. Environmental Permitting Plan

Phase I

Phase 1 will include initiating excavation and removal of ash from the Ash Stack. Implementation for Phase I can begin once the permitting for Phase I is in place, although different permitting may be necessary prior to initiating Subsequent Phase work. Permitting activities for Subsequent Phase(s) will be included in Phase I.

Through this Excavation Plan approval process, Duke Energy is seeking to confirm that all necessary approvals have been identified. The Excavation Plan is intended to authorize the excavation and movement of ash once the identified permits have been obtained.

Excavation of ash creates potential for stormwater impacts. The facility holds an approved Erosion & Sedimentation Control Plan and associated Construction Stormwater Permit approval for ash stack removal. NC DENR has indicated an industrial stormwater permit may also be needed. Based on this representation from NC DENR, Duke Energy has applied for an NPDES industrial stormwater permit to support ash removal at the site. A stormwater pollution prevention plan (SWPPP) incorporating best management practices (BMPs) will be created. Future modifications to the permit/plan will be managed as necessary.

NC DENR has recently indicated that modification of the NPDES wastewater permit may be required to initiate removal of free water from inactive ash basins. Duke is submitting additional information to NC DENR for its consideration to support incorporating dewatering requirements into the Company's pending NPDES permit application. The Company is working with the United States Environmental Protection Agency (EPA) and NC DENR with a goal of identifying the regulatory framework that will allow the removal of free-standing water from inactive basins to move forward.

There are no jurisdictional wetlands/streams associated with the removal of the Ash Stack or Primary or Secondary Ash basins in Phase I. Future wetland/stream impacts and jurisdictional determinations will be managed through the US Army Corps of Engineers (ACOE) with particular attention paid to the difference between jurisdictional wetlands/streams under Section 404 and those arising from Section 402 waters.

Before creation of new mine reclamation structural fills, an individual structural fill permit will need to be obtained by the mine reclamation project owner/operator. It is anticipated that the mining permit will be transferred from the existing mine owner to a mine reclamation contractor. Once the permit is transferred, the mine reclamation contractor will submit an individual structural permit application and mine reclamation plan to the Division of Mining. It is anticipated that the Division of Mining will then forward the reclamation plan to the Division of Water Resources, Division of Waste Management, and other divisions as necessary for comments. Subject to any changes from Division of Mining, the revised reclamation plan would be approved and an individual Structural Fill Permit will be issued.

No information currently exists to indicate that the Riverbend ash should be treated as a DOT hazardous material shipped via truck or rail.

Subsequent Phase(s) will include dewatering (once NPDES permit modification is complete), and continued excavation and removal of ash from the Ash Stack, Primary and Secondary Ash Basins and the Cinder Pit area.

Future jurisdictional determinations will be managed through the US Army Corps of Engineers with particular attention paid to the difference between jurisdictional wetlands/streams under Section 404 and those arising from Section 402 waters. Any Section 404 individual permitting will require Section 401 Water Quality Certification by NC DENR.

If used, before shipping ash to a third-party Subtitle D landfill, waste characterization and approval will be completed. All necessary Dam Safety approvals will be obtained to cover activities on or around jurisdictional dams. Breaching of the dams will require Dam Safety approval. Any impacted wells or piezometers will be properly abandoned and dispositioned with NC DENR. Fugitive dust will be managed to mitigate impacts to neighboring areas. Impacts to threatened and endangered species will be avoided.

No additional site-specific or local requirements have been identified.

Phase I Permit Matrix

Media	Permit	Milestone/Target Date	Reasoning
Water	Industrial Stormwater NPDES Permit	March 5, 2015	Excavation of ash creates potential for stormwater impacts. The facility holds an approved Erosion & Sedimentation Control Plan and associated Construction Stormwater Permit approval for ash stack removal. NC DENR has indicated an industrial stormwater permit may also be needed. Duke has applied for this permit. A SWPPP incorporating BMPs will be created.
	Wastewater NPDES Permit – Minor Modification	March 27, 2015	NC DENR has indicated dewatering activities, including free water removal, may require NPDES wastewater permit modification. Based on this, Duke is submitting proposed dewatering permit conditions in its pending NPDES permit application.
	Jurisdictional Wetland and Stream Impacts/404 Permitting and 401 WQC	N/A	There are no identified jurisdictional wetland/stream impacts in Phase I.
Waste	Dam Safety Approvals	May 29, 2015	Hauling and excavation activities must not impact a jurisdictional dam or dike. Activities are initially staying 50 feet away from the jurisdictional dike. Removing ash from the Primary and Secondary Ash Basins will have to be reviewed with Dam Safety. Breaching of dike will require Dam Safety approval.
	Individual Structural Fill Permit	March 27, 2015	Mine Reclamation Owner/Operator to obtain a structural fill permit as set forth in Subpart 3 of Part 2I of Article 9 of the Coal Ash Management Act
Local Ordinances	Site specific Nuisance/Noise/Odor/Other Requirements including DOT and FERC Requirements	N/A	No local nuisance requirements identified.

Subsequent Phase(s) Permit Matrix

Media	Permit	Milestone/Target Date	Reasoning
Water	Industrial Stormwater NPDES Permit	March 5, 2015	Excavation of ash creates potential for stormwater impacts. The facility holds an approved Erosion & Sedimentation Control Plan and associated Construction Stormwater Permit approval for ash stack removal. NC DENR has indicated an industrial stormwater permit may also be needed. Duke has applied for this permit. A SWPPP incorporating BMPs will be created.
	Wastewater NPDES Permit – Major Modification	August 28, 2015	NC DENR has indicated dewatering activities, including free water removal, may require NPDES wastewater permit modification. Based on this, Duke is submitting proposed dewatering permit conditions in its pending NPDES permit application.
	Jurisdictional Wetland and Stream Impacts/404 Permitting and 401 WQC	August 28, 2015	Identify if project scope results in impacts to jurisdictional wetlands or streams. Obtain JD and pursue 404 permit for impacts from the ACOE. Also, 404 permits are required for working below the ordinary high water mark. If Federal individual permitting is required, obtain 401 WQC.
Waste	Individual Structural Fill Permit	March 27, 2015	Mine Reclamation Owner/Operator to obtain a structural fill permit as set forth in Subpart 3 of Part 2I of Article 9 of the Coal Ash Management Act
	Dam Safety Approvals	August 28, 2015	Hauling and excavation activities must not impact a jurisdictional dam or dike. Activities are initially staying 50 feet away from the jurisdictional dike. Breaching of dike will require Dam Safety approval.
Local Ordinances	Site specific Nuisance/Noise/Odor/Other Requirements including DOT and FERC Requirements	N/A	No local nuisance requirements identified.

XI. Contracting Strategy

The Ash Management Program strategy is to engage multiple contractors, to drive competition, system wide innovation and the collection of best practices. During the initial phase (Phase I) of ash removal at Riverbend, L.V. Sutton, Dan River and Asheville, the Company will award the excavation, transportation, and disposal of the Ash to a single contractor for each site. The result may be two to three contractors, with each contractor having responsibility for one, or more sites, working on a firm fixed per ton price basis. The contracting strategy will shift for Subsequent Phase(s), and potentially during Phase 1, as the Company and the selected contractors recognize enhancements that can increase productivity or drive unit cost lower. Duke Energy's core values of safety and quality are non-negotiable and will not be compromised in order to increase productivity or generate cost savings.

In summary, the Company's contracting strategy will provide the most effective combination of ash removal, transportation, disposition, and beneficial reuse options balancing strategic intent, cost, and schedule. The health and safety of workers, the communities, and environment will not be sacrificed to achieve these goals.

XII. Environmental, Health, and Safety Plan

Protecting workers, the public, the community, and the environment

Duke Energy is committed to the health, safety and welfare of employees, contractors and the public; and to protecting the environment and natural resources. During all phases of the project work, Duke Energy and its contractors will follow the Duke Energy Safe Practices; the ABSAT Environmental, Health, and Safety (EHS) supplement document, and any additional requirements. Occupational health and safety expectations include oversight and continuous improvement throughout the project.

The project will include comprehensive environmental, health and safety plans encompassing all aspects of the project work including at the plant, in transit and at the final destination as needed. The project is committed to minimizing public and environmental impacts.

XIII. Communications Plan

Many different external stakeholders including neighbors, government officials and media have an interest in this project. For example, there is the potential for facility neighbors and the general public to see or experience construction-related impacts such as truck traffic, landscape changes, or noise. The Company is committed to

providing information by proactively communicating about the Project activities to potentially affected parties and responding to inquiries in a timely manner.

The Project team will coordinate with Duke Energy's Corporate Communications Department to develop a comprehensive external communications plan tailored to the specific needs of each phase of the project.

XIV. Glossary

Term	Definition
ABSAT	Duke Energy organization acronym for Ash Basin Strategic Action Team
Ash Basin	Synonymous with Coal Combustion Residual Impoundment. A topographic depression, excavation, or dammed area that is primarily formed from earthen materials; without a base liner approved for use by Article 9 of Chapter 130A of the General Statutes or rules adopted thereunder for a combustion products landfill or coal combustion residuals landfill, industrial landfill, or municipal solid waste landfill; and an Area that is designed to hold accumulated coal combustion residuals in the form of liquid wastes, wastes containing free liquids, or sludge, and that is not backfilled or otherwise covered during periods of deposition.
Ash Ponds	Coal Combustion Residual stored in wet impoundments or ponds
Ash Stack	Ash storage area located at the south end of the Primary Ash Basin
Beneficial and Beneficial Use	Projects promoting public health and environmental protection, offering equivalent success relative to other alternatives, and preserving natural resources
Bottom Ash	The agglomerated, angular ash particles formed in pulverized coal furnaces that are too large to be carried in the flue gases and collect on the furnace walls. Bottom Ash falls through open grates to an ash hopper at the bottom of the furnace.
Bulk Water	Water above the ash contained in the ash basin. Synonymous with free water
Cinder Pit	Area located northeast of the Riverbend Coal Pile containing predominately dry cinders
Coal Ash Excavation Plan	Plan required by NC DENR letter dated August 13, 2014 including a schedule for soil and sedimentation erosion control measures, dewatering, and the proposed location of the removed ash
Coal Ash Management Act of 2014	North Carolina Session Law 2014-122

Term	Definition
Coal Combustion Residuals (CCR)	Residuals, including fly ash, bottom ash, boiler slag, mill rejects, and flue gas desulfurization residue produced by a coal-fired generating unit
Decanting	The act of removing water from ash
Dewatering	The act of removing bulk and entrapped water from the ash basin
Dewatering Plan	Engineered plan and the associated process steps necessary to dewater an ash basin
Duke Safe Work Practices	Document detailing the Duke Energy safety guidelines
Engineer of Record	Duke Energy or 3rd party contracted engineer responsible for final verification of specific plan actions and documents
Entrapped Water	Flowable water below the ash surface which creates hydrostatic pressure on the dam
Excavation Activities	Tasks and work performed related to the planning, engineering and excavation of ash from an ash basin
Excavation Plan	Refer to Coal Ash Excavation Plan
Factor of Safety	In reference to dam safety, the ratio of the forces or moments resisting mass movement to the forces or moments tending to produce mass movement
Free Water	Water above the ash contained in the ash basin. Synonymous with bulk water
Fly Ash	Very fine, powdery material, composed mostly of silica with nearly all particles spherical in shape, which is a product of burning finely ground coal in a boiler to produce electricity and is removed from the plant exhaust gases by air emission control devices.
Grading Plan	Document detailing the final elevation, drainage and lay of the excavated area

Term	Definition
Level 1 Schedule	Schedule view that shows the main milestones to complete the project
NPDES	National Pollutant Discharge Elimination System
NPDES Permit	A permit that regulates the direct discharge of wastewater to surface waters
Off-Site Facility	A structural fill or mine reclamation for the long term storage of coal combustion residuals
Permitting	Federal, state, county or local government authorizing document
Primary Ash Basin	Western cell of the Ash Basin system located at Riverbend on the northeast side of the property (Primary Dam # GASTO-97)
Secondary Ash Basin	Northern cell of the Ash Basin system located at Riverbend on the northeast side of the property (Secondary Dam # GASTO-98)
Work Plan	Document detailing activities to accomplish a specific task or scope of work

XV. Reference Documents

Ref	Document	Date
1	Letter to Duke Energy, Request for Excavation Plans	August 13, 2014
2	Coal Ash Management Act of 2014	September 20, 2014
3	Erosion & Sedimentation Control Plan	July 3, 2014