NCDEQ Coal Ash Impoundment Closure Plan Decision

Marshall Steam Station

April 29, 2020

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On December 31, 2019, Duke Energy submitted its proposed Closure Plan for the Marshall Steam Station ("Marshall") as required by the Coal Ash Management Act ("CAMA"). The North Carolina Department of Environmental Quality ("NCDEQ") conducted a thorough evaluation of this proposed Closure Plan. In addition to its own evaluation, NCDEQ held a public hearing, circulated the proposed closure plan for public comment, reviewed written public comments and analyzed site specific information provided by Duke Energy and the public.[1] Based on this evaluation and the corrective actions that will complement closure, NCDEQ finds that the proposed Closure Plan is protective of public health, safety, and welfare; the environment; and natural resources and otherwise complies with the requirements of CAMA. Consequently, NCDEQ hereby approves the proposed Closure Plan for Marshall.

Background:

CAMA sets forth a process for closure of coal combustion residuals ("CCR") impoundments in North Carolina. Based on certain statutory factors, impoundments must be classified low, intermediate or high risk. N.C. Gen. Stat. § 130A-309.213. For impoundments classified as "low risk," such as the CCR impoundment at Marshall, NCDEQ must elect from one of three closure options: (1) excavation; (2) cap-in-place; or (3) closure under the federal CCR Rule. N.C. Gen. Stat. § 130A-309.214(a). Prior to making its election on the closure methodology, NCDEQ received public input on these closure options. In January 2019, NCDEQ held a public meeting near Marshall, and took public comment into February 2019 regarding the closure options considered for the impoundment.

On April 1, 2019, NCDEQ elected excavation as the closure option for the CCR impoundment at Marshall ("Marshall Closure Determination") "because removing the coal ash from the unlined CCR surface impoundment at Marshall is more protective than leaving the material in place." Marshall Closure Determination, p. 1. NCDEQ determined that excavation "is the most appropriate closure method because removing the primary source of groundwater contamination will reduce uncertainty and allow for flexibility in the deployment of future remedial measures." Marshall Closure Determination, p. 1.

Based on its analysis of the available information regarding the groundwater contaminant plume at Marshall, NCDEQ also concluded in its Marshall Closure Determination that a cap-in-place or hybrid closure option could not be incorporated into an approvable Closure Plan. CAMA requires that a closure plan for any impoundment where ash is left in place must "prevent, upon the plan's full implementation, post-closure exceedances of groundwater quality standards beyond the compliance boundary." N.C. Gen. Stat. § 130A-309.214(a)(3)(b). NCDEQ did not believe that this requirement could be met with respect to Marshall. NCDEQ's overall conclusion was

[1] The Hearing Officer's Report is attached as Attachment 1. Public comments and NCDEQ's responses are included in the Hearing Officer's Report. Additional information reviewed by NCDEQ includes, among other things, environmental data contained in the comprehensive site assessment and proposed corrective action plan, permit requirements, the closure options analysis, ongoing groundwater monitoring, groundwater modeling provided by Duke Energy, NCDEQ's Closure Determination for Marshall, and other data relevant to the CAMA requirements.

that "based on the current geographic scope and vertical extent of the groundwater contamination plume, and the modeled extent of the plume in the future, NCDEQ does not believe these two closure options [closure-in-place and hybrid] can meet the requirements of CAMA... ." Marshall Closure Determination, p. 7.

Duke Energy challenged NCDEQ's Marshall Closure Determination along with the closure determinations for five other Duke Energy facilities in the North Carolina Office of Administrative Hearings. During discovery and in discussions with NCDEQ, Duke Energy presented new information, including newly proposed active remedial measures to remediate contaminated groundwater, new groundwater modeling, and additional protective measures. Based on this new information, NCDEQ finds that excavation of the vast majority of coal ash in the CCR impoundment, when coupled with aggressive active remedial action, will prevent post-closure exceedances beyond the compliance boundary. Duke Energy and NCDEQ reached a settlement and executed an agreement to resolve that litigation on December 31, 2019 ("Settlement Agreement"). On February 5, 2020, the Wake County Superior Court entered a consent order consistent with the terms of the Settlement Agreement ("Consent Order"). Pursuant to the terms of the Settlement Agreement and Consent Order, Duke Energy agreed to excavate approximately 16.8 million tons of the coal ash in the CCR impoundment at Marshall to a lined onsite landfill. The coal ash that will be allowed to remain in place is under a permitted structural fill and a permitted landfill, and totals approximately 1 million tons. The Settlement Agreement and Consent Order also require Duke Energy to take additional protective measures for these areas, including constructing stabilization structures that will prevent any lateral movement of coal ash, installing geosynthetic covers to prevent infiltration, and conducting additional groundwater and surface water monitoring. Because some coal ash will remain in place, Duke Energy must utilize active groundwater remediation measures to come into compliance with North Carolina's groundwater standards no later than December 31, 2029. The Closure Plan for Marshall complies with the terms of the Settlement Agreement and Consent Order.

Public process for the proposed Closure Plan:

CAMA required that NCDEQ put the proposed Closure Plan to public notice and conduct a public meeting to explain the Plan. NCDEQ held the public meeting for Marshall on February 26, 2020 and conducted a public comment period through March 18, 2020. During the hearing, five individuals made comments on the Closure Plan. Additionally, NCDEQ received twelve written comments regarding the Closure Plan during the public comment period. All of the commenters generally expressed support for excavating and relocating coal ash into lined landfills. The comments included some concerns for worker safety, requests for additional cancer studies near the facility, whether consumers would pay for the cleanup of coal ash, whether the planned monitoring is sufficient to ensure that no additional contamination occurs, requests for Duke Energy to provide connections to public water for more neighborhoods near the facility and requests for NCDEQ to make sure that the excavation process is done correctly. A discussion of the substantive concerns raised in these comments is included as part of the hearing officer's report.

Evaluation of Closure Plan:

CAMA establishes criteria for NCDEQ's evaluation of Closure Plans. Specifically, CAMA provides that NCDEQ "shall disapprove a proposed Coal Combustion Residuals Surface Impoundment Closure Plan unless the Department finds that the Closure Plan is protective of

public health, safety, and welfare; the environment; and natural resources and otherwise complies with the requirements of this Part." N.C. Gen. Stat. § 130A-309-214(c). CAMA sets forth a list of required contents for Closure Plans, including engineering drawings, schematics, and specifications for the proposed Closure Plan, a description of the provisions for the final disposition of the coal combustion residuals, groundwater modeling, and a description of the plan for post-closure monitoring and care for an impoundment for a minimum of 30 years

NCDEQ finds that under CAMA, Duke Energy's proposed Closure Plan for Marshall is protective of public health, safety, welfare, the environment, and natural resources. In the Closure Plan, Duke Energy proposes to excavate the vast majority of coal ash in the CCR impoundment, which NCDEQ has determined is the most environmentally protective closure option. Because most of the coal ash will be excavated, there will be substantially less primary of the contaminant source remaining that can continue to leach contaminants into groundwater. Further, with the vast majority of the coal ash excavated, there will be additional options available for remediating contaminated groundwater. As explained in the Marshall Closure Determination, "removing the primary source of groundwater contamination will reduce uncertainty and allow for flexibility in the deployment of future remedial measures." Marshall Closure Determination, p. 1.

Since all of the coal ash that will be excavated will be placed in a lined onsite landfill, the need to transport coal ash over public roads or by rail car will be minimized. Such onsite disposal also obviates the need to locate additional communities to accept coal ash. Consequently, NCDEQ finds that disposal of coal ash to an onsite lined landfill is protective of public health and safety and significantly diminishes the environmental impact of excavation.

For the limited area of coal ash that remains in place under the permitted structural fill and permitted landfill, additional protective measures, including stabilization features, synthetic covers, and monitoring will be incorporated. NCDEQ finds that these additional protective measures will ensure that the coal ash remaining in place will not adversely affect public health, safety, and welfare, the environment, and natural resources.

NCDEQ further finds that Duke Energy's proposed Closure Plan for Marshall complies with the other requirements of CAMA. Specifically, NCDEQ has determined that Duke Energy has adequately included all required elements of a Closure Plan (either directly or through incorporation by reference of the proposed Corrective Action Plan for Marshall),[2] including the following:

- site history and history of site operations;
- site maps;
- results of a hydrogeologic, geologic, and geotechnical investigation of the site;
- results of groundwater modeling at the site;
- engineering drawings, schematics, and specifications for the proposed Closure Plan;
- a description of the construction quality assurance and quality control program to be implemented in conjunction with the Closure Plan;
- a description of the provisions for disposal of wastewater and management of stormwater and the plan for obtaining all required permits;
- a list of required permits;
- a description of the provisions for the final disposition of the coal combustion residuals;
- a description of the plan for post-closure monitoring and care for an impoundment for a minimum of 30 years;

[2] Note that this document does not constitute an approval of the proposed corrective action plan for Marshall or any element thereof, NCDEQ will review and take action on that proposal in a separate decision.

- an estimate of the milestone dates for all activities related to closure and post-closure;
- projected costs of assessment, corrective action, closure, and post-closure care; and
- a description of the anticipated future use of the site and the necessity for the implementation of institutional controls following closure.

N.C. Gen. Stat. § 130A-309.214(a)(4).

Conclusion:

NCDEQ approves the proposed Closure Plan for Marshall based on its finding that this Plan "is protective of public health, safety, and welfare; the environment; and natural resources and otherwise complies with the requirements of CAMA."