



Permit No.	Scan Date	DIN
P1298-Dan River	September 18, 2015	25025

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RECEIVED
September 15, 2015
Solid Waste Section
Asheville Regional Office

September 15, 2015

Tom Reeder
Assistant Secretary for the Environment
North Carolina Department of Environment & Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Subject: Duke Energy Soil Excavation Endpoints – Asheville/Cliffside/Dan River

Dear Tom:

Duke Energy is planning for closure of multiple coal combustion residuals surface impoundments on a staged schedule, as required by the Coal Ash Management Act of 2014 (CAMA). Impoundment closure is one element of a larger coal ash management program that also involves replacement of coal generation with natural gas generation, rerouting wastewater streams, and constructing lined landfills for disposal of excavated ash. As we have discussed with you on several occasions, most recently on August 27, 2015, Duke Energy needs to make near-term decisions to support project planning on three sites where industrial infrastructure will be placed in the footprint of a closed impoundment. Specifically, we are planning a:

- Combined Cycle Plant in the Asheville Ash Pond footprint following excavation
- Lined Wastewater Retention Basin in the Cliffside/Rogers Unit 1 – 4 Inactive Basin footprint following excavation
- Landfill in the area of the Dan River Ash Stacks footprint following excavation

Early identification of excavation endpoints for impacted soils located beneath the surface impoundments at these three sites is critical to our planning process, because the process used to determine the soil removal extent will affect the timetable on which we can begin construction activities.

Relevant Authorities

The two regulatory programs most relevant to the determination of excavation endpoints are CAMA and the Groundwater Rules. For these three sites, we are proposing pre-determined endpoints designed to protect water quality, combined with deed restrictions established at the completion of the project based on the end-use of the area. We think this proposal is consistent with the authorities set out here.

1. CAMA

CAMA contains a comprehensive program that speaks both to the generation and management of coal combustion residuals as well as the closure of surface impoundments. For generation and management, the law includes deadlines for stopping discharges of stormwater to surface impoundments and conversion to dry ash disposal or facility retirement. See G.S. 130A-309.210.

CAMA does not contain much detail on excavation at closure. The law's emphasis is clearly on protection of groundwater. However, there are several relevant provisions. CAMA addresses the closure of the four highest priority sites (Dan River, Asheville, Riverbend, and Sutton) in Section 3(b), which requires three tasks: (1) dewatering; (2) removal of coal combustion residuals; and (3) corrective action to restore groundwater quality. Notably, Section 3(b) requires the removal of CCRs but not of soil. Additionally, for high-risk sites, CAMA has two options: (1) for conversion to industrial landfills, it requires removal of CCRs and contaminated soils (G.S. 130A-309.214(a)(1)(a)); and (2) for closure, remove all coal combustion residuals from the impoundment but no mention of soil (G.S. 130A-309.214(a)(1)(b)). For all sites, regardless of risk classification, G.S. 130A-309.214 states, "If corrective action to restore groundwater has not been completed pursuant to the requirements of G.S. 130A-309.211(b), the proposed closure plan shall include provisions for completion of activities to restore groundwater in conformance with the requirements of Subchapter L of Chapter 2 of Title 15A of the North Carolina Administrative Code."

CAMA also provides instructions on the information that must be included in a closure plan. The list of information includes the results of groundwater modeling to be used to predict the effect of closure activities on groundwater quality (G.S. 130A-309.214(a)(4)(d)), and an assessment of the need for institutional controls (130A-309.214(a)(4)(n)).

2. Groundwater Rules

The groundwater rules address soil remediation goals under the umbrella of groundwater corrective action by requiring

[r]emoval, treatment or control of secondary pollution sources which would be potential continuing sources of pollutants to the groundwaters such as contaminated soils and non-aqueous phase liquids. Contaminated soils which threaten the quality of groundwaters must be treated, contained or disposed of in accordance with applicable rules. The treatment or disposal of contaminated soils shall be conducted in a manner that will not result in a violation of standards or North Carolina Hazardous Waste Management rules.

15A NCAC 02L .0106(f)(4). (This section is scheduled for revision, but the proposed changes should not affect this discussion.)

Duke Energy Proposal for Soil Excavation Endpoints

Duke Energy is proposing an approach that, consistent with the above authorities, (a) removes coal combustion residuals by excavation, (b) protects groundwater by removing and controlling soils as a secondary source of pollution, and (c) protects human health by minimizing exposure through a combination of physical barriers and institutional controls (i.e., land use restrictions).

Specifically, soil contamination will be addressed by excavation of all ash to a point determined by visual observation. Duke Energy has considered several options for determining the extent of excavation. Our preferred method is to remove all visible ash and then remove an additional 1-ft depth of soil unless it is impossible to remove the additional 1-ft soil layer due to the depth of rock (which is likely to be the case at the Asheville site.) Visible ash will be determined by inspection in the field conducted by a technician experienced in soil classification.

Soils left in place would be sampled (with a minimum of 1 soil sample collected for each acre of excavation) and analyzed for inorganics using USEPA Methods 6010/6020. The data would be used to evaluate the impact of any remaining constituents of concern, using a groundwater model, to assist in the determination of groundwater corrective action. The evaluation of potential impacts to groundwater would be performed using the groundwater models developed for the groundwater corrective action plans in combination with the end-use scenarios planned for these three sites.

Groundwater corrective action will be designed in part based on estimates of remaining soil constituents and effects of land use (e.g., low permeability caps, rerouted site drainage, vegetation). The removal of impacted soil will reduce the contribution of constituents of concern to groundwater. Since the ash basins have impacted groundwater, they will be subject to continued groundwater monitoring and will be subject to the corrective action developed as a result of the comprehensive site assessments. The corrective action plan would consider the potential impacts to the site groundwater conditions from any impacted soil that may remain after completion of site excavation. Human exposure to remaining soils will be minimized by immediate construction of new facilities, addition of clean cover soil over areas not covered by new facilities, and by use of appropriate land use restrictions tailored to site conditions.

This approach would ensure protection of both human health and the environment while allowing excavation with a known plan that defines excavation endpoints based on field analysis instead of a more time consuming laboratory analysis. In the context of a much larger program that will effectively eliminate coal ash as an environmental issue in North Carolina, Duke Energy believes that expediting the excavation process best achieves the goals of CAMA and is consistent with CAMA's requirements to remove CCRs, and build a closure plan that includes groundwater modelling and considers institutional controls.

Summary of Request and Path Forward

In summary, Duke Energy is requesting approval of this proposal described above to

- Remove all visible ash and an additional 1-ft of soil below the ash layer (unless additional soil removal is not technically possible due to the depth of rock.
- Perform soil sampling and laboratory analysis after completion of excavation, and use the analytical results to evaluate groundwater impacts and make any necessary adjustments to the groundwater corrective action plan.
- Expeditiously implement physical site controls to minimize contact between remaining soils and surface and groundwater (e.g., caps, rerouted site drainage, vegetation).

We are requesting approval for the proposal described above on only these three sites to enable project planning to be advanced for a:

- Combined Cycle Plant in the Asheville Ash Pond footprint following excavation
- Lined Wastewater Retention Basin in the Cliffside/Rogers footprint Unit 1 – 4 Inactive Basin following excavation
- Landfill in the area of the Dan River Ash Stacks footprint following excavation

Although we expect site closure plans for other Duke Energy sites where excavation is performed to propose similar approaches for the extent of soil removal, we would propose that the extent of soil removal for those sites to be evaluated through the review of closure plans.

Sincerely,



Harry Sideris
Duke Energy, Senior Vice President
Environmental, Health & Safety