

L.V. Sutton Electric Plant

Coal Ash Excavation Plan



2015 Update

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I. Statement of Purpose

Duke Energy Progress, Inc. (Duke Energy, or the Company) is required by Part II, Section 3(b) of the Coal Ash Management Act of 2014 (Session Law 2014-122) (Coal Ash Act or Act) to close, in accordance with Part II, Section 3(c), the coal combustion residuals (CCR) surface impoundments located at the L.V. Sutton Electric Plant (Sutton or Plant), National Pollutant Discharge Elimination System (NPDES) Permit No. NC0001422, in New Hanover County, as soon as practicable, but not later than August 1, 2019.

This Coal Ash Excavation Plan (Plan) represents Phase I and other subsequent phase(s) activities to satisfy the requirements outlined in Part II, Sections 3(b) and 3(c), Subparagraphs 1 and 2 of the Act and the requests set forth in the North Carolina Department of Environmental Quality's (NC DEQ) August 13, 2014 letter titled "Request for Coal Ash Excavation Plans for Asheville Steam Electric Generating Plant, Dan River Combined Cycle Station, Riverbend Steam Station, L.V. Sutton Electric Plant" (NC DEQ Letter).

The NC DEQ Letter specifically requests that the Plan include 1) soil and sedimentation erosion control measures, 2) dewatering, and 3) the proposed location(s) of the removed ash. These requirements are found in this updated Plan. The NC DEQ Letter was sent by the North Carolina Department of Environment and Natural Resources, which was renamed North Carolina Department of Environmental Quality by Session Bill 2015-241.

This is a revision of the Phase I Excavation Plan dated November 13, 2014, which covers the first 27 months of ash basin excavation activities, including the initiation of basin dewatering, site preparation, ash basin preparation, and ash removal from the basins at Sutton. Phase I is defined as December 2014 through March 2017. The Plan will generally be updated and submitted to NC DEQ annually.

The Plan covers some of the work required by Part II, Sections 3(b) and 3(c) of the Coal Ash 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 basins, its ultimate approval is an action not specifically required by statutory, regulatory, or other applicable authority.

The precise scope of work in excavating the ash basins has been determined by applicable laws, rules, permits, and approvals that control the activities to be performed under the Plan. There are several external and internal factors that could potentially affect the precise scope of the work to be performed under the Plan in Phase I. As a

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consequence, neither the submittal of this Plan nor its acknowledgement by NC DEQ should be taken as requiring actions different from such applicable requirements. Duke Energy submits this Plan to NC DEQ based on the understanding that it may be necessary to take actions that deviate from the Plan in the future, and the Company reserves the right to make such changes after NC DEQ's acknowledgement of the Plan.

II. General Facility Description

Sutton is located in New Hanover County near Wilmington, NC, situated between the Cape Fear River to the west and the Northeast Cape Fear River to the east. Sutton was a three-unit, 575 megawatt (MW) coal-fired power plant. The Plant operated from 1954 until retirement of the coal-fired units in November 2013. Upon retirement of the coal-fired units, a new 625 MW gas-fired unit began operations.

There are two CCR basins—the 1971 and 1984 Basins—and a large Cooling Basin. Both the 1971 and 1984 Basins contain fly ash, bottom ash, boiler slag, stormwater, ash sluice water, coal pile runoff, and low volume wastewater. The Cooling Basin is accessible to the general public and is used for recreational purposes. The lake was classified as Waters of the State on November 5, 2014. Two other areas that contain CCR material are the Lay of Land Area (LOLA) and the 1971 Borrow Area. The LOLA consists mostly of bottom ash and soil, while the 1971 Borrow Area consists of fly and bottom ash.

1971 Ash Basin

The 1971 Basin was operated from 1971 to 1985. It was opened again in 2011 for temporary use during repair work and ash removal activities. The 1971 Basin is unlined and was initially constructed with a crest elevation of 18 feet mean sea level (msl), which was raised in 1983 to 26 msl. An area underneath the footprint of the 1971 Basin contains additional CCR materials and is referred to as the 1971 Borrow Area. The 1971 Basin and the Borrow Area contain approximately 3.5 million tons of CCR material. The southern basin dikes of the 1971 Basin contain ash and will be required to be excavated as part of final closure.

1984 Ash Basin

The 1984 Basin was operated from 1984 to 2013. The 1984 Basin was constructed with a 12-inch thick clay liner at the basin bottom, which extends along the side slopes where it is protected by a 2-foot thick sand layer. The 1984 Basin crest elevation is 34 feet msl. In 2006, an Interior Containment Area (ICA) was constructed within the 1984 Basin with a crest elevation of 42 feet msl. The 1984 Ash Basin contains approximately 2.8 million tons of CCR material.

LOLA

The LOLA is located between the discharge canal and the coal pile. It is believed that the presence of CCR in this area may have been due to Plant operations between approximately 1954 and 1972. A significant portion of this area toward the discharge canal is heavily vegetated, while the portion adjacent to the coal pile storage area was used to locate fuel oil storage tanks. The LOLA is on the North Carolina Inactive Hazardous Waste Sites Priority List. This area contains approximately 840,000 tons of CCR and soil mixture at depths of two to 15 feet. Both the LOLA and the LOLA dikes, which also contain ash, will need to be excavated as part of final closure.

Current Operating Permit Details

The Cooling Basin, 1971 Basin, and 1984 Basin are operated under NPDES Permit No. NC0001422 to regulate effluents to the Cape Fear River. Additionally, the dams of the Cooling Basin, 1971 Basin, and 1984 Basin are listed under the NC DEQ Dam Safety Program. The dam identification numbers for the Cooling Basin, 1971 Basin, and 1984 Basin are NEWHA-003, NEWHA-004, and NEWHA-005, respectively. The dam inventory lists the Cooling Basin and 1971 dams as exempt. The 1984 dam is listed as impounding, hence regulated. In 2014, these dams were re-rated as high hazard by NC DEQ. The 2006 ICA constructed within the 1984 Basin was permitted and used as a “basin within a basin,” where an interior dam was constructed on top of the CCR within the basin; sluiced CCR was excavated from rim ditches, placed within the interior basin, and compacted to heights that are above the exterior basin dams. This operation was discontinued before reaching the permitted final grades when the Plant was shut down in November 2013.

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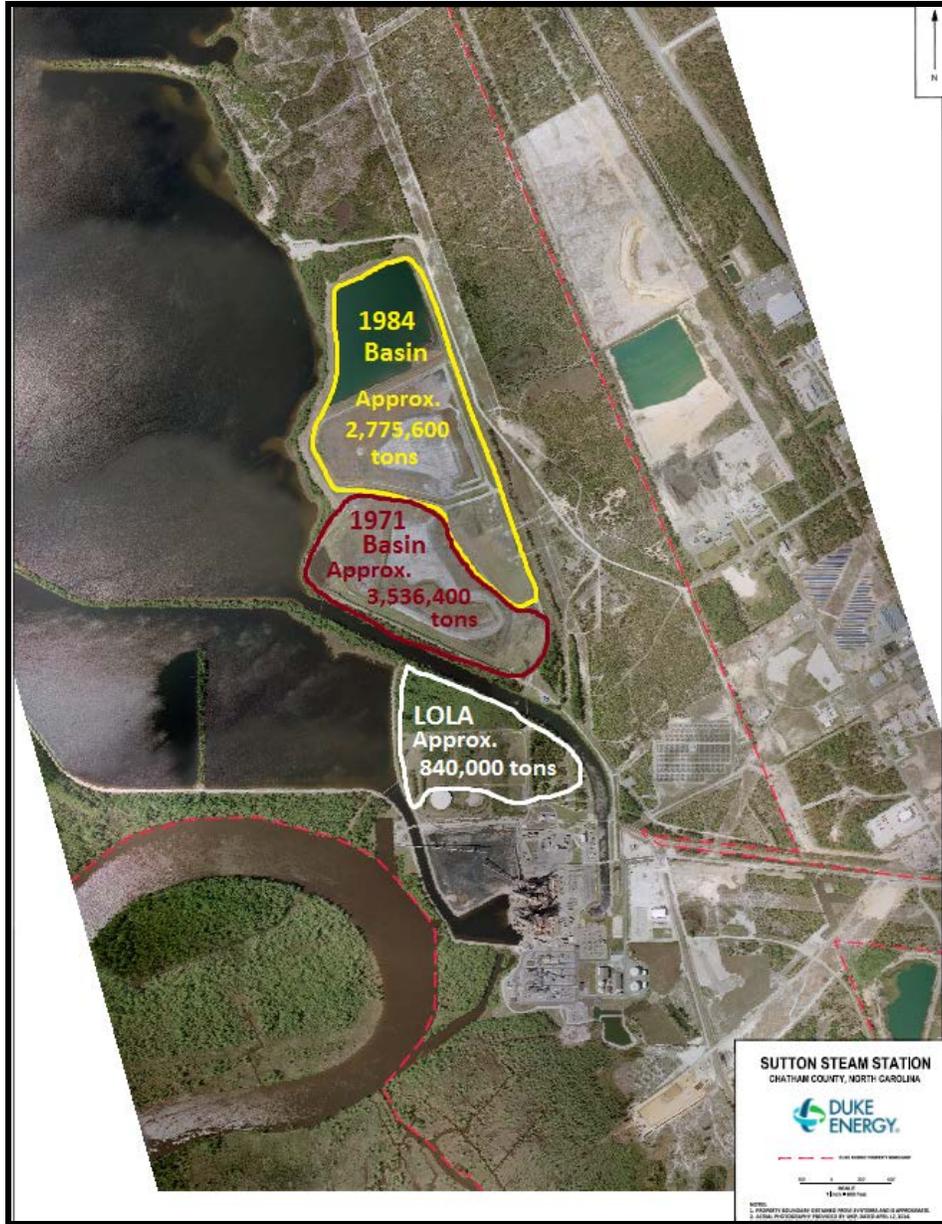


Figure 1: L.V. Sutton Electric Plant

III. Project Charter

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

Dewatering of the ash basins and the removal of ash from the site is being performed within project phases, Phase I and subsequent phase(s). Phase I includes project mobilizing at the site, site preparation and infrastructure construction, dewatering, ash excavation to an off-site location, and completion of any other subsequent permitted activities.

A dewatering plan for the ash basins has been completed and contracts have been issued to implement the dewatering plan. Duke Energy has submitted an application to modify its NPDES wastewater permit to include controls to be implemented during dewatering activities. Dewatering will begin once receipt of the modified permit is received and required treatment components are in place.

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, construction of systems and infrastructure to remove and transport the ash, development of new storage options, and completion of additional required permitting that may be necessary for ash removal from the ash basins. Knowledge and opportunities for program improvement obtained during Phase I of the project will be applied to the subsequent phase(s).

Under this Plan, the Company began removing ash to an off-site location while simultaneously developing an on-site landfill in order to meet the closure requirement mandated in the Coal Ash Act. Permits to construct and operate the landfill must be received no later than February 2016 and November 2016, respectively, in order to make the on-site landfill a viable option to comply with the mandatory closure date of August 1, 2019.

Project Charter Objectives

Phase I Objectives

1. Initiate the removal of ash from the Sutton site
2. Begin dewatering of the ash basins
3. Development of option(s) for proposed ash disposal or beneficial use locations
4. Gain knowledge and opportunities for program improvement that can be applied to the subsequent phase(s)
5. Complete a work scope and award a contract to support ash basin closure by August 2019
6. Validate production rates to meet project requirements

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7. Develop and construct the infrastructure to remove and transport the ash
8. Initiate the development and permitting of the on-site landfill
9. Obtain permit to construct on-site landfill by February 2016
10. Obtain permit to operate the on-site landfill by November 2016

Subsequent Phase(s) Objectives

1. Continue to dewater the ash basins
2. Remove ash from the 1971 Basin, 1984 Basin, and the LOLA
3. Construct, operate, and close cells for the on-site landfill

Project Charter Scope

Phase I Scope

1. Finalize off-site end location for ash relocation
2. Obtain applicable permits for Phase I
3. Install required site haul roads
4. Prepare and install rail load out spur for transportation by rail
5. Prepare and install truck load out and truck wash for transportation by truck
6. Install and maintain site erosion and sediment control measures
7. Perform site preparation for ash basin ash removal
8. Perform site preparation for the basin dewatering (both 1971 and 1984 Basins)
9. Install a wastewater treatment system to facilitate dewatering discharge requirements
10. Reroute approximately two miles of the Sutton Lake public boat ramp access road
11. Begin bulk dewatering of the 1984 and 1971 Basins
12. Excavate and transport approximately 2.25 million tons of ash from the 1984 Basin and the 1971 Basin to an approved landfill, beneficial use facility, or structural fill location
13. Engineer plan to stop water inputs into the ash basins
14. Initiate and complete rerouting or elimination of inflows to the ash basins
15. Commence the installation of the basin and lake isolation measures (sheet pile walls) along Sutton Cooling Basin and the discharge canal dikes
16. Complete the engineering for the on-site landfill
17. Modify the lease arrangement for public boat ramp access and construct alternate access
18. Initiate landfill development for the on-site landfill
19. Commence landfill operation for cells 1 and 2
20. Relocate several thousand feet of Piedmont Natural Gas gas line from the LOLA
21. Begin site preparation activities for subsequent phase(s)
22. Plan activities for subsequent phase(s)

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Subsequent Phase(s) Scope

1. Continue to identify and/or develop additional off-site ash storage options
2. Continue to construct, operate, and close the on-site landfill
3. Continue to excavate and transport remaining ash from Sutton to an on-site landfill
4. Obtain remaining required permits for next subsequent phase activities
5. Continue with basin dewatering
6. Continue to excavate and transport approximately an additional 2.5 million tons of ash from the 1984 Basin and the 1971 Basin to an approved landfill, beneficial use facility, or structural fill locations.
7. Continue the installation of the discharge canal isolation measures (sheet piles) around the LOLA
8. Continue the installation of the isolation measures (sheet piles) around the 1971 Basin southern dikes
9. Dredge and transport approximately 1.6 million tons of material from the 1971 Borrow Area
10. Excavate and transport the 840,000 tons of material from the LOLA;
11. Complete closure activities for the 1971 Ash Basin and the 1984 Ash Basin as outlined in Part II, Sections 3(b) and 3(c), Subparagraphs 1 and 2 of the Coal Ash Act. The LOLA will be completed as part of overall site closure, but is not subject to Part II, Sections 3(b) and 3(c), Subparagraphs 1 and 2 of the Coal Ash Act

IV. Critical Milestone Dates

Critical milestones within the Plan are summarized in the table below.

MILESTONES	NO LATER THAN DATE	STATUS
Submit Excavation Plan	November 15, 2014	Completed November 13, 2014
Complete Comprehensive Engineering Review	November 30, 2014	Completed November 30, 2014
Excavation Plan Acknowledgement	February 17, 2015	Completed February 2, 2015
Submit Updated Excavation Plan	December 31, 2015	On track
Commence Work – Ash Removal	Final permit approval + 14 Days	Completed October 30, 2015
Receive NPDES Wastewater Permit	December 11, 2015	Forecasted December 11, 2015
Receive Permit to Construct On-site Landfill	February 29, 2016	Additional work was required for the landfill site suitability permit
Submit Updated Excavation Plan	December 31, Annually	On track

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MILESTONES	NO LATER THAN DATE	STATUS
Receive Permit to Operate On-Site Landfill	November 30, 2016	On track
Eliminate Stormwater Discharge into Impoundments	December 31, 2018	On track
1971 and 1984 Basins closed pursuant to Part II, Sections 3(b) and 3(c) of the Coal Ash Act	August 1, 2019	Challenged due to significant technical complexity, quantities, and production requirements

V. Erosion and Sedimentation Control Plan

The Project currently has two active Erosion and Sedimentation Control plans (E&SC), Rail Road Extension (NEWHA-2016-023) and Boat Road Relocation (NEWHA -2016-008). The Company is pursuing the Landfill Construction Permit and its associated erosion and sedimentation control plan. Additional applications are expected to be submitted during this phase as the project planning develops.

Modifications from E&SC plans for subsequent phase(s) will be approved by NC DEQ prior to installation and initiation of subsequent phase work.

The approved contractor will install the E&SC measures indicated in the plan. All control measures will be maintained through the project in accordance with the E&SC plans.

VI. Dewatering Plan

The Sutton ash basins will be dewatered to facilitate the removal of ash and to mitigate risk. Engineering analysis has shown that lowering the water below the level of ash within each basin does not improve the factor of safety against failure of the associated dam; therefore, removal of entrapped water is not required.

An engineered Dewatering Plan for Sutton has been developed, and dewatering will begin once the modified permit is received and required treatment components are in place.

The free water in the 1971 Basin and the 2006 ICA will be pumped to the 1984 Basin. The maximum free water drawdown rate will be one foot over seven days.

In accordance with the modified wastewater permit, the 1984 Basin will be discharged to the permitted outfall. The maximum free water drawdown rate will be one foot over seven days.

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VII. Proposed Location(s) for Removed Ash

Phase I of the Plan will include the excavation and removal of approximately 2.25 million tons of ash from Sutton. Subsequent phase(s) will remove the remaining ash at the site. Ash removed from the site will be transported by the contractor to permitted facilities. The ash storage location will be managed and maintained to ensure environmental compliance with applicable rules and regulations.

Phase I: Storage Sites

Brickhaven Structural Fill and the on-site landfill at Sutton have been identified as the primary locations for Phase I and subsequent phase(s).

STORAGE SITE	LOCATION	APPROXIMATE AMOUNT (TONS)	CCR STORAGE
Brickhaven Structural Fill	Moncure, NC	2,000,000	Structural Fill
On-Site Landfill	Wilmington, NC (Sutton)	250,000	Landfill

Brickhaven Structural Fill

The Brickhaven Structural Fill is located at the Brickhaven Mine near the City of Moncure in Chatham County, NC. It resides on approximately 299 acres. Ash will be transported and will be used as fill material for a structural fill project at the reclaimed mine. The Brickhaven Structural Fill will comply with the requirements set forth in Part III, Sections 4(b) and (c) of the Coal Ash Act.

Sutton On-Site Landfill

The proposed on-site CCR landfill will be operated in support of closure and decommissioning activities at Sutton and will be utilized for the disposal of on-site generated CCR. The project includes the installation of a liner and leachate collection system for the landfill. The proposed landfill footprint is approximately 100 acres and will provide approximately 8.3 million cubic yards (approximately 10 million tons, assuming a density of approximately 1.2 tons/cy) of disposal capacity over a period of approximately 12 years; however, construction of the cells is expected to be complete within ten years. The maximum elevation of the proposed landfill will be approximately 112 feet North American Vertical Datum (NAVD88) with an average top-deck elevation equal to 108 feet NAVD88.

Contingent Plan: Storage Sites

Colon Structural Fill

The Colon Structural Fill is located at the Colon Mine in Sanford, NC. Ash will be transported from Sutton to the Colon Structural Fill to be used as fill material for a structural fill project at the reclaimed mine.

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

The Company continues to develop and evaluate contingency storage locations in the event this scenario becomes unobtainable. Contingency plans currently being developed include assessing alternate ash storage locations and beneficial use.

Subsequent Phase(s): Storage Sites

The project team will utilize lessons learned from Phase I to develop an off-site disposal strategy and/ or alternative beneficial use 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 a system to optimize pickup, transport, drop-off, and beneficial use of ash

VIII. Transportation Plan

Ash will be transported from the site via rail car and truck to the off-site facility. Transportation of the CCR will be conducted by approved transporters and meet Department of Transportation (DOT) and other applicable federal, state, and local regulations.

Phase I: Transportation

For Phase I, all CCR transported off-site will be transported by rail and truck from Sutton to the Brickhaven site. Rail car loading operations will be completed with a crew working typically 12 hours per day, seven days per week. Plans have been implemented to install a rail loading system at Sutton, which will be used to transport ash to the Brickhaven site.

Contingent Plan: Transportation

In the event of rail transportation disruption, truck transportation remains a contingency option.

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.

IX. Environmental Permitting Plan

Phase I will include initiating excavation and removal of ash from the 1984 and 1971 Basins to an offsite location. 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. Phase I will include permitting activities for subsequent phases.

Excavation of ash creates potential for stormwater impacts. Since Sutton has no point source discharges consisting solely of industrial stormwater, NC DEQ determined that an individual industrial stormwater permit is not necessary. Instead, NC DEQ has included internal stormwater outfalls and the requirement to develop a stormwater pollution prevention plan as a requirement of the NPDES wastewater permit. Future modifications to the permit/plan will be managed as necessary.

NC DEQ has determined that removal of dry ash from the Sutton ash basins can be regulated via the Construction Stormwater General Permit. NC DEQ has determined that removal of dry ash from the Sutton ash basins can be regulated via the construction stormwater general permit. Ash removal activities were permitted when NC DEMLR-approved erosion control plan NEWHA-2016-023.

The Company has requested that NC DEQ confirm that modification of the NPDES Wastewater Permit is not required to initiate removal of free water from inactive ash basins. NC DEQ is working with the United States Environmental Protection Agency with a goal of identifying the regulatory framework that will allow the removal of free-standing water from inactive basins to move forward. The Company has submitted additional information to NC DEQ for its consideration to support incorporating interstitial dewatering requirements into the pending NPDES permit application.

There are no jurisdictional wetlands/streams associated with the removal of ash from the 1984 and 1971 Basins during Phase I. Future wetland/stream impacts and jurisdictional determinations will be managed through the United States Army Corps of Engineers with particular attention paid to the difference between jurisdictional

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wetlands/streams under Section 404 and those arising from Section 401 waters. Any Section 404 individual permitting will require Section 401 Water Quality Certification by NC DEQ.

Sutton ash is not classified as a DOT hazardous material.

Subsequent phase(s) will include dewatering and continued excavation and removal of ash from the 1984 and 1971 Basins and the LOLA. Subsequent phase(s) also include(s) the continued construction of the on-site landfill.

Before shipping ash to a third-party RCRA 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 in accordance with NC DEQ requirements. Fugitive dust will be managed to mitigate impacts to neighboring areas. Impacts to threatened and endangered species will be avoided.

Permit Matrix

MEDIA	PERMIT	RECEIVED DATE / TARGET DATE	COMMENTS
Water	NPDES Wastewater Permit – Major Modification	December 11, 2015	NC DEQ has indicated dewatering activities, including free water removal, will require NPDES wastewater permit modification. Based on this requirement, the company has applied for a permit modification to specifically allow decanting of free water and dewatering of interstitial water. Application was made in January, 2015. The Company has submitted proposed dewatering permit conditions in its pending NPDES permit application.
	Jurisdictional Wetland and Stream Impacts/ 404 Permitting and 401 WQC	June 2016	Four cells in the new Sutton landfill have identified jurisdictional wetland/stream impacts in Phase I. Based on wetland sequencing; wetland permitting should not delay initial construction permits and early cell construction.
Dam Safety	Dam Decommissioning Request Approval	November 30, 2016	Initial transporting and excavation activities will not impact a jurisdictional dam or dike. Breaching of any dike will require Dam Safety approval. This approval will occur in later phases.
Waste	Individual Structural	October 15, 2015	Mine reclamation Owner/Operator

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MEDIA	PERMIT	RECEIVED DATE / TARGET DATE	COMMENTS
	Fill Permit to Operate		obtained a structural fill permit as set forth in Part II, § 130A-309.215 of the Coal Ash Act.
	Site Suitability Report	July 2, 2015	Site Suitability obtained for Sutton landfill and the Brickhaven Mine offsite structural landfill. Previous date was March 31, 2015. Change was related to additional requirements to complete the report prior to submittal.
	Permit-to-Construct	February 23, 2016	Must receive permit to begin construction and corresponding E&SC approval.
	Permit-to-Operate	November 23, 2016	Must provide Construction Quality Assurance Report and then receive the permit before operation.
Other Requirements	Site Site-Specific Nuisance/Noise/Odor /Other Requirements, including DOT and FERC Requirements	N/A	None identified.

X. Contracting Strategy

The Ash Management Program strategy is to engage multiple contractors, drive competition, create system-wide innovation, and develop a collection of best practices. The Company has engaged specialized contractor(s), who are experienced in coal ash excavation, transportation, and storage, and continues to evaluate other potential contractors. The Company provides in-depth oversight, coordination, and monitoring of the contractors to ensure the work is performed appropriately. Duke Energy's core values of safety, quality, and protection of the environment are non-negotiable and will not be compromised in order to increase productivity or generate cost savings. The Company continues to evaluate alternate approaches, methods, and contracting solutions and will adjust our strategy, as necessary.

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XI. Environmental, Health, and Safety Plan

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

The Company 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, the Company and its contractors will follow the Duke Energy Safe Work Practices Manual, the ABSAT Environmental, Health, and Safety supplement document, and any additional requirements. Occupational health and safety expectations include oversight and continuous improvement throughout the project.

The project includes 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.

In addition to adhering to all applicable environmental, health, and safety rules and regulations, Duke Energy and its contractors will focus on ensuring the safety of the public and protection of the environment during each phase of the project.

XII. Communications Plan

The project team is coordinating 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. Many different external stakeholders, including neighbors, government officials, and media have an interest in this project. 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.

XIII. 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

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TERM	DEFINITION
	backfilled or otherwise covered during periods of deposition.
Ash Stack	An ash feature external to the 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
Coal Ash Excavation Plan	Plan required by NC DEQ 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
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
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 Energy Safe Work Practices Manual	Document detailing the Duke Energy safety guidelines
Engineer of Record	Duke Energy or third-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	Tasks and work performed related to the planning, engineering, and

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TERM	DEFINITION
Activities	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.
LOLA	Lay of Land Area
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

XIV. 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