

INFORMATION SHEET

PRESIDING: Chair Mitchell, Presiding; Commissioners Brown-Bland, Gray, Clodfelter, Duffley, Hughes, McKissick

PLACE: Held Via Videoconference

DATE: Monday, September 14, 2020

TIME: 2:30 p.m. – 5:31 p.m.

DOCKET NOS.: E-7, Sub 1214; E-7, Sub 1213; E-7, Sub 1187

COMPANY: Duke Energy Carolinas, LLC; Duke Energy Progress, LLC

DESCRIPTION: E-7, Sub 1213, In the Matter of Petition of Duke Energy Carolinas, LLC, for Approval of Prepaid Advantage Program; E-7, Sub 1214, In the Matter of Application of Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina; E-7, Sub 1187, In the Matter of Application of Duke Energy Carolinas, LLC, for an Accounting Order to Defer Incremental Storm Damage Expenses Incurred as a Result of Hurricane Florence and Michael and Winter Storm Diego

VOLUME NUMBER: 22

APPEARANCES

(See attached.)

WITNESSES

(See attached.)

EXHIBITS

(See attached.)

COPIES ORDERED: Downey, Culpepper, Holt, Cummings, Edmondson, Grantmyre, Dodge, Jost, Little, Luhr, Force, Townsend, Robinson, Kells, Mehta, Lee, Cress, Ross, Ledford, Smith, Schauer, Heslin, Su, Crystal and Beverly

CONFIDENTIAL TRANSCRIPTS and EXHIBITS ORDERED: Robinson, Heslin, Somers, Kells, Jagannathan, Mehta, Lee, Cress, Ross, Jenkins, Beverly, Ledford, Smith, Crystal, Su, Force, Townsend, Downey, Schauer, Culpepper, Cummings, Dodge, Edmondson, Grantmyre, Holt, Jost, Little, and Luhr

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DOCKET NO.: E-7, Sub 1214

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BEFORE: Chair Charlotte A. Mitchell, Presiding

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Commissioner Daniel G. Clodfelter

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Commissioner Jeffrey A. Hughes

Commissioner Floyd B. McKissick, Jr.

IN THE MATTER OF:

DOCKET NO. E-7, SUB 1214

Application of Duke Energy Carolinas, LLC,
for Adjustment of Rates and Charges Applicable to
Electric Utility Service in North Carolina



DOCKET NO. E-7, SUB 1213

Petition of Duke Energy Carolinas, LLC,
for Approval of Prepaid Advantage Program

DOCKET NO. E-7, SUB 1187

Application of Duke Energy Carolinas, LLC,
for an Accounting Order to Defer Incremental Storm
Damage Expenses Incurred as a Result of Hurricanes
Florence and Michael and Winter Storm Diego

VOLUME 22

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SUPREME COURT OF NORTH CAROLINA

* * * * *

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
PROGRESS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

From the North Carolina
Utilities Commission

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
CAROLINAS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor;
NORTH CAROLINA SUSTAINABLE ENERGY
ASSOCIATION, Intervenor; NORTH
CAROLINA JUSTICE CENTER, NORTH

From the North Carolina
Utilities Commission

CAROLINA HOUSING COALITION,
NATURAL RESOURCES DEFENSE COUNCIL,
and SOUTHERN ALLIANCE FOR CLEAN
ENERGY, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

**AMICUS CURIAE BRIEF OF THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY**

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Cross-Appellant.

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ATTORNEY GENERAL JOSHUA H. STEIN,
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NORTH CAROLINA SUSTAINABLE ENERGY
ASSOCIATION, Intervenor; NORTH
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From the North Carolina
Utilities Commission

CAROLINA HOUSING COALITION,
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Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

**AMICUS CURIAE BRIEF OF THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY**

ISSUES PRESENTED

1. DID THE UTILITIES COMMISSION CORRECTLY
INTERPRET THE GROUNDWATER RULES, IN
PARTICULAR REGARDING WHEN A VIOLATION OF
THE 2L STANDARDS OCCURS?
2. DID THE UTILITIES COMMISSION CORRECTLY
INTERPRET THE COAL ASH MANAGEMENT ACT, IN
PARTICULAR REGARDING THE TRIGGER FOR
MONITORING, ASSESSMENTS AND CORRECTIVE
ACTION UNDER THE ACT?

INTRODUCTION AND SUMMARY¹

Amicus curiae the North Carolina Department of Environmental Quality (the “Department”) requested leave to submit this brief to expound on two aspects of the orders under review in these consolidated cases.² As discussed below, the Utilities Commission has misconstrued two separate provisions of law that are integral to the Department implementing its mandate to protect the state’s vital groundwater resources from contamination.

First, the Utilities Commission indicated that an exceedance of the groundwater standards that triggers a regulatory requirement for corrective action may not be a “violation” of law so long as the responsible party is diligently conducting remediation. If that were the case, the Department would be stripped of certain of its enforcement powers regarding these

¹ Pursuant to Appellate Rule 28(i)(2), the amicus represents that this brief was prepared by the amicus and its counsel with no monetary or other contributions from any other persons or entities.

² For consistency with previous briefs, the Department will refer to Duke Energy Progress and Duke Energy Carolinas as Progress and Carolinas, respectively, and as Duke collectively, with the two orders at issue being referred to as the Progress order (Progress R pp 477-754) and the Carolinas order (Carolinas R pp 825-1226).

exceedances. But it is not correct. Exceedances of the groundwater standards that occur at or beyond established distances from a facility are violations, regardless of whether the responsible party is engaged in corrective action. It is these violations that obligate the responsible party to assess and remedy the violations, and also authorize the Department to take enforcement action.

Second, the Utilities Commission opined that the groundwater assessment and corrective action requirements under the Coal Ash Management Act are triggered by exceedances of groundwater standards. This is incorrect. The assessment and remediation requirements under this act result from mere ownership of a coal combustion residuals surface impoundment.

The Department respectfully urges the Court that, should it be necessary to opine on these issues, the Court's opinion accord with the law as explained below.

ARGUMENT

I. AN EXCEEDANCE OF A GROUNDWATER STANDARD THAT OCCURS AT OR BEYOND THE COMPLIANCE BOUNDARY IS A VIOLATION AND REQUIRES ASSESSMENT AND CORRECTIVE ACTION BY THE RESPONSIBLE PARTY.

The General Assembly has tasked the Environmental Management Commission (“EMC”) and the Department with the responsibility to protect the groundwater in the state. To that end, the EMC has adopted rules that establish maximum allowable groundwater concentrations for nearly 150 chemicals, including carcinogens and acute toxins. 15A N.C. Admin. Code 2L .0202 (hereinafter “2L standards”). The EMC has also adopted a robust regime to ensure that violations of those standards are expeditiously identified and remedied. *Id.* r. 2L .0101 *et seq.* (the “Groundwater Rules”). The EMC, in turn, has authorized the Department to oversee the Groundwater Rules, *id.*, and the General Assembly has vested the Secretary of Environmental Quality with the authority to enforce those rules, N.C. Gen. Stat. § 143-215.6A(a)(1), (6).

When a violation of these standards occurs, the rules mandate that the responsible party assess the situation and remedy the violation. However, in the orders under review in this case, the Utilities Commission indicated that so long as the responsible party is complying with the assessment and

correction action requirements, the party may not be in violation of the standard. (Carolinas R pp 1121-23; Progress R pp 653-55) As demonstrated below, this is incorrect.

A. The finding of a violation of the 2L standards triggers the assessment and remediation requirements.

The Groundwater Rules are clear that any “increase in the concentration of a substance” to a level above a 2L standard may be a “violation.” 15A N.C. Admin. Code 2L .0106(c)-(e). But whether such a concentration is a “violation” and not a mere “exceedance” depends on the circumstances.

The rules differentiate between facilities that have individual permits issued under N.C. Gen. Stat. § 143-215.1 or chapter 130A and those that do not. Facilities with such individual permits have a “compliance boundary.” See id. r. 2L .0101(3), .0107. A compliance boundary is a perimeter established by rule around a permitted facility. Exceedances of 2L standards are allowed inside this perimeter. However, if the permitted activity “results in an increase in the concentration of a substance in excess of the standards at or beyond the compliance boundary,” the permittee must “notify the Department” “of the violation.” Id. r. 2L .0106(e) (emphasis added); see also id. r. 2L .0106(d). In addition, the permittee must submit a report that

assesses “the cause, significance, and extent of the violation.” Id. (emphasis added).

For activities that lack permits, when the activity “results in an increase in the concentration of a substance in excess of the standard,” the person conducting the activity must “notify the Department” “of the violation” and report to the Department on “the cause, significance, and extent of the violation.” Id. r. 2L .0106(c) (emphasis added). There is no compliance boundary and therefore no geographic limit for violations caused by activities that lack permits. See id.

By contrast, an “exceedance” occurs when the concentration of a substance is greater than the 2L standard. The existence of an exceedance is a factual determination, and does not necessarily indicate a violation.

The rules regarding “review boundaries” elucidate the distinction between violations and exceedances. Certain permitted facilities have a “review boundary” that is enclosed within the compliance boundary. 15A N.C. Admin. Code 2L .0102(20). The purpose of the review boundary is to identify problems before they manifest at the compliance boundary. “When the concentration of any substance equals or exceeds the standard at the review boundary” the permittee must take steps to ensure that the

exceedance does not reach the compliance boundary. Id. r. 2L .0106(d)(1), .0108 (emphasis added). Only if the exceedance were to migrate to the compliance boundary would it then constitute “a violation.” Id. r. 2L .0106(d)(1). That is, an exceedance that occurs within the compliance boundary is not a violation.

In some areas, contaminants may naturally be present in the groundwater at levels above the concentrations listed in rule 2L .0202. The rules define the regulatory standard as the greater of the specific numeric standard listed in 2L .0202 or naturally occurring concentrations. Id. r. 2L .0202(b)(3). In this way, the rules ensure that nobody can be held liable for naturally occurring concentrations of contaminants.

Accordingly, a violation occurs at a permitted facility if the permitted activity causes contaminant levels at or beyond the compliance boundary that exceed the 2L standards. For an unpermitted activity, a violation occurs if the activity results in an exceedance of the 2L standard anywhere.

B. Compliance with the assessment and remediation requirements does not negate the existence of a 2L violation.

In its orders, the Utilities Commission discussed Duke’s compliance with the Groundwater Rules. In these discussions, the Commission properly

recognized that there is a difference between an exceedance of the 2L standards and a violation of the Groundwater Rules. However, the Commission drew that line in the wrong place.

As the discussion above indicates, an exceedance is a violation of a 2L standard if it occurs at or beyond the compliance boundary. However, in the Carolinas and Progress orders at issue here, the Commission indicates that so long as the exceedance is being properly addressed through the remediation process, then no violation has occurred. This contradicts the controlling regulations.

In the Carolinas order, the Utilities Commission “agree[d]” with and gave “substantial weight” to the following testimony of Carolinas’ witness James Wells:

[E]ven when an exceedance requires corrective action, the groundwater rules do not treat the exceedance the same way as, for example, the Clean Water Act treats an exceedance of an NPDES permit limit. When the latter is violated . . . the permittee is immediately subject to an NOV and penalty, and must ensure the next discharge complies with the permit limit or risks a new NOV and escalating penalty. [Citation omitted]

Witness Wells contrasted this process with groundwater standards, under which an exceedance does not immediately result in an NOV and escalating penalty. Instead, he explained the owner/operator must report the exceedance and work with the DEQ to determine whether

it was due to permitted activity, assess the extent of the exceedance, and undertake corrective action. . . . He testified that the 2L rules' corrective action provisions are deliberately designed around the idea that older facilities, built before liners were a regulatory obligation, were likely to have associated groundwater impacts, that such impacts were not the result of regulatory noncompliance, and that they should be addressed in a measured process. He concluded that compliance with this process is not mismanagement and should not be held against [Carolinas] with respect to cost recovery. [Citation omitted]

(Carolinas R pp 833, 1122-23)

The gist of this testimony is that an exceedance is not a violation so long as corrective action is being undertaken. This testimony misapplies the law.

Most tellingly, Witness Wells incorrectly restated critical language in the Groundwater Rules. Witness Wells explained in the passage above that upon the detection of an exceedance, the "owner/operator must . . . assess the extent of the exceedance." (Carolinas R p 1122 (emphasis added)) That is inaccurate. The Groundwater Rules mandate instead that in such circumstances, the owner/operator must "assess[] the . . . extent of the violation." E.g., 15A N.C. Admin. Code 2L .0106(e)(3) (emphasis added).

The contrast with enforcement procedures under federal law also fails to show that an exceedance for which corrective action is underway is not a

violation. Whether an enforcement agency chooses to enforce immediately or to defer enforcement does not inform whether a violation has occurred. It only speaks to the agency's enforcement discretion, not its authority.

On this subject, Witness Wells also recounted a 2011 Department memorandum, which was rescinded by the Department in late 2015. (See Carolinas Doc. Ex. 9902, 10714-16; Progress Doc. Ex. 3822) He correctly summarized that pursuant to the 2011 memorandum, “only after a utility failed to undertake corrective action when directed to do so would DEQ consider pursuing enforcement.” (Carolinas R p 1122) But the memorandum clarified that “[i]f the permitted facility is determined to be in non-compliance . . . adherence to the corrective action requirements specified in 15A NCAC 2L .0106 will be required.” Put another way, “non-compliance,” i.e., a violation, is not the result of a failed corrective action; it is instead a necessary precursor to the requirement to undertake corrective action.³ (Carolinas Doc. Ex. 10715)

³ At one point, the Commission appears to recognize that the “corrective action provisions” in the Groundwater Rules are “triggered by . . . violations.” (Carolinas R p 1123 (emphasis in original)) This does not clarify the issue but only further muddies the waters as to the Commission's position.

Further, Witness Wells testified that “older facilities” that were “built before liners were a regulatory obligation . . . should be addressed in a measured process.” (Carolinas R p 1123) To the extent that this concept of a “measured process” imports the notion that an exceedance at or beyond the compliance boundary is not a violation, it incorrectly states the law.

At several other points, the Commission’s discussion similarly appeared to veer significantly from the proper interpretation of the Groundwater Rules. First, the Commission stated that, under the 2015 settlement between Duke and the Department, “there was a very serious question as to whether any violation of the State’s groundwater standards had occurred.” (Carolinas R p 1121) This is inaccurate. The 2015 settlement specifically states that “Duke Energy submitted monitoring that showed exceedances of the State’s groundwater standards at or beyond the compliance boundary at the Asheville Plant.” (Carolinas Doc. Ex. 2086) A simple application of the Groundwater Rules shows that there was no question that a violation had occurred.⁴ In fact, a later superior court

⁴ The 2015 settlement even recounts that the Department “sent Duke Energy a Notice of Violation . . . based upon groundwater monitoring results

judgment ordered Duke to take significant steps to “remedy[] the violations” that the Department had brought to the court’s attention. (Carolinas Doc. Ex. 9969)

Second, the Utilities Commission appears to have agreed with Witness Wells that “exceedances of groundwater standards . . . do not indicate mismanagement or poor compliance programs” because they are “rather a function of where these sites are on the timeline of groundwater assessment and corrective action under modern laws that have changed the way unlined basins are viewed.” (Carolinas R p 1121) Any suggestion here that “the existence of groundwater exceedances at or beyond the compliance boundaries” are not violations, i.e., “poor compliance,” would be inaccurate.

. . . for the Asheville Plant.” (Carolinas Doc. Ex. 2086) This notice was later withdrawn in order to facilitate the settlement of a contested case filed by Duke. (Id. at 2090)

By entering into the 2015 settlement, the Department agreed not to, for example, “file any judicial action against” Duke regarding groundwater monitoring or groundwater conditions at Duke’s coal ash sites. (Carolinas Doc. Ex. 2090) To be clear, even if this amicus brief were a “fil[ing]” of a “judicial action,” it is not made “against Duke.” The Department does not take a position on the outcome of this litigation. The Department offers this brief to apprise the Court of its interpretation of the Groundwater Rules and a limited provision of Coal Ash Management Act in order to ensure that no inadvertent violence is done to these provisions in this litigation.

Indeed, “the existence of groundwater exceedances at or beyond the compliance boundaries” is a violation of the 2L standards by definition.

The Court can see here, again, the attempt to hinge the determination of whether a violation has occurred on compliance with “groundwater assessment and correction action.” And again, the Court should reject that effort. “[G]roundwater assessment and correction action” are legal requirements that flow from the existence of a violation of the 2L standards. They are not themselves used to determine whether a violation has occurred.

It is irrelevant in this context that, as the Utilities Commission noted, “requirements changed over time.” (Carolinas R p 1121) The fact that any party may have failed to conform itself to new standards once those standards became enforceable does not negate any violations of those new standards.

Third, the Utilities Commission made these same missteps in the Progress order. For example, the Commission approved of the notion that “groundwater impacts” from “older facilities, built before liners were a regulatory obligation . . . should be addressed in a measured process” (Progress R p 653), which incorrectly implies that an exceedance at or beyond the compliance boundary is not necessarily a violation. Similarly,

and equally as problematic, the Commission in the Progress order recapped with approval Witness Wells' testimony that "exceedances of groundwater standards" were merely "a function of where these sites are on the timeline of groundwater assessment and corrective action" and therefore not indicative of "poor compliance." (Id.; see also id. at 654-55 (repeating the discussion of the Department's 2011 memorandum))

The import of the distinction between an "exceedance" and a "violation" is not limited to leaky coal ash ponds. The Groundwater Rules apply to any type of operation that may cause contamination of groundwater, such as fuel service stations, quarries, landfills, manufacturing facilities, etc. 15A N.C. Admin. Code 2L .0106(c)-(e) (applying requirements to "[a]ny person conducting or controlling an activity").

The Secretary may assess a penalty "against any person who . . . [v]iolates" a 2L standard. See N.C. Gen. Stat. § 143-215.6A(a)(1). The Secretary may also penalize one who "[v]iolates a rule of the [Environmental Management] Commission," such as the Groundwater Rules. Id. § 143-215.6A(a)(6). For "continuous" actions, penalties may reach "twenty-five thousand dollars (\$ 25,000) per day for so long as the violation continues."

Id. § 143-215.6A(b).⁵ If an entity were determined to be in compliance with the Groundwater Rules simply because it was following through on its obligations to assess and remediate violations, the Department’s ability to penalize wrongdoers could be eviscerated and an effective deterrent would be lost.

For all of these reasons, should the Court find it necessary to opine on the issue, the Court should confirm that an exceedance of a 2L standard (including background concentrations) that occurs at or beyond a compliance boundary (if one exists) is a violation that subjects the violator to available enforcement mechanisms.

II. THE ASSESSMENT AND CORRECTIVE ACTION REQUIREMENTS UNDER THE COAL ASH MANAGEMENT ACT ARE NOT PREDICATED ON AN EXCEEDANCE OF A 2L STANDARD.

The Utilities Commission also misinterpreted a critical provision of the Coal Ash Management Act of 2014. N.C. Gen. Stat. § 130A-309.200 et seq. In the Carolinas order, the Commission stated that “one key difference

⁵ Criminal sanctions may also flow from “violat[ion]s” of “standards . . . established in rules adopted by the [Environmental Management] Commission.” Id. § 143-215.6B(f)-(h). Likewise, the Department may seek injunctive relief if it believes “that any person has violated” the Groundwater Rules and the 2L standards. Id. § 143-215.6C.

between” the act and the Groundwater Rules “is that [the act]’s groundwater assessment and corrective action provisions are triggered by exceedances – not violations – of the 2L groundwater standards.” (Carolinas R p 1123 (footnote omitted)) This inaccurately sets forth the trigger under the act.

The Groundwater Rules require assessment and remediation of groundwater contamination if an “activity . . . results in” an exceedance “at or beyond the compliance boundary,” which is by rule “a violation.” 15A N.C. Admin. Code 2L .0106(e). The Coal Ash Management Act does not use an analogous trigger tied to an exceedance. Instead, the act requires assessment and remediation at all coal combustion residuals surface impoundments, regardless of whether an exceedance or a violation as occurred.

Section 130A-309.211⁶ of the Coal Ash Management Act provides that “[t]he owner of a coal combustion residuals surface impoundment shall conduct groundwater monitoring and assessment as provided in this subsection” and “implement corrective action for the restoration of

⁶ Section 130A-309.211 was originally enacted in 2014 as section 130A-309.209. Coal Ash Management Act of 2014, ch. 122, § 3(a), 2014 N.C. Sess. Laws 828, 838-40 (enacting N.C. Gen. Stat. § 130A-309.209) (See also Progress Doc. Ex. 950-52). It was recodified as section 130A-309.211 in 2016. Act of July 14, 2016, ch. 95, § 1, 2016 N.C. Sess. Laws ___, ___.

groundwater quality as provided in this subsection.” N.C. Gen. Stat. § 130A-309.211(a)-(b). There is no requirement that any exceedance or violation occur or be identified before any party is mandated to “conduct groundwater monitoring and assessment” and “implement corrective action.” The mere fact that a party is an “owner of a coal combustion residuals surface impoundment” triggers the obligation to monitor, assess, and implement corrective action.

Therefore, the Commission’s conclusion that the Coal Ash Management Act’s “groundwater assessment and corrective action provisions are triggered by exceedances” (Carolinās R p 1123) is contrary to the plain language in the statute.

CONCLUSION

For the foregoing reasons, the Court should (1) interpret the Groundwater Rules to indicate that an exceedance of a 2L standard (including background concentrations) at or beyond the applicable compliance boundary is a violation that subjects the violator to available enforcement mechanisms regardless of any ongoing corrective action, and (2) interpret the Coal Ash Management Act to require each “owner of a coal

combustion residuals surface impoundment” to conduct monitoring, assessment, and corrective action regardless of any exceedances.

Respectfully submitted this the 25th day of September, 2019.

NORTH CAROLINA
DEPARTMENT OF JUSTICE,
ENVIRONMENTAL DIVISION

Electronically Submitted

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N.C. App. R. 33(b) Certification: I
certify that the attorneys listed
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CERTIFICATE OF COMPLIANCE

I certify that, pursuant to Appellate Rule 28(j), this brief (excluding the parts omitted by rule from the calculation) contains fewer than 3,750 words.

Electronically Submitted

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Special Deputy Attorney General

September 25, 2019

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I certify that today, I have caused the foregoing Amicus Curiae Brief of the North Carolina Department of Environmental Quality to be served on all counsel of record by email to the following addresses:

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September 25, 2019

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
REVENUE IMPACT OF PUBLIC STAFF ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 1
Page 1 of 2

Line No.	Item	Amount
1	Revenue requirement increase per Company application	\$445,331 ^{1/}
2	Revenue impact of Company update	19,254 ^{5/}
3	Revenue impact of Company supplemental update	(50,152)
4	Revenue requirement increase per Company after updates	414,433
5	Revenue impact of adjustments: ^{2/}	
	Unsettled issues:	
6	Update plant and accumulated depreciation to May 31, 2020	(3,705) ^{3/}
7	Remove Clemson CHP	\$10 ^{3/}
8	Adjust for Hydro Station Sale	(1,979)
9	Adjust depreciation rates	(30,710)
10	Adjust deferred environmental costs	(85,439)
11	Adjust cash working capital under present rates	(410)
12	Adjust cash working capital under proposed rates	(1,196)
13	Rounding	(2)
14	Total Unsettled Items	(123,431)
	Settled issues:	
15	Change in equity ratio from 52.00% to 52.00% equity	-
16	Change in debt cost rate from 4.270% to 4.270%	-
17	Change in return on equity from 9.60% to 9.60%	-
18	Adjust benefits	(892)
19	Adjust weather normalization to May 31, 2020	15
20	Updated ADIT for retired meters	0
21	Update revenues to May 31, 2020	(76)
22	Adjust to update fuel factors	0
23	Adjust deferred non-ARO environmental costs	0
24	Remove EDIT refund from base rates for treatment as a rider	0
25	Remove federal unprotected EDIT from rate base for treatment as a rider	0
26	Remove federal unprotected EDIT labeled by Company as PP&E from rate base for treatment as a rider	0
27	Remove deferred EDIT refund from rate base for treatment as a rider	0
28	Remove State EDIT refund from rate base for treatment as a rider	0
29	Adjust distribution vegetation management	0
30	Adjust outside services	0
31	Adjust salaries and wages expense	0
32	Adjust advertising expense	0
33	Adjust retired hydro O&M	0
34	Include flowback of protected federal EDIT due to Tax Cuts and Jobs Act	-
35	Adjust aviation expenses	0
36	Adjust executive compensation	0
37	Adjust rate case expense	0
38	Adjust incentives	0
39	Adjust sponsorships & donations	0
40	Adjust severance	0
41	Adjust lobbying expense	0
42	Adjust Board of Directors expense	0
43	Adjust credit card fees	0
44	Adjust inflation to May 31, 2020	0
45	Adjust storm deferral	0
46	Adjust storm expense	0
47	Total Settled Items	(953)
48	Total revenue impact of Public Staff adjustments	(124,384)
49	Public Staff recommended increase / (decrease) in base rate revenue requirement	\$290,049 ^{4/}

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
REVENUE IMPACT OF PUBLIC STAFF ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 1
Page 2 of 2

Line No.	Item	Amount
50	Public Staff recommended increase / (decrease) in base rate revenue requirement (L49)	\$290,049
51	Annual federal provisional EDIT Rider for two year period per Second Stipulation	(64,679)
52	Annual state EDIT Rider for two year period per Second Stipulation	(18,375)
53	Annual federal unprotected EDIT Rider for five year period per Second Stipulation	(57,426) ^{6/}
54	Annual federal unprotected EDIT Rider labeled PP&E by Company for five year period per Second Stipulation	(183,449) ^{6/}
55	Public Staff recommended change in revenue requirement for first two years (Sum of L50 through L54)	<u>(\$33,880)</u>
56	Public Staff recommended change in revenue requirement for years 3 thru 5 (L50 + L53 + L54)	<u>\$49,174</u>

1/ McManeus Exhibit 1, Page 2, Line 8.

2/ Calculated based on Boswell Second Supplemental and Stipulation Exhibit 1, Schedules 2, 3, 4, 5, and backup schedules.

3/ The Public Staff and the Company have agreed to the plant amounts, the only differences that remain are the depreciation rates utilized for each.

4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 5, Line 5.

5/ The Company has chosen not to seek the additional revenue requirement in its supplemental filing.

6/ The Company is flowing back a portion of EDIT in interim rates. This flowback has not been reflected here since the total amount flowed back is unknown at the present time. The beginning balance to be amortized and final amortization dollars will be calculated once a Commission Order has been issued in this case.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
SUPPORT FOR RECONCILIATION SCHEDULE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 1-1

Line No.	Item	Rate Base Impact (a)	Income Statement Impact (b)	Total Revenue Impact (c)
1	Update plant and accumulated depreciation to May 31, 2020	(\$847)	(\$2,858)	(\$3,705)
2	Adjust Severance	\$0	\$0	-
3	Adjust depreciation rates	2,876	(33,586)	(30,710)
4	Adjust deferred environmental costs	(19,947)	(65,492)	(85,439)
5	Flowback of Protected EDIT	\$0	\$0	-
6	Remove Storm Deferral	\$0	\$0	-
7	Adjustment to update fuel factors	\$0	\$0	\$0
8	Adjust deferred non-ARO environmental costs	\$0	\$0	\$0
9	Remove Clemson CHP	(\$1)	\$11	\$10
10	Adjustment to benefits	\$0	(\$892)	(\$892)

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1, Line 16.

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1, Line 18.

3/ Column (a) plus Column (b).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF GROSS REVENUE EFFECT FACTORS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 1-2

Line No.	Item	Capital Structure (a)	Cost Rates (b)	Retention Factor (c)	Gross Revenue Effect (d)
1	<u>Rate Base Factor</u>				
2	Long-term debt	48.000% ^{1/}	4.270% ^{1/}	0.9962055 ^{2/}	0.0205741 ^{4/}
3	Common equity	52.000% ^{1/}	9.60% ^{1/}	0.7635890 ^{3/}	0.0653755 ^{4/}
4	Total (Sum of Lines 2 and 3)	<u>100.000%</u>			<u>0.0859496</u>
					<u>Amount</u>
5	<u>Net Income Factor</u>				
6	Total revenue				1.0000000
7	Uncollectibles				0.0025010 ^{5/}
8	Balance (L6 - L7)				<u>0.9974990</u>
9	Regulatory fee (L8 x .012967) ^{6/}				<u>0.0012935</u>
10	Balance (L8 - L9)				<u>0.9962055</u>
11	State income tax (L10 x 2.9750%) ^{7/}				<u>0.0296371</u>
12	Balance (L10 - L11)				<u>0.9665684</u>
13	Federal income tax (L12 x 21%) ^{8/}				<u>0.2029794</u>
14	Retention factor (L12 - L13)				<u>0.7635890</u>

1/ Per Second Stipulation.

2/ Line 10.

3/ Line 14.

4/ Column (a) times Column (b) divided by Column (c).

5/ E-1, Item No. 10, NC-0105, Line 4.

6/ Current regulatory fee rate effective July 1, 2016.

7/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-3, Line 4, Column (a).

8/ Statutory rate.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF COMPOSITE

INCOME TAX RATE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 1-3

Line No.	Item	Total System (a)	North Carolina (b)	South Carolina (c)
1	<u>Weighted state income tax rate</u>			
2	Apportionment factor		67.0000% ^{2/}	26.0000% ^{2/}
3	State income tax rate		2.50% ^{3/}	5.00% ^{3/}
4	Weighted state income tax rate	<u>2.9750% ^{1/}</u>	<u>1.67500% ^{4/}</u>	<u>1.30000% ^{4/}</u>
5	<u>Composite income tax rate</u>			
6	Weighted state income tax rate (L4)	2.9750%		
7	Federal income tax rate	21% ^{5/}		
8	Composite income tax rate	23.3503% ^{6/}		

1/ Sum of Columns (b) and (c).

2/ E-1, Item No. 10, NC-0104, Column (b).

3/ E-1, Item No. 10, NC-0104, Column (a).

4/ Line 2 times Line 3.

5/ Statutory rate.

6/ 1 minus ((1 minus Line 6) times (1 minus Line 7)).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ORIGINAL COST RATE BASE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2

Line No.	Item	Under Present Rates			After Public Staff Recommended Decrease	
		NC Retail Adjusted Per Company 1/	Public Staff Adjustments 2/	After Public Staff Adjustments 3/	Rate Decrease 4/	After Rate Decrease 5/
		(a)	(b)	(c)	(d)	(e)
1	Electric plant in service	\$30,130,353	(\$10,188)	\$30,120,165	\$0	\$30,120,165
2	Accumulated depreciation and amortization	(11,708,304)	33,781	(11,674,523)	-	(11,674,523)
3	Net electric plant in service (L1 + L2)	18,422,049	23,593	18,445,642	-	18,445,642
4	Materials and supplies	639,426	-	639,426	-	639,426
	Other Working Capital					
5	Operating funds per lead-lag study	160,194	(4,774)	155,420	30,671 4/	186,091
6	Unamortized debt	78,306	-	78,306	-	78,306
7	Regulatory assets and liabilities, excluding ARO-related CCR	(830,132)	2,109	(828,023)	-	(828,023)
8	Total other working capital	(591,632)	(2,665)	(594,297)	30,671	(563,626)
9	ARO-related CCR regulatory assets and liabilities	\$690,372	(302,772)	387,600	-	387,600
10	Customer deposits	(96,608)	-	(96,608)	-	(96,608)
11	Accumulated deferred income taxes	(1,517,388)	(492)	(1,517,880)	-	(1,517,880)
12	Operating reserves	(424,053)	-	(424,053)	-	(424,053)
13	Adjustments to federal excess deferred income taxes	-	70,698	70,698	-	70,698
14	Construction work in progress	-	-	-	-	-
15	Total original cost rate base (L3 + L4 + L8 + sum of L9 thru L14)	<u>\$17,122,166</u>	<u>(\$211,638)</u>	<u>\$16,910,528</u>	<u>\$30,671</u>	<u>\$16,941,199</u>

1/ Based on McManeus Second Supplemental Exhibit 1.

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1, Column (p).

3/ Column (a) plus Column (b).

4/ Boswell Second Supplemental and Stipulation Exh. 1, Schedule 2-1(e), Line 82, Column (k).

5/ Column (c) plus Column (d).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS

For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1
Page 1 of 3

Line No.	Item	Update Plant and Accumulated Depreciation to 5/31/2020 ^{1/} (a)	Remove State EDIT Refund for Treatment as a Rider ^{2/} (b)	Adjust Depreciation Rates ^{3/} (c)	Remove Deferred Environmental Costs ^{4/} (d)	Adjust for Hydro Station Sale ^{5/} (e)	Update Per Book Working Capital For SWPA ^{6/} (f)
1	Electric plant in service	(\$10,188)	\$0	\$0	\$0	\$0	
2	Accumulated depreciation and amortization	333	-	33,459	-	-	
3	Net electric plant in service (L1 + L2)	(9,855)	-	33,459	-	-	
4	Materials and supplies	-	-	-	-	-	
	Other Working Capital						
5	Operating funds per lead-lag study	-	-	-	-	-	
6	Unamortized debt	-	-	-	-	-	
7	Regulatory assets and liabilities, excluding ARO-related CCR	-	-	-	-	2,109	
8	Total Working Capital	-	-	-	-	2,109	-
9	CCR regulatory assets and liabilities				(302,772)		
10	Customer deposits	-	-	-	-	-	
11	Accumulated deferred income taxes	-	-	0	-	(492)	
12	Operating reserves	-	0	0	0	0	
13	Adjustments to federal excess deferred income taxes	-	-	-	70,698	-	
14	Construction work in progress	-	-	-	-	-	
15	Total original cost rate base (L3 + L4 + L8 + sum of L9 thru L14)	(\$9,855)	\$0	\$33,459	(\$232,074)	\$1,617	\$0
16	Revenue requirement impact ^{16/}	(\$847)	\$0	\$2,876	(\$19,947)	\$139	\$0

- 1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a), Line 3.
2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(c).
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(f), Line 10.
4/ Based on recommendation of Public Staff witness Maness.
5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(e).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS

For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1
Page 2 of 3

Line No.	Item	Adjust Storm Deferral (g)	Adjust Rate Case Expense (h)	Adjust Severance (i)	Adjust ADIT for Retired Meters (j)	Include Flowback of Protected EDIT due to Tax Cuts & Jobs Act (k)	Remove Belews Creek DFO (l)	Reclass CCR Reg. Assets & Liabilities (m)
1	Electric plant in service	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Accumulated depreciation and amortization	-	-	-	-	-	\$0	-
3	Net electric plant in service (L1 + L2)	-	-	-	-	-	-	-
4	Materials and supplies	0	-	-	-	0	-	-
	Other Working Capital							
5	Operating funds per lead-lag study	-	-	-	-	-	-	-
6	Unamortized debt	-	-	-	-	-	-	-
7	Regulatory assets and liabilities, excluding ARO-related CCR	0	0	0	-	-	-	(690,372)
8	Total Working Capital	-	-	-	-	-	-	(690,372)
9	CCR regulatory assets and liabilities	-	-	-	-	-	-	\$690,372
10	Customer deposits	-	-	-	-	-	-	-
11	Accumulated deferred income taxes	0	0	0	(0)	0	-	-
12	Operating reserves	-	-	-	-	-	-	-
13	Adjustments to federal excess deferred income taxes	-	-	-	-	0	-	-
14	Construction work in progress	-	-	-	-	-	-	-
15	Total original cost rate base (L3 + L4 + L8 + sum of L9 thru L14)	\$0	\$0	\$0	(\$0)	\$0	\$0	\$0
16	Revenue requirement impact	\$0	\$0	\$0	\$0	\$0	\$0	\$0

6/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(g) Line 3.
7/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(g) Line 7.
8/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(l).
9/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(t), Line 6.
10/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(u).
11/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(b) Line 7.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS

For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1
Page 3 of 3

Line No.	Item	Adjust Deferred Non-ARO Environmental Costs (n)	Unprotected EDIT Refund for Treatment as a Rider (o)	Unprotected PP&E EDIT Refund for Treatment as a Rider (p)	Deferred Federal EDIT Refund for Treatment as a Rider (q)	Remove Clemson CHP (r)	Update COSS from SCP to SWPA (s)	Adjust Cash Working Capital (t)	Total Rate Base Adjustments (u)
1	Electric plant in service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$10,188)
2	Accumulated depreciation and amortization		-	-	-	(\$11)		-	33,781
3	Net electric plant in service (L1 + L2)		-	-	-	(\$11)	\$0	-	23,593
4	Materials and supplies		-	-	-			-	-
	Other Working Capital								
5	Operating funds per lead-lag study		-	-	-			(\$4,774)	(4,774)
6	Unamortized debt		-	-	-			-	-
7	Regulatory assets and liabilities, excluding ARO-related CCR		-	-	-			-	(688,263)
8	Total Working Capital	-	-	-	-		-	(4,774)	(693,037)
9	CCR regulatory assets and liabilities	0							387,600
10	Customer deposits		-	-	-			-	-
11	Accumulated deferred income taxes		0	0	0			-	(492)
12	Operating reserves		0	0	0			-	-
13	Adjustments to federal excess deferred income taxes	0						-	70,698
14	Construction work in progress		-	-	-			-	-
15	Total original cost rate base (L3 + L4 + L8 + sum of L9 thru L14)	\$0	\$0	\$0	\$0	(\$11)	\$0	(4,774)	(211,638)
16	Revenue requirement impact	\$0	\$0	\$0	\$0	(\$1)	\$0	(\$410)	(\$18,190)

12/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(w), Line 11.

13/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(e).

14/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(d), Column (g), Line 87.

15/ Sum of Columns (a) through (o).

16/ Line 15 x rate base retention factor from Schedule 1-2.

17/ Per Second Stipulation.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO UPDATE PLANT AND
ACCUMULATED DEPRECIATION
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(a)

Line No.	Item	Plant in Service (a)	Accumulated Depreciation (b)
1	Adjustment to update balances to 5/31/20	(\$10,188) ^{1/}	\$1 ^{2/}
2	Adjustment for annualization of depreciation expense	<u>0</u>	<u>332</u> ^{3/}
3	Total adjustment to update plant and accumulated depreciation (L1 + L2)	<u><u>(\$10,188)</u></u>	<u><u>\$333</u></u>

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 15, Column (e).

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(2), Line 11, Column (e).

3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(3), Line 11.

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North Carolina Retail Operations
ADJUSTMENT TO UPDATE PLANT IN
SERVICE TO JANUARY 31, 2020
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(a)(1)

Line No.	Item	Total System			NC Retail Percentage ^{4/}	NC Retail Amount
		Amount As Of 5/31/2020 ^{1/}	Amount As Of 12/31/2018 ^{2/}	Change in Plant in Service ^{3/}		
		(a)	(b)	(c)	(d)	(e)
1	Steam plant	\$8,943,676	\$8,325,356	\$618,320		
2	Hydro plant	2,432,698	2,186,536	246,162		
3	Other production plant	3,293,090	3,147,776	145,314		
4	Nuclear plant	8,824,934	8,521,536	303,398		
5	Total production plant	23,494,398	22,181,204	1,313,194	67.4345%	\$885,546 ^{5/}
6	Transmission plant	4,577,442	4,052,747	524,695	52.6634%	276,322 ^{5/}
7	Distribution plant	13,258,710	12,085,804	1,172,906	73.9558%	867,432 ^{5/}
8	General plant	1,384,735	1,212,985	171,750	69.0221%	118,545 ^{5/}
9	Intangible plant	1,064,479	986,751	77,728	69.0221%	53,649 ^{5/}
10	Total plant in service	<u>\$43,779,764</u>	<u>\$40,519,491</u>	<u>\$3,260,273</u>		<u>\$2,201,494</u>
11	Update to plant (L10)					\$2,201,494
12	Less: additional plant related to REPS					- ^{6/}
13	Update to plant per Public Staff (L11 - L12)					2,201,494
14	Company adjustment for 2019 and 2020 plant additions					2,211,682 ^{7/}
15	Public Staff adjustment to update plant (L13 - L14)					<u>(\$10,188)</u>

1/ Based on Company response to Public Staff Data Request No. 30, Item 3.

2/ E-1, Item 10, NC-1008(H), Column (a).

3/ Column (a) minus Column (b).

4/ E-1, Item 45a, DEC COS NC SCP.

5/ Column (c) times Column (d).

6/ E-1, Item 10, NC-1008 and NC-1001.

7/ E-1, Item 10, NC -1001(H), Total NC Retail column, Line 21.

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North Carolina Retail Operations
ADJUSTMENT TO UPDATE
ACCUMULATED DEPRECIATION TO
JANUARY 31, 2020
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(a)(2)

Line No.	Item	Total Carolinas			NC Retail Percentage ^{3/}	NC Retail Amount
		Amount As Of 5/31/2020 ^{1/}	Amount As Of 12/31/2018 ^{1/}	Change in Accumulated Depreciation ^{2/}		
		(a)	(b)	(c)	(d)	(e)
1	Production plant	(\$9,443,521)	(\$8,604,490)	(\$839,031)	67.4345%	(\$565,796) ^{4/}
2	Transmission plant	(1,428,458)	(1,385,391)	(43,067)	52.6634%	(22,681) ^{4/}
3	Distribution plant	(4,973,344)	(4,816,028)	(157,316)	73.9558%	(116,344) ^{4/}
4	General plant	(459,321)	(414,681)	(44,640)	69.0221%	(30,811) ^{4/}
5	Intangible plant	(706,737)	(609,897)	(96,840)	69.0221%	(66,841) ^{4/}
6	Total accumulated depreciation	<u>(\$17,011,381)</u>	<u>(\$15,830,487)</u>	<u>(\$1,180,894)</u>		<u>(\$802,473)</u>
7	Change in accumulated depreciation (L6)					(\$802,473)
8	Less: Non-fuel rider activity					- ^{5/}
9	Public Staff adjustment to update to 1/31/20					(802,473)
10	Company adjustment to update					(802,474) ^{6/}
11	Public Staff adjustment (L9 - L10)					<u>\$1</u>

1/ E-1, Item 10, NC-1009(H), updated per DR.

2/ Column (a) minus Column (b).

3/ E-1, Item 45a, DEC COS NC SCP.

4/ Column (c) times Column (d).

5/ McManeus Second Supplemental Exhibit 1, NC-1001(H) and NC-1009(H).

6/ McManeus Second Supplemental Exhibit 1, NC-1001(H), Line 29, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO ACCUMULATED
DEPRECIATION FOR ANNUALIZATION OF
DEPRECIATION EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(a)(3)

Line No.	Item	Annualized Depreciation Expense at 5/31/2020 ^{1/}	Per Books Depreciation Expense for Twelve Months Ended 05/31/20 ^{1/}	Difference ^{2/}	NC Retail Percentage ^{3/}	NC Retail Amount ^{4/}
		(a)	(b)	(c)	(d)	(e)
1	Production plant	\$759,987	\$740,744	\$19,243	67.4345%	\$12,976 ^{4/}
2	Production Contra ADC	(4,028)	(3,633)	(395)	100.0000%	(395) ^{4/}
3	Transmission plant	91,327	87,196	4,131	52.6634%	2,176 ^{4/}
4	Transmission Contra ADC	(21)	(22)	1	100.0000%	1 ^{4/}
5	NC Distribution plant	215,723	207,881	7,842	99.6471%	7,814 ^{4/}
6	SC Distribution plant	74,338	72,060	2,278	0.0000%	- ^{4/}
7	General plant	75,282	68,302	6,980	69.0221%	4,818 ^{4/}
8	Intangible plant	70,159	70,159	-	69.0221%	- ^{4/}
9	Total accumulated depreciation	<u>\$1,282,767</u>	<u>\$1,242,687</u>	<u>\$40,080</u>		<u>\$27,390</u>
10	Adjustment to accumulated depreciation (-L9)					(\$27,390)
11	Company adjustment					<u>(27,722) ^{5/}</u>
12	Public Staff adjustment to accumulated depreciation					<u>\$332</u>

- 1/ E-1, Item 10, NC-1007(H), updated in response to DR.
2/ Column (a) minus Column (b).
3/ E-1, Item 45a, DEC COS NC SCP.
4/ Column (c) times Column (d).
5/ E-1, Item No. 10, NC-1001(H), Line 30, Total NC Retail Column.

**DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations**

**ADJUSTMENT ADIT for NC Unrecovered Net Book Value of Retired
Meters**

**For the Test Year Ended December 31, 2018
(in Thousands)**

**Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(b)**

Line No.	Item	Amount
1	NC Unrecovered NBV of Retired Meter Reg Asset Balance at 5/31/20	\$104,842 1/
2	NC Unrecovered NBV of Retired Meter Reg Asset Balance at 12/31/18	66,567 2/
3	Actual Net Change through May 31, 2020 (L1 - L2)	38,275
4	Tax rate	23.3503% 3/
5	Impact to ADIT (L3 x L4)	(8,937)
6	Company adjustment to ADIT	(8,937) 4/
7	Adjustment to ADIT for retired meters (L5 - L6)	<u>(0)</u>

1/ E-1, Item 10, NC-1005(H), Line 19.

2/ E-1, Item 10, NC-1005(H), Line 2.

3/ Composite tax rate.

4/ E-1, Item 10, NC-1005(H), Line 28.

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(c)

ADJUSTMENT TO RATE BASE FOR TREATMENT AS A RIDER
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Amount
1	Adjustments required to flow back refunds to customers through a Rider:	
2	Adjustment to remove federal unprotected EDIT from rate base	\$245,120 1/
3	Adjustment to remove federal unprotected EDIT labeled "PP&E" by Company from rate base	\$783,045 4/
4	Adjustment to remove state EDIT from rate base	34,392 2/
5	Adjustment to remove overcollection of revenues due to FIT rate change from rate base	<u>121,053 3/</u>
6	Adjustments to rate base for tax changes (Sum of Lines 2 through 5)	\$1,183,610
7	Company adjustment to rate base for tax changes	<u>1,183,610 5/</u>
8	Public staff adjustment to rate base for tax changes (L6 - L7)	<u><u>\$0</u></u>

1/ McManeus Supplemental Exhibit 4, Line 8, Column (c).

2/ McManeus Supplemental Exhibit 4, Line 8, Column (d).

3/ McManeus Supplemental Exhibit 4, Line 8, Column (e).

4/ McManeus Supplemental Exhibit 4, Line 8, Column (b).

5/ E-1, Item 10, NC-3800(J), Line 2.

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North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(d)

Line No.	Item	Per Books Amounts ^{1/}	Company Ratemaking Adjustments ^{2/}	After Company Adjustments ^{3/}	Public Staff Adjustments ^{4/}	After Public Staff Adjustments ^{5/}	(Lead) / Lag Days ^{6/}	Working Capital From Lead/Lag Study ^{7/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Electric operating revenues:							
2	Rate revenues	\$4,751,193	(\$109,378)	\$4,641,815	(\$122,275)	\$4,519,540	39.58	\$490,091
3	Sales for resale revenues	61,600		61,600	-	61,600	35.44	5,981
4	Forfeited discounts	15,256		15,256	-	15,256	70.00	2,926
5	Miscellaneous service revenues	9,541		9,541	-	9,541	76.00	1,987
6	Rent revenues - extra facilities - depreciation	(38,869)		(38,869)	-	(38,869)		-
7	Rent revenues - extra facilities - other	25,058		25,058	-	25,058	30.13	2,068
8	Rent revenues - pole & line attachments	27,655		27,655	-	27,655	143.39	10,864
9	Tower lease revenues	6,161		6,161	-	6,161	(93.97)	(1,586)
10	Other electric rents	3,060		3,060	-	3,060	45.21	379
11	Return & depr - Catawba general plant	11,264		11,264	-	11,264	(15.21)	(469)
12	Other misc revenues - CIAC & comp for svc	13,227		13,227	-	13,227	(15.21)	(551)
13	Other misc revenues - timber sales	(3)		(3)	-	(3)	-	-
14	Profit or loss on sale of M&S	(1)		(1)	-	(1)	-	-
15	Deferred DSM costs - NC	(377)		(377)	-	(377)	-	-
16	Other revenue affiliate	8,729		8,729	-	8,729	40.21	962
17	Revenues from transm of electricity to others	5,032		5,032	-	5,032	40.41	557
18	Other electric revenues	3,639		3,639	-	3,639	36.03	359
19	Other transmission revenues	1,916		1,916		1,916		-
20	Electric operating revenues	4,904,081	(109,378)	4,794,703	(122,275)	\$4,672,428	40.12	513,568
21	Fuel used in electric generation	989,374	172,162	1,161,536	(122,113)	1,039,423	(22.33)	(63,590)
22	Account 555 - Purchased Power	331,394	(170,936)	160,458	-	160,458	(39.00)	(17,145)
23	Retail Deferred Fuel Exp - NCR	(137,046)		(137,046)		(137,046)	(22.33)	8,384
24	NRC license fees in Acct 524			-	-	-		-
25	NRC inspection fees in Acct 524			-	-	-		-
26	Labor expense	571,027	(31,666)	539,361	0	539,361	(36.37)	(53,744)
27	Benefits expense	69,021	(3,560)	65,461	(889)	64,572	(12.21)	(2,160)
28	Uncollectibles expense	12,692		12,692		12,692		-
29	Regulatory commission expense	8,163		8,163	-	8,163	(89.82)	(2,009)
30	Property insurance	1,625		1,625	-	1,625	474.55	2,113
31	Injuries and damages for corp	5,274		5,274	-	5,274	145.50	2,102
32	Other O&M expense	708,137		708,137	(72)	708,065	(36.49)	(70,787)
33	Remove non-fuel rider costs and update fuel		(117,372)	(117,372)	-	(117,372)	(33.90)	10,901
34	Adjust for hydro station transfer		(1,560)	(1,560)	-	(1,560)	(33.90)	145
35	Adjust for inflation		4,594	4,594	-	4,594	(30.71)	(387)
36	Adjust for approved reg assets and liabilities		1,408	1,408	-	1,408		-
37	Adjust for severance		(47,462)	(47,462)	-	(47,462)	(36.37)	4,729
38	Adjust vegetation management, storm, & outside svcs		7,739	7,739	1	7,739	(36.49)	(774)
39	Adjust for credit card fees		8,976	8,976		8,976	(36.49)	(897)
40	Adjust for nuclear refueling outage costs		(1,946)	(1,946)		(1,946)	(36.49)	195

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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(d)

Line No.	Item	Per Books Amounts ^{1/}	Company Ratemaking Adjustments ^{2/}	After Company Adjustments ^{3/}	Public Staff Adjustments ^{4/}	After Public Staff Adjustments ^{5/}	(Lead) / Lag Days ^{6/}	Working Capital From Lead/ Lag Study ^{7/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
41	Adjust for merger related costs		(5,530)	(5,530)		(5,530)	(33.90)	514
42	Annualize retail revenues for current rates		(826)	(826)		(826)	(33.90)	77
43	Normalize for weather		(368)	(368)		(368)	(33.90)	34
44	Annualize revenues for customer growth		2,354	2,354		2,354	(33.90)	(219)
45	Amortize rate case costs		801	801		801	-	-
46	Adjust aviation expense		(2,304)	(2,304)		(2,304)	(33.90)	214
47	Adjust NC regulatory fee		(500)	(500)	(161)	(661)	(89.82)	163
48	Adjust other revenues		(36)	(36)	-	(36)	(33.90)	3
49	Other adjustments to settled items		(24,825)	(24,825)		(24,825)	(33.90)	2,306
50	Total O&M expenses	2,559,661	(210,857)	2,348,804	(123,235)	2,225,569		(179,832)
51	Depreciation expense	838,805	352,905	1,191,710	(103,595)	1,088,115	-	-
52	REPS rider NC amortization expense			-	-	-		-
53	Annual NOx proceeds			-	-	-		-
54	Other amortization expense		-	-	(29,734)	(29,734)		-
55	Remove non-fuel rider costs			-	-	-		-
56	Rounding					-		-
57	Depreciation and amortization expense	838,805	352,905	1,191,710	(133,329)	1,058,381		-
58	Other taxes - NC property tax	80,657	18,691	99,348	(52)	99,296	(186.50)	(50,736)
59	Other taxes - NC franchise & deferred prop. tax			-	-	-		-
60	Other taxes - NC state unemployment tax			-	-	-		-
61	Other taxes - NC industrial comm - electric			-	-	-		-
62	Other taxes - SC property tax	81,208		81,208	-	81,208	(196.50)	(43,719)
63	Other taxes - SC property tax - license fee			-	-	-		-
64	Other taxes - NC franchise tax			-	-	-		-
65	Other taxes - SC state unemployment tax			-	-	-		-
66	Other taxes - federal payroll taxes	34,411		34,411	-	34,411	(51.17)	(4,824)
67	Other taxes - federal unemployment tax			-	-	-		-
68	Other taxes - federal highway use tax			-	-	-		-
69	Other taxes	(1,594)	(193)	(1,787)	-	(1,787)	(21.04)	103
70	Adjust payroll taxes		(1,023)	(1,023)	-	(1,023)	(51.17)	143
71	Total taxes other than income	194,682	17,475	212,157	(52)	212,105		(99,033)
72	Interest on customer deposits	7,130	-	7,130	-	7,130	(218.40)	(4,266)
73	Current state and federal income tax	2,397	-	2,397	-	2,397	(44.75)	(294)
74	Deferred income taxes	222,600	(79,407)	143,193	-	143,193	-	-
75	Adjust income taxes			-	32,362	32,362		-
76	Total income taxes	224,997	(79,407)	145,590	32,362	177,953		(294)
77	Amortization of ITC	(3,526)	690	(2,836)	-	(2,836)	-	-
78	Total electric operating expenses	3,821,749	80,806	3,902,555	(224,254)	3,678,302		(283,425)

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CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(d)

Line No.	Item	Per Books Amounts ^{1/}	Company Ratemaking Adjustments ^{2/}	After Company Adjustments ^{3/}	Public Staff Adjustments ^{4/}	After Public Staff Adjustments ^{5/}	(Lead) / Lag Days ^{6/}	Working Capital From Lead/Lag Study ^{7/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
79	Interest expense	317,199	33,759	350,958	(4,262)	346,696	(85.20)	(80,927)
80	Income available for common equity	765,133	(223,943)	541,191	106,240	647,431		-
81	Net operating income for return	1,082,332	(190,184)	892,148	101,978	994,127		(80,927)
82	Total requirement	<u>\$4,904,081</u>	<u>(\$109,378)</u>	<u>\$4,794,703</u>	<u>(\$122,275)</u>	<u>\$4,672,428</u>		<u>(\$364,352)</u>
83	Cash working capital before sales tax requirement							\$149,216
84	Working capital related to sales tax							6,204
85	Cash working capital per Public Staff							155,420
86	Amount per Company application							160,194 ^{2/}
87	Adjustment to cash working capital							<u>(\$4,774)</u>

1/ E-1, Item No. 14, Appendix A, Lead Lag Details, NC Retail Jurisdictional Amount.

2/ McManues Second Supplemental Exhibit 1.

3/ Column (a) plus Column (b).

4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(d)(1), Column (aa).

5/ Column (c) plus Column (d).

6/ E-1, Item No. 14, Appendix A, Lead Lag Details, Lead Lag Days, corrected per responses to Company data request responses.

7/ Column (e) divided by 365 days times Column (f).

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO BE
REFLECTED IN LEAD / LAG CALCULATION
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(d)(1)
Page 1 of 6

Line No.	Item	Adjust Weather Normalization 1/	Update Plant to 1/31/2020 1/	Update Customer Growth & Usage to 1/31/2020 1/	Adjust Distribution Vegetation Management 1/	Adjust Salaries and Wages 1/
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Rate revenues	\$2,691	\$0	(\$581)	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-
4	Forfeited discounts	-	-	-	-	-
5	Miscellaneous service revenues	-	-	-	-	-
6	Rent revenues - extra facilities - depreciation	-	-	-	-	-
7	Rent revenues - extra facilities - other	-	-	-	-	-
8	Rent revenues - pole & line attachments	-	-	-	-	-
9	Tower lease revenues	-	-	-	-	-
10	Other electric rents	-	-	-	-	-
11	Return & depr - Catawba general plant	-	-	-	-	-
12	Other misc revenues - CIAC & comp for svc	-	-	-	-	-
13	Other misc revenues - timber sales	-	-	-	-	-
14	Profit or loss on sale of M&S	-	-	-	-	-
15	Deferred DSM costs - NC	-	-	-	-	-
16	Other revenue affiliate	-	-	-	-	-
17	Revenues from transm of electricity to others	-	-	-	-	-
18	Other electric revenues	-	-	-	-	-
19	Electric operating revenues	2,691	-	(581)	-	-
20	Fuel used in electric generation	\$2,695	-	(\$584)	-	-
21	Account 555 - Purchased Power	-	-	-	-	-
22	NRC license fees in Acct 524	-	-	-	-	-
23	NRC inspection fees in Acct 524	-	-	-	-	-
24	Labor expense	-	-	-	-	-
25	Benefits expense	-	-	-	-	-
26	Uncollectibles expense	-	-	-	-	-
27	Regulatory commission expense	-	-	-	-	-
28	Property insurance	-	-	-	-	-
29	Injuries and damages for corp	-	-	-	-	-
30	Other O&M expense	-	-	(73)	-	-
31	Remove non-fuel rider costs and update fuel	-	-	-	-	-
32	Adjust for hydro station transfer	-	-	-	-	-
33	Adjust for inflation	-	-	-	-	-
34	Adjust for approved reg assets and liabilities	-	-	-	-	-
35	Adjust for severance	-	-	-	-	-
36	Adjust vegetation management, storm, & outside svcs	-	-	-	0	-
37	Adjust NC regulatory fee	-	-	-	-	-
38	Adjust other revenues	-	-	-	-	-
39	Total O&M expenses	2,695	-	(657)	0	-
40	Depreciation expense	-	(2,795)	-	-	-
41	REPS rider NC amortization expense	-	-	-	-	-
42	Annual NOx proceeds	-	-	-	-	-
43	Other amortization expense	-	-	-	-	-
44	Remove non-fuel rider costs	-	-	-	-	-
45	Depreciation and amortization expense	-	(2,795)	-	-	-
46	Other taxes - NC property tax	-	(52)	-	-	-
47	Other taxes - NC franchise & deferred prop. tax	-	-	-	-	-
48	Other taxes - NC state unemployment tax	-	-	-	-	-
49	Other taxes - NC industrial comm - electric	-	-	-	-	-
50	Other taxes - SC property tax	-	-	-	-	-
51	Other taxes - SC property tax - license fee	-	-	-	-	-
52	Other taxes - NC franchise tax	-	-	-	-	-
53	Other taxes - SC state unemployment tax	-	-	-	-	-
54	Other taxes - federal payroll taxes	-	-	-	-	-
55	Other taxes - federal unemployment tax	-	-	-	-	-
56	Other taxes - federal highway use tax	-	-	-	-	-
57	Other taxes	-	-	-	-	-
58	Adjust payroll taxes	-	-	-	-	-
59	Total taxes other than income	-	(52)	-	-	-
60	Interest on customer deposits	-	-	-	-	-
61	Current state and federal income tax	-	-	-	-	-
62	Deferred income taxes	-	-	-	-	-
63	Adjust income taxes	(3)	665	18	-	-
64	Total income taxes	(3)	665	18	-	-
65	Amortization of ITC	-	-	-	-	-
66	Total electric operating expenses	2,692	(2,182)	(639)	0	-
67	Interest expense	-	-	-	-	-
68	Income available for common equity (L39 -L66 - L67)	(1)	2,182	58	(0)	-
69	Net operating income for return	(1)	2,182	58	(0)	-
70	Total requirement	\$2,691	\$0	(\$581)	\$0	\$0

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Line No.	Item	Remove EDIT Refund for Treatment as a Rider 1/	Adjust for Hydro Station Sale 1/	Adjust Depreciation Rates 1/	Adjust Incentives 1/	Adjust Executive Compensation 1/
		(f)	(g)	(h)	(i)	(j)
1	Electric operating revenues:					
2	Rate revenues	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-
4	Forfeited discounts	-	-	-	-	-
5	Miscellaneous service revenues	-	-	-	-	-
6	Rent revenues - extra facilities - depreciation	-	-	-	-	-
7	Rent revenues - extra facilities - other	-	-	-	-	-
8	Rent revenues - pole & line attachments	-	-	-	-	-
9	Tower lease revenues	-	-	-	-	-
10	Other electric rents	-	-	-	-	-
11	Return & depr - Catawba general plant	-	-	-	-	-
12	Other misc revenues - CIAC & comp for svc	-	-	-	-	-
13	Other misc revenues - timber sales	-	-	-	-	-
14	Profit or loss on sale of M&S	-	-	-	-	-
15	Deferred DSM costs - NC	-	-	-	-	-
16	Other revenue affiliate	-	-	-	-	-
17	Revenues from transm of electricity to others	-	-	-	-	-
18	Other electric revenues	-	-	-	-	-
19	Electric operating revenues	-	-	-	-	-
20	Fuel used in electric generation	-	-	-	-	-
21	Account 555 - Purchased Power	-	-	-	-	-
22	NRC license fees in Acct 524	-	-	-	-	-
23	NRC inspection fees in Acct 524	-	-	-	-	-
24	Labor expense	-	-	-	-	0
25	Benefits expense	-	-	-	-	-
26	Uncollectibles expense	-	-	-	-	-
27	Regulatory commission expense	-	-	-	-	-
28	Property insurance	-	-	-	-	-
29	Injuries and damages for corp	-	-	-	-	-
30	Other O&M expense	-	-	-	-	-
31	Remove non-fuel rider costs and update fuel	-	-	-	-	-
32	Adjust for hydro station transfer	-	-	-	-	-
33	Adjust for inflation	-	-	-	-	-
34	Adjust for approved reg assets and liabilities	-	-	-	-	-
35	Adjust for severance	-	-	-	-	-
36	Adjust vegetation management, storm, & outside svcs	-	-	-	-	-
37	Adjust NC regulatory fee	-	-	-	-	-
38	Adjust other revenues	-	-	-	-	-
39	Total O&M expenses	-	-	-	-	0
40	Depreciation expense	-	(2,109)	(33,459)	-	-
41	REPS rider NC amortization expense	-	-	-	-	-
42	Annual NOx proceeds	-	-	-	-	-
43	Other amortization expense	-	-	-	-	-
44	Remove non-fuel rider costs	-	-	-	-	-
45	Depreciation and amortization expense	-	(2,109)	(33,459)	-	-
46	Other taxes - NC property tax	-	-	-	-	-
47	Other taxes - NC franchise & deferred prop. tax	-	-	-	-	-
48	Other taxes - NC state unemployment tax	-	-	-	-	-
49	Other taxes - NC industrial comm - electric	-	-	-	-	-
50	Other taxes - SC property tax	-	-	-	-	-
51	Other taxes - SC property tax - license fee	-	-	-	-	-
52	Other taxes - NC franchise tax	-	-	-	-	-
53	Other taxes - SC state unemployment tax	-	-	-	-	-
54	Other taxes - federal payroll taxes	-	-	-	-	-
55	Other taxes - federal unemployment tax	-	-	-	-	-
56	Other taxes - federal highway use tax	-	-	-	-	-
57	Other taxes	-	-	-	-	-
58	Adjust payroll taxes	-	-	-	-	-
59	Total taxes other than income	-	-	-	-	-
60	Interest on customer deposits	-	-	-	-	-
61	Current state and federal income tax	-	-	-	-	-
62	Deferred income taxes	-	-	-	-	-
63	Adjust income taxes	-	492	7,813	-	-
64	Total income taxes	-	492	7,813	-	-
65	Amortization of ITC	-	-	-	-	-
66	Total electric operating expenses	-	(1,617)	(25,646)	-	0
67	Interest expense	-	-	-	-	-
68	Income available for common equity (L39 -L66 - L67)	-	1,617	25,646	-	(0)
69	Net operating income for return	-	1,617	25,646	-	(0)
70	Total requirement	\$0	\$0	\$0	\$0	\$0

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Line No.	Item	Adjust Aviation Expenses (k)	1/	Adjust Credit Card Fees (l)	1/	Adjust Advertising Expense (m)	1/	Adjust Storm Deferral (n)	1/	Adjust Lobbying Expense (o)	1/
1	Electric operating revenues:										
2	Rate revenues	\$0		\$0		\$0		\$0		\$0	
3	Sales for resale revenues	-		-		-		-		-	
4	Forfeited discounts	-		-		-		-		-	
5	Miscellaneous service revenues	-		-		-		-		-	
6	Rent revenues - extra facilities - depreciation	-		-		-		-		-	
7	Rent revenues - extra facilities - other	-		-		-		-		-	
8	Rent revenues - pole & line attachments	-		-		-		-		-	
9	Tower lease revenues	-		-		-		-		-	
10	Other electric rents	-		-		-		-		-	
11	Return & depr - Catawba general plant	-		-		-		-		-	
12	Other misc revenues - CIAC & comp for svc	-		-		-		-		-	
13	Other misc revenues - timber sales	-		-		-		-		-	
14	Profit or loss on sale of M&S	-		-		-		-		-	
15	Deferred DSM costs - NC	-		-		-		-		-	
16	Other revenue affiliate	-		-		-		-		-	
17	Revenues from transm of electricity to others	-		-		-		-		-	
18	Other electric revenues	-		-		-		-		-	
19	Electric operating revenues	-		-		-		-		-	
20	Fuel used in electric generation	-		-		-		-		-	
21	Account 555 - Purchased Power	-		-		-		-		-	
22	NRC license fees in Acct 524	-		-		-		-		-	
23	NRC inspection fees in Acct 524	-		-		-		-		-	
24	Labor expense	-		-		-		-		-	
25	Benefits expense	-		-		-		-		-	
26	Uncollectibles expense	-		-		-		-		-	
27	Regulatory commission expense	-		-		-		-		-	
28	Property insurance	-		-		-		-		-	
29	Injuries and damages for corp	-		-		-		-		-	
30	Other O&M expense	-		\$0		\$0		-		-	
31	Remove non-fuel rider costs and update fuel	-		-		-		-		-	
32	Adjust for hydro station transfer	-		-		-		-		-	
33	Adjust for inflation	-		-		-		-		-	
34	Adjust for approved reg assets and liabilities	-		-		-		-		-	
35	Adjust for severance	-		-		-		-		-	
36	Adjust vegetation management, storm, & outside svcs	0		-		-		-		-	
37	Adjust NC regulatory fee	-		-		-		-		-	
38	Adjust other revenues	-		-		-		-		-	
39	Total O&M expenses	0		0		-		-		-	
40	Depreciation expense	-		-		-		\$0		-	
41	REPS rider NC amortization expense	-		-		-		-		-	
42	Annual NOx proceeds	-		-		-		-		-	
43	Other amortization expense	-		-		-		-		-	
44	Remove non-fuel rider costs	-		-		-		-		-	
45	Depreciation and amortization expense	-		-		-		-		-	
46	Other taxes - NC property tax	-		-		-		-		-	
47	Other taxes - NC franchise & deferred prop. tax	-		-		-		-		-	
48	Other taxes - NC state unemployment tax	-		-		-		-		-	
49	Other taxes - NC industrial comm - electric	-		-		-		-		-	
50	Other taxes - SC property tax	-		-		-		-		-	
51	Other taxes - SC property tax - license fee	-		-		-		-		-	
52	Other taxes - NC franchise tax	-		-		-		-		-	
53	Other taxes - SC state unemployment tax	-		-		-		-		-	
54	Other taxes - federal payroll taxes	-		-		-		-		-	
55	Other taxes - federal unemployment tax	-		-		-		-		-	
56	Other taxes - federal highway use tax	-		-		-		-		-	
57	Other taxes	-		-		-		-		-	
58	Adjust payroll taxes	-		-		-		-		-	
59	Total taxes other than income	-		-		-		-		-	
60	Interest on customer deposits	-		-		-		-		-	
61	Current state and federal income tax	-		-		-		-		-	
62	Deferred income taxes	-		-		-		-		-	
63	Adjust income taxes	-		-		-		-		-	
64	Total income taxes	-		-		-		-		-	
65	Amortization of ITC	-		-		-		-		-	
66	Total electric operating expenses	0		0		-		-		-	
67	Interest expense	-		-		-		-		-	
68	Income available for common equity (L39 -L66 - L67)	(0)		(0)		-		-		-	
69	Net operating income for return	(0)		(0)		-		-		-	
70	Total requirement	\$0		\$0		\$0		\$0		\$0	

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Line No.	Item	Adjust Board of Directors Expense 1/ (p)	Adjust Deferred Environmental Costs 1/ (q)	Adjust Outside Services 1/ (r)	Adjust Sponsorships and Donations 1/ (s)	Adjust Storm Normalization 1/ (t)
1	Electric operating revenues:					
2	Rate revenues	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-
4	Forfeited discounts	-	-	-	-	-
5	Miscellaneous service revenues	-	-	-	-	-
6	Rent revenues - extra facilities - depreciation	-	-	-	-	-
7	Rent revenues - extra facilities - other	-	-	-	-	-
8	Rent revenues - pole & line attachments	-	-	-	-	-
9	Tower lease revenues	-	-	-	-	-
10	Other electric rents	-	-	-	-	-
11	Return & depr - Catawba general plant	-	-	-	-	-
12	Other misc revenues - CIAC & comp for svc	-	-	-	-	-
13	Other misc revenues - timber sales	-	-	-	-	-
14	Profit or loss on sale of M&S	-	-	-	-	-
15	Deferred DSM costs - NC	-	-	-	-	-
16	Other revenue affiliate	-	-	-	-	-
17	Revenues from transm of electricity to others	-	-	-	-	-
18	Other electric revenues	-	-	-	-	-
19	Electric operating revenues	-	-	-	-	-
20	Fuel used in electric generation	-	-	-	-	-
21	Account 555 - Purchased Power	-	-	-	-	-
22	NRC license fees in Acct 524	-	-	-	-	-
23	NRC inspection fees in Acct 524	-	-	-	-	-
24	Labor expense	-	-	-	-	-
25	Benefits expense	-	-	-	-	-
26	Uncollectibles expense	-	-	-	-	-
27	Regulatory commission expense	-	-	-	-	-
28	Property insurance	-	-	-	-	-
29	Injuries and damages for corp	-	-	-	-	-
30	Other O&M expense	-	-	-	-	0
31	Remove non-fuel rider costs and update fuel	-	-	-	-	-
32	Adjust for hydro station transfer	-	-	-	-	-
33	Adjust for inflation	-	-	-	-	-
34	Adjust for approved reg assets and liabilities	-	-	-	-	-
35	Adjust for severance	-	-	-	-	-
36	Adjust vegetation management, storm, & outside svcs	-	-	-	-	-
37	Adjust NC regulatory fee	-	-	-	-	-
38	Adjust other revenues	-	-	-	-	-
39	Total O&M expenses	-	-	-	-	0
40	Depreciation expense	-	(65,243)	-	-	-
41	REPS rider NC amortization expense	-	-	-	-	-
42	Annual NOx proceeds	-	-	-	-	-
43	Other amortization expense	-	-	-	-	-
44	Remove non-fuel rider costs	-	-	-	-	-
45	Depreciation and amortization expense	-	(65,243)	-	-	-
46	Other taxes - NC property tax	-	-	-	-	-
47	Other taxes - NC franchise & deferred prop. tax	-	-	-	-	-
48	Other taxes - NC state unemployment tax	-	-	-	-	-
49	Other taxes - NC industrial comm - electric	-	-	-	-	-
50	Other taxes - SC property tax	-	-	-	-	-
51	Other taxes - SC property tax - license fee	-	-	-	-	-
52	Other taxes - NC franchise tax	-	-	-	-	-
53	Other taxes - SC state unemployment tax	-	-	-	-	-
54	Other taxes - federal payroll taxes	-	-	-	-	-
55	Other taxes - federal unemployment tax	-	-	-	-	-
56	Other taxes - federal highway use tax	-	-	-	-	-
57	Other taxes	-	-	-	-	-
58	Adjust payroll taxes	-	-	-	-	-
59	Total taxes other than income	-	-	-	-	-
60	Interest on customer deposits	-	-	-	-	-
61	Current state and federal income tax	-	-	-	-	-
62	Deferred income taxes	-	-	-	-	-
63	Adjust income taxes	-	15,234	-	-	-
64	Total income taxes	-	15,234	-	-	-
65	Amortization of ITC	-	-	-	-	-
66	Total electric operating expenses	-	(50,009)	-	-	0
67	Interest expense	-	-	-	-	-
68	Income available for common equity (L39 -L66 - L67)	-	50,009	-	-	(0)
69	Net operating income for return	-	50,009	-	-	(0)
70	Total requirement	\$0	\$0	\$0	\$0	\$0

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Line No.	Item	Adjust O&M related to Retired Hydro Units 1/ (u)	Adjust Rate Case Expense 1/ (v)	Adjust Severances 1/ (w)	Include Flowback of Protected EDIT due to Tax Cuts & Jobs Act 1/ (x)	Adjustment to Inflation Adjustment 1/ (y)
1	Electric operating revenues:					
2	Rate revenues	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues					-
4	Forfeited discounts					-
5	Miscellaneous service revenues					-
6	Rent revenues - extra facilities - depreciation					-
7	Rent revenues - extra facilities - other					-
8	Rent revenues - pole & line attachments					-
9	Tower lease revenues					-
10	Other electric rents					-
11	Return & depr - Catawba general plant					-
12	Other misc revenues - CIAC & comp for svc					-
13	Other misc revenues - timber sales					-
14	Profit or loss on sale of M&S					-
15	Deferred DSM costs - NC					-
16	Other revenue affiliate					-
17	Revenues from transm of electricity to others					-
18	Other electric revenues					-
19	Electric operating revenues	-	-	-	-	-
20	Fuel used in electric generation					-
21	Account 555 - Purchased Power					-
22	NRC license fees in Acct 524					-
23	NRC inspection fees in Acct 524					-
24	Labor expense					-
25	Benefits expense					-
26	Uncollectibles expense					-
27	Regulatory commission expense					-
28	Property insurance					-
29	Injuries and damages for corp					-
30	Other O&M expense	(0)	0	0		-
31	Remove non-fuel rider costs and update fuel					-
32	Adjust for hydro station transfer					-
33	Adjust for inflation					-
34	Adjust for approved reg assets and liabilities					-
35	Adjust for severance					-
36	Adjust vegetation management, storm, & outside svcs					-
37	Adjust NC regulatory fee					-
38	Adjust other revenues					-
39	Total O&M expenses	(0)	-	0	-	-
40	Depreciation expense					-
41	REPS rider NC amortization expense					-
42	Annual NOx proceeds					-
43	Other amortization expense				(\$29,734)	-
44	Remove non-fuel rider costs					-
45	Depreciation and amortization expense	-	-	-	(29,734)	-
46	Other taxes - NC property tax					-
47	Other taxes - NC franchise & deferred prop. tax					-
48	Other taxes - NC state unemployment tax					-
49	Other taxes - NC industrial comm - electric					-
50	Other taxes - SC property tax					-
51	Other taxes - SC property tax - license fee					-
52	Other taxes - NC franchise tax					-
53	Other taxes - SC state unemployment tax					-
54	Other taxes - federal payroll taxes					-
55	Other taxes - federal unemployment tax					-
56	Other taxes - federal highway use tax					-
57	Other taxes					-
58	Adjust payroll taxes					-
59	Total taxes other than income	-	-	-	-	-
60	Interest on customer deposits	-	-	-	-	-
61	Current state and federal income tax					-
62	Deferred income taxes					-
63	Adjust income taxes	-	-	-	6,943	-
64	Total income taxes	-	-	-	6,943	-
65	Amortization of ITC	-	-	-	-	-
66	Total electric operating expenses	(0)	-	0	(22,791)	-
67	Interest expense	-	-	-	-	-
68	Income available for common equity (L39 -L66 - L67)	0	-	(0)	22,791	-
69	Net operating income for return	0	-	(0)	22,791	-
70	Total requirement	\$0	\$0	\$0	\$0	\$0

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Line No.	Item	Adjustment to Update Fuel Factor 1/ (z)	Adjust Deferred Non-ARO Environmental Costs 1/ (aa)	Remove Clemson CHP (bb)	Update Benefits (cc)	Interest Synchronization 1/ (dd)	Total Public Staff Adjustments 1/ (ee)
1	Electric operating revenues:						
2	Rate revenues	(124,385)	\$0	\$0	\$0	\$0	(\$122,275)
3	Sales for resale revenues					-	0
4	Forfeited discounts					-	0
5	Miscellaneous service revenues					-	0
6	Rent revenues - extra facilities - depreciation					-	0
7	Rent revenues - extra facilities - other					-	0
8	Rent revenues - pole & line attachments					-	0
9	Tower lease revenues					-	0
10	Other electric rents					-	0
11	Return & depr - Catawba general plant					-	0
12	Other misc revenues - CIAC & comp for svc					-	0
13	Other misc revenues - timber sales					-	0
14	Profit or loss on sale of M&S					-	0
15	Deferred DSM costs - NC					-	0
16	Other revenue affiliate					-	0
17	Revenues from transm of electricity to others					-	0
18	Other electric revenues				-	-	0
19	Electric operating revenues	(124,385)	-	-	-	-	(122,275)
20	Fuel used in electric generation	(\$124,224)			0	-	(\$122,113)
21	Account 555 - Purchased Power				0	-	-
22	NRC license fees in Acct 524					-	-
23	NRC inspection fees in Acct 524					-	-
24	Labor expense					-	0
25	Benefits expense				(889)	-	(889)
26	Uncollectibles expense					-	-
27	Regulatory commission expense					-	-
28	Property insurance					-	-
29	Injuries and damages for corp					-	-
30	Other O&M expense					-	(72)
31	Remove non-fuel rider costs and update fuel					-	-
32	Adjust for hydro station transfer					-	-
33	Adjust for inflation					-	-
34	Adjust for approved reg assets and liabilities					-	-
35	Adjust for severance					-	-
36	Adjust vegetation management, storm, & outside svcs					-	1
37	Adjust NC regulatory fee	(\$161)				-	(161)
38	Adjust other revenues					-	-
39	Total O&M expenses	(124,385)	-	-	(889)	-	(123,235)
40	Depreciation expense	\$0	\$0	\$11	\$0	-	(103,595)
41	REPS rider NC amortization expense					-	-
42	Annual NOx proceeds					-	-
43	Other amortization expense					-	(29,734)
44	Remove non-fuel rider costs					-	-
45	Depreciation and amortization expense	-	-	11	-	-	(133,329)
46	Other taxes - NC property tax					-	(52)
47	Other taxes - NC franchise & deferred prop. tax					-	-
48	Other taxes - NC state unemployment tax					-	-
49	Other taxes - NC industrial comm - electric					-	-
50	Other taxes - SC property tax					-	-
51	Other taxes - SC property tax - license fee					-	-
52	Other taxes - NC franchise tax					-	-
53	Other taxes - SC state unemployment tax					-	-
54	Other taxes - federal payroll taxes					-	-
55	Other taxes - federal unemployment tax					-	-
56	Other taxes - federal highway use tax					-	-
57	Other taxes				0	-	-
58	Adjust payroll taxes					-	-
59	Total taxes other than income	-	-	-	-	-	(52)
60	Interest on customer deposits	-	-	-	-	-	-
61	Current state and federal income tax	-	-	-	-	-	-
62	Deferred income taxes	-	-	-	-	-	-
63	Adjust income taxes	-	-	(3)	208	995	32,362
64	Total income taxes	-	-	(3)	208	995	32,362
65	Amortization of ITC	-	-	-	-	-	-
66	Total electric operating expenses	(124,385)	-	8	(681)	995	(224,254)
67	Interest expense	-	-	-	-	(4,262)	(4,262)
68	Income available for common equity (L39 -L66 - L67)	0	-	(8)	681	3,266	106,240
69	Net operating income for return	0	-	(8)	681	(995)	101,978
70	Total requirement	(\$124,385)	\$0	\$0	-	\$0	(\$122,275)

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North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL
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For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exh. 1
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Line No.	Item	Under Present Rates	(Lead) Lag	Iteration 1		CWC
		After Adjustments ^{1/}	Days ^{4/}	Increase (c)	With Increase ^{11/}	Change ^{13/}
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Rate revenues	\$4,519,540	39.58	\$257,656 ^{5/}	\$4,777,196	\$27,940
3	Sales for resale revenues	61,600	35.44	-	61,600	-
4	Forfeited discounts	15,256	70.00	-	15,256	-
5	Miscellaneous service revenues	9,541	76.00	- ^{6/}	9,541	-
6	Rent revenues - extra facilities - depreciation	(38,869)	-	-	(38,869)	-
7	Rent revenues - extra facilities - other	25,058	30.13	-	25,058	-
8	Rent revenues - pole & line attachments	27,655	143.39	-	27,655	-
9	Tower lease revenues	6,161	(93.97)	-	6,161	-
10	Other electric rents	3,060	45.21	-	3,060	-
11	Return & depr - Catawba general plant	11,264	(15.21)	-	11,264	-
12	Other misc revenues - CIAC & comp for svc	13,227	(15.21)	-	13,227	-
13	Other misc revenues - timber sales	(3)	-	-	(3)	-
14	Profit or loss on sale of M&S	(1)	-	-	(1)	-
15	Deferred DSM costs - NC	(377)	-	-	(377)	-
16	Other revenue affiliate	8,729	40.21	-	8,729	-
17	Revenues from transm of electricity to others	5,032	40.41	-	5,032	-
18	Other electric revenues	3,639	36.03	-	3,639	-
19	Electric operating revenues	<u>4,672,428</u>		<u>257,656 ^{7/}</u>	<u>4,930,084</u>	<u>27,940</u>
20	Fuel used in electric generation	1,039,423	(22.33)	-	1,039,423	-
21	Account 555 - Purchased Power	160,458	(39.00)	-	160,458	-
22	Retail Deferred Fuel Exp - NCR	(137,046)	(22.33)	-	(137,046)	-
23	NRC license fees in Acct 524	-	-	-	-	-
24	NRC inspection fees in Acct 524	-	-	-	-	-
25	Labor expense	539,361	(36.37)	-	539,361	-
26	Benefits expense	64,572	(12.21)	-	64,572	-
27	Uncollectibles expense	12,692	-	-	12,692	-
28	Regulatory commission expense	8,163	(89.82)	-	8,163	-
29	Property insurance	1,625	474.55	-	1,625	-
30	Injuries and damages for corp	5,274	145.50	-	5,274	-
31	Other O&M expense	708,065	(36.49)	-	708,065	-
32	Remove non-fuel rider costs and update fuel	(117,372)	(33.90)	-	(117,372)	-
33	Adjust for hydro station transfer	(1,560)	(33.90)	-	(1,560)	-
34	Adjust for inflation	4,594	(30.71)	-	4,594	-
35	Adjust for approved reg assets and liabilities	1,408	-	-	1,408	-
36	Adjust for severance	(47,462)	(36.37)	-	(47,462)	-
37	Adjust vegetation management, storm, & outsid	7,739	(36.49)	-	7,739	-
38	Adjust for credit card fees	8,976	(36.49)	-	8,976	-
39	Adjust for nuclear refueling outage costs	(1,946)	(36.49)	-	(1,946)	-
40	Adjust for merger related costs	(5,530)	(33.90)	-	(5,530)	-
41	Annualize retail revenues for current rates	(826)	(33.90)	-	(826)	-
42	Normalize for weather	(368)	(33.90)	-	(368)	-
43	Annualize revenues for customer growth	2,354	(33.90)	-	2,354	-
44	Amortize rate case costs	801	-	-	801	-
45	Adjust aviation expense	(2,304)	(33.90)	-	(2,304)	-
46	Adjust NC regulatory fee	(661)	(89.82)	-	(661)	-
47	Adjust other revenues	(36)	(33.90)	-	(36)	-
48	Other adjustments to reg fees and uncoll.	(24,825)	-	978 ^{8/}	(23,847)	-
49	Total O&M expenses	<u>2,250,394</u>		<u>978</u>	<u>2,250,394</u>	-
50						
51	Depreciation expense	1,088,115	-	-	1,088,115	-
52	REPS rider NC amortization expense	-	-	-	-	-
53	Annual NOx proceeds	-	-	-	-	-
54	Other amortization expense	(29,734)	-	-	(29,734)	-
55	Remove non-fuel rider costs	-	-	-	-	-
56	Depreciation and amortization expense	<u>1,058,381</u>		<u>-</u>	<u>1,058,381</u>	-
57	Other taxes - NC property tax	99,296	(186.50)	-	99,296	-
58	Other taxes - NC franchise & deferred prop. tax	-	-	-	-	-
59	Other taxes - NC state unemployment tax	-	-	-	-	-
60	Other taxes - NC industrial comm - electric	-	-	-	-	-
61	Other taxes - SC property tax	81,208	(196.50)	-	81,208	-
62	Other taxes - SC property tax - license fee	-	-	-	-	-
63	Other taxes - NC franchise tax	-	-	-	-	-
64	Other taxes - SC state unemployment tax	-	-	-	-	-
65	Other taxes - federal payroll taxes	34,411	(51.17)	-	34,411	-
66	Other taxes - federal unemployment tax	-	-	-	-	-
67	Other taxes - federal highway use tax	-	-	-	-	-
68	Other taxes	(1,787)	(21.04)	-	(1,787)	-
69	Adjust payroll taxes	(1,023)	(51.17)	-	(1,023)	-
70	Current state and federal income tax	<u>212,105</u>		<u>-</u>	<u>212,105</u>	-
71	Interest on customer deposits	<u>7,130</u>	(218.40)	<u>-</u>	<u>7,130</u>	-
72	Current state and federal income tax	2,397	(44.75)	-	2,397	-
73	Deferred income taxes	143,193	-	-	143,193	-
74	Adjust income taxes	32,362	-	59,935 ^{9/}	92,297	-
75	Total income taxes	<u>177,953</u>		<u>59,935</u>	<u>237,888</u>	-
76	Amortization of ITC	<u>(2,836)</u>	-	<u>-</u>	<u>(2,836)</u>	-
77	Total electric operating expenses	<u>3,703,127</u>		<u>60,913</u>	<u>3,763,062</u>	-
78	Interest expense	346,696	(85.20)	-	346,696	-
79	Income available for common equity	<u>647,431</u>	-	<u>196,743 ^{10/}</u>	<u>844,174 ^{12/}</u>	-
80	Net operating income for return	<u>994,127</u>		<u>196,743</u>	<u>1,190,870</u>	-
81	Total requirement	<u>\$4,697,253</u>		<u>257,657</u>	<u>\$4,953,932</u>	<u>\$0</u>
82	Cumulative change in working capital					\$27,940
83	Rate base under present rates					16,910,528
84	Rate base after rate increase	<u>\$16,910,528 ^{2/}</u>				<u>\$16,938,468</u>
85	Overall rate of return	5.88%				7.03%
86	Target rate of return	7.04% ^{3/}				7.04% ^{3/}

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(d), Column (d) Line 19 times (uncollectibles rate of 0.25010%+
2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2, Line 13, Column (c) regulatory fee rate, net of uncollectibles,
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 3, Column (f) of .0012935.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(d), Column (f).
5/ Line 19 minus (Sum of Line 3 thru Line 18).
6/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3, Line 3, Column (c) Line 79
7/ Line 79 divided by retention factor of 0.7635890.
8/ Column (d) minus Column (a).
9/ (Line 79 divided by (1 minus 23.3503%)) minus
10/ Column (d) minus Column (a).
11/ (Line 79 divided by (1 minus 23.3503%)) minus
12/ (Line 79 divided by (1 minus 23.3503%)) minus
13/ (Line 79 divided by (1 minus 23.3503%)) minus

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL
FROM LEAD / LAG STUDY AFTER RATE
INCREASE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exh. 1
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Line No.	Item	Iteration 2				Iteration 3			
		Increase	With Increase	CWC Change		Increase	With Increase	CWC Change	
		(f)	(g)	(h)	15/	(i)	(j)	(k)	24/
1	Electric operating revenues:								
2	Rate revenues	\$26,141	5/ \$4,803,337	\$2,835		\$233	5/ \$4,803,570	\$25	
3	Sales for resale revenues	-	61,600	-	-	-	61,600	-	-
4	Forfeited discounts	-	15,256	-	-	-	15,256	-	-
5	Miscellaneous service revenues	-	9,541	-	-	-	9,541	-	-
6	Rent revenues - extra facilities - depreciation	-	(38,869)	-	-	-	(38,869)	-	-
7	Rent revenues - extra facilities - other	-	25,058	-	-	-	25,058	-	-
8	Rent revenues - pole & line attachments	-	27,655	-	-	-	27,655	-	-
9	Tower lease revenues	-	6,161	-	-	-	6,161	-	-
10	Other electric rents	-	3,060	-	-	-	3,060	-	-
11	Return & depr - Catawba general plant	-	11,264	-	-	-	11,264	-	-
12	Other misc revenues - CIAC & comp for svc	-	13,227	-	-	-	13,227	-	-
13	Other misc revenues - timber sales	-	(3)	-	-	-	(3)	-	-
14	Profit or loss on sale of M&S	-	(1)	-	-	-	(1)	-	-
15	Deferred DSM costs - NC	-	(377)	-	-	-	(377)	-	-
16	Other revenue affiliate	-	8,729	-	-	-	8,729	-	-
17	Revenues from transm of electricity to others	-	5,032	-	-	-	5,032	-	-
18	Other electric revenues	-	3,639	-	-	-	3,639	-	-
19	Electric operating revenues	26,141	14/ 4,956,225	2,835	16/	233	20/ 4,956,459	25	24/
20	Fuel used in electric generation	-	1,039,423	-	-	-	1,039,423	-	-
21	Account 555 - Purchased Power	-	160,458	-	-	-	160,458	-	-
22	Retail Deferred Fuel Exp - NCR	-	(137,046)	-	-	-	(137,046)	-	-
23	NRC license fees in Acct 524	-	-	-	-	-	-	-	-
24	NRC inspection fees in Acct 524	-	-	-	-	-	-	-	-
25	Labor expense	-	539,361	-	-	-	539,361	-	-
26	Benefits expense	-	64,572	-	-	-	64,572	-	-
27	Uncollectibles expense	-	12,692	-	-	-	12,692	-	-
28	Regulatory commission expense	-	8,163	-	-	-	8,163	-	-
29	Property insurance	-	1,625	-	-	-	1,625	-	-
30	Injuries and damages for corp	-	5,274	-	-	-	5,274	-	-
31	Other O&M expense	-	708,065	-	-	-	708,065	-	-
32	Remove non-fuel rider costs and update fuel	-	(117,372)	-	-	-	(117,372)	-	-
33	Adjust for hydro station transfer	-	(1,560)	-	-	-	(1,560)	-	-
34	Adjust for inflation	-	4,594	-	-	-	4,594	-	-
35	Adjust for approved reg assets and liabilities	-	1,408	-	-	-	1,408	-	-
36	Adjust for severance	-	(47,462)	-	-	-	(47,462)	-	-
37	Adjust vegetation management, storm, & outside s	-	7,739	-	-	-	7,739	-	-
38	Adjust for credit card fees	-	8,976	-	-	-	8,976	-	-
39	Adjust for nuclear refueling outage costs	-	(1,946)	-	-	-	(1,946)	-	-
40	Adjust for merger related costs	-	(5,530)	-	-	-	(5,530)	-	-
41	Annualize retail revenues for current rates	-	(826)	-	-	-	(826)	-	-
42	Normalize for weather	-	(368)	-	-	-	(368)	-	-
43	Annualize revenues for customer growth	-	2,354	-	-	-	2,354	-	-
44	Amortize rate case costs	-	801	-	-	-	801	-	-
45	Adjust aviation expense	-	(2,304)	-	-	-	(2,304)	-	-
46	Adjust NC regulatory fee	-	(661)	-	-	-	(661)	-	-
47	Adjust other revenues	-	(36)	-	-	-	(36)	-	-
48	Other adjustments to reg fees and uncoll.	9	8/ (23,838)	-	-	1	8/ (23,837)	-	-
49	Total O&M expenses	9	2,250,394	-	-	1	2,250,394	-	-
50									
51	Depreciation expense	-	1,088,115	-	-	-	1,088,115	-	-
52	REPS rider NC amortization expense	-	-	-	-	-	-	-	-
53	Annual NOx proceeds	-	-	-	-	-	-	-	-
54	Other amortization expense	-	(29,734)	-	-	-	(29,734)	-	-
55	Remove non-fuel rider costs	-	-	-	-	-	-	-	-
56	Depreciation and amortization expense	-	1,058,381	-	-	-	1,058,381	-	-
57	Other taxes - NC property tax	-	99,296	-	-	-	99,296	-	-
58	Other taxes - NC franchise & deferred prop. tax	-	-	-	-	-	-	-	-
59	Other taxes - NC state unemployment tax	-	-	-	-	-	-	-	-
60	Other taxes - NC industrial comm - electric	-	-	-	-	-	-	-	-
61	Other taxes - SC property tax	-	81,208	-	-	-	81,208	-	-
62	Other taxes - SC property tax - license fee	-	-	-	-	-	-	-	-
63	Other taxes - NC franchise tax	-	-	-	-	-	-	-	-
64	Other taxes - SC state unemployment tax	-	-	-	-	-	-	-	-
65	Other taxes - federal payroll taxes	-	34,411	-	-	-	34,411	-	-
66	Other taxes - federal unemployment tax	-	-	-	-	-	-	-	-
67	Other taxes - federal highway use tax	-	-	-	-	-	-	-	-
68	Other taxes	-	(1,787)	-	-	-	(1,787)	-	-
69	Adjust payroll taxes	-	(1,023)	-	-	-	(1,023)	-	-
70	Current state and federal income tax	-	212,105	-	-	-	212,105	-	-
71	Interest on customer deposits	-	7,130	-	-	-	7,130	-	-
72	Current state and federal income tax	-	2,397	-	-	-	2,397	-	-
73	Deferred income taxes	-	143,193	-	-	-	143,193	-	-
74	Adjust income taxes	425	9/ 92,722	-	-	41	9/ 92,763	(5)	-
75	Total income taxes	425	238,312	-	-	41	238,354	(5)	-
76	Amortization of ITC	-	(2,836)	-	-	-	(2,836)	-	-
77	Total electric operating expenses	434	3,763,486	-	-	42	3,763,528	(5)	-
78	Interest expense	475	14/ 347,171	(111)	17/	56	20/ 347,227	(13)	22/
79	Income available for common equity	1,394	14/ 845,568	-	18/	136	20/ 845,704	-	23/
80	Net operating income for return	1,869	1,192,739	(111)	-	192	1,192,931	(13)	-
81	Total requirement	\$2,303	\$4,956,225	(\$111)	-	\$234	\$4,956,459	(\$18)	-
82	Cumulative change in working capital			\$30,664				\$30,671	
83	Rate base under present rates			16,910,528				16,910,528	
84	Rate base after rate increase			\$16,941,192				\$16,941,199	
85	Overall rate of return			7.04%				7.04%	
86	Target rate of return			7.04% 3/				7.04% 3/	

- 11/ Column (a) plus Column (c), unless footnoted otherwise.
12/ Line 84, Column (a) times 52.000% times 9.600%.
13/ Column (c) divided by 365 days times Column (b).
14/ Column (g) minus Column (d).
15/ Column (d) plus Column (f), unless footnoted otherwise.
16/ Sum of Line 77 and Line 80.
17/ Line 84, Column (e) times 48.000% times 4.270%.

- 18/ Line 84, Column (e) times 52.000% times 9.600%.
19/ Column (f) divided by 365 days times Column (b).
20/ Column (j) minus Column (g).
21/ Column (g) plus Column (i), unless footnoted otherwise.
22/ Line 84, Column (h) times 48.000% times 4.270%.
23/ Line 84, Column (h) times 52.000% times 9.600%.
24/ Column (i) divided by 365 days times Column (b).

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North Carolina Retail Operations
ADJUSTMENT TO REMOVE BELEWS CREEK DFO COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(f)

Line No.	Item	Amount
	Plant in service	
1	Adjustment to remove Belews Creek DFO plant - total system	\$0 1/
2	NC retail percentage	67.5280% 2/
3	Adjustment to plant in service - NC retail (L1 x L2)	<u>\$0</u>
	Depreciation expense	
4	Adjustment to plant in service - NC retail (L3)	\$0
5	Depreciation rate recommended by Public Staff	3.90% 3/
6	Adjustment to depreciation expense - NC retail (L4 x L5)	<u>\$0</u>
	Accumulated depreciation	
7	Adjustment to accumulated depreciation (-L6)	<u>\$0</u>

1/ Per Public Staff witness Metz.

2/ E-1, Item 45a, All Production Plant allocation factor.

3/ Per Public Staff witness McCullar.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO REMOVE CLEMSON CHP COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-1(g)

Line No.	Item	Amount
	Plant in service	
1	Adjustment to remove Clemson CHP production - total system	(\$19,100) 1/
2	NC retail percentage	67.4345% 2/
3	NC retail production plant (L1 x L2)	(12,880)
4	Adjustment to remove Clemson CHP transmission - total system	\$0 1/
5	NC retail percentage	52.6634% 4/
6	NC retail transmission plant (L4 x L5)	0
7	Adjustment to plant in service - NC retail (L13 + L6)	(\$12,880)
8	Company adjustment to plant in service - NC Retail	(12,880) 5/
9	Public Staff adjustment to plant in service - NC Retail (L7 - L8)	\$0
	Depreciation expense	
10	Adjustment to production plant in service - NC retail (L3)	(\$12,880)
11	Depreciation rate recommended by Public Staff	3.12% 3/
12	Adjustment to production depreciation expense (L8 x L9)	(402)
13	Adjustment to transmission plant in service - NC retail (L6)	\$0
14	Depreciation rate recommended by Public Staff	2.23% 3/
15	Adjustment to transmission depreciation expense (L11 x L12)	0
16	Adjustment to depreciation expense - NC retail (L10 + L13)	(\$402)
17	Company adjustment to depreciation expense - NC Retail	(413) 5/
18	Public Staff adjustment to depreciation expense - NC Retail (L16 - L17)	\$11
	Accumulated depreciation	
19	Adjustment to accumulated depreciation (-L14)	\$402
20	Company adjustment to accumulated depreciation	413 5/
21	Public Staff adjustment to accumulated depreciation (L19 - L20)	(\$11)

1/ Per Second Stipulation agreement.

2/ E-1, Item 45a, SCP, Factor 1 - Production allocation factor.

3/ Per Public Staff witness McCullar.

4/ E-1, Item 45a, SCP, All Transmission plant allocation factor.

5/ E-1, Item 10, NC - 3601(J), Lines 7 and 22, Total NC Retail Column..

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
SUMMARY OF REGULATORY ASSETS & LIABILITIES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 2-2

Line No.	Item	NC Retail Adjusted Per Company at SCP (a)	NC Retail Adjusted Per Company at SWPA (b)	Public Staff Adjustments (c)	NC Retail Adjusted Per Public Staff at SWPA (d)
1	Required Bank Balance	\$204	\$204	\$0	\$204
2	Pension Funding:			-	0
3	0182318 - Other Reg Assets - Gen Acct	390,253	386,621	-	386,621
4	0182801 - Pension Post Retire P Acctg - FAS87 NQ	3,105	3,076	-	3,076
5	0254689 - Reg Liability - NQ			-	0
6	Overstatement by Company of per book amount	1,005	1,005		1,005
7	Injuries and Damages:			-	0
8	0186060 - I and D Insurance Receivable	498,560	492,164	-	492,164
9	0186090 - I&D O/S Svcs Receivable	85	84	-	84
10	0254120 - I and D Regulatory Liability	(22,617)	(22,326)	-	(22,326)
11	Overstatement by Company of per book amount	1,529	1,529		1,529
12	Regulatory Assets & Liabilities - Tax:			-	0
13	0254036 - Reg Liab - Excess Fed EDIT	(1,666,439)	(1,666,439)	-	(1,666,439)
14	0254038 - Excess ADIT Grossup LT - NCR	(507,657)	(507,657)	-	(507,657)
15	0254150 - Reg Liab - NC Tax Rate Change	(223,049)	(223,049)	-	(223,049)
16	02541xx - Reg Liab - NC Tax Rate Change - EDIT Rider - NRB Offset	188,711	188,711	-	188,711
17	Other:			-	0
18	0182320 - Regulatory Asset - Inc Tax	315,947	\$313,777	-	313,777
19	0182323 - Rate Case Cost NC CUR	982	982	-	982
20	0182329 - Reg Asset Section 124 Asset	1,197	1,182	-	1,182
21	0182369 - REPS Incremental Costs	(2,741)	(2,741)	-	(2,741)
22	0182374 - Duke Generated REC Certificate	6,414	6,414	-	6,414
23	0182381 - Save a Watt Reg Asset	115,589	115,589	-	115,589
24	0182391 - NPL Extraordinary Repairs	19	19	-	19
25	0182410 - Interest Rate Swap Reg Asset	48,888	48,552	-	48,552
26	0182430 - Coal inventory Rider NC	92	92	-	92
27	0182433 - Rate Case Cost NC LT	6,315	6,315	-	6,315
28	0182438 - Billing System Deferral - Litg	656	656	-	656
29	0182483 - Rotable Fleet Spare Reg Asset	1,138	1,124	-	1,124
30	0182484 - NC Regulatory Fee	3,181	3,181	-	3,181
31	0182506 - Spend RA Amortization (NC&MW)	507,572	507,572	-	507,572
32	0182525 - Non-AMI Meter NBV	66,567	66,567	-	66,567
33	0182528 - CPRE Rider	446	446	-	446
34	0182551 - COR Settlement	57,145	57,145	-	57,145
35	0182560 - NC Solar Rebate Program Costs	3,441	3,441	-	3,441
36	0182563 - NC Solar Amort & Returns	62	62	-	62
37	0183000 - Prelim Survey and Investigation	6,413	6,332	-	6,332
38	0186041 - Def Dr - Gas Actg	497	491	-	491
39	0186181 - COR Settlement - NC			-	0
40	0186195 - Deferred PEC Rate Case Expense - NCR	1,661	1,661	-	1,661
41	0186316 - Coal Ash Spend - NC Retail			-	0
42	0186500 - Other Long Term Receivable	9,676	9,610	-	9,610
43	0186910 - Deferred Benefit Plan - As	8	8	-	8
44	0186998 - Fukushima Pooled Inventory Opt	3,058	3,019	-	3,019
45	0253036 - JEA Option Agreement	(5,058)	(4,993)	-	(4,993)
46	02531xx - LT Def Rev OL - NCR	(1,181)	(1,181)	-	(1,181)
47	0253820 - Schm Deferred Benefit Plan - NPL	(8)	(8)	-	(8)
48	0253890 - Schm Tax and S/L For Surplus Mat'ls	(443)	(440)	-	(440)
49	0253905 - Deferred Debt Return - Solar	(6,083)	(6,083)	-	(6,083)
50	0253910 - Pole Attach - Advance Billing	(41)	(40)	-	(40)
51	0253920 - Other Deferred Credits	(1,246)	(1,253)	-	(1,253)
52	0253990 - Deferred Prepaid Ef - Lighting - NCR	(13,346)	(13,346)	-	(13,346)
53	0254002 - Interest Rate Swap Reg Liability	(12,471)	(12,386)	-	(12,386)
54	0254021 - Nuclear Fuel Last Core Reserve	(52,717)	(52,717)	-	(52,717)
55	0254022 - M and S Inventory Reserve PEC RC	(42,236)	(42,236)	-	(42,236)
56	0254100 - Regulatory Liability - Inc Tax	(5,619)	(5,580)	-	(5,580)
57	0254250 - NC REC Liability - Retail	(63,386)	(63,386)	-	(63,386)
58	0254689 - Reg Liability - NQ	(25,573)	(25,335)	-	(25,335)
59	0254690 - OPEB regulatory liability		-	-	0
60	0820000 - Fabricated Equipment	674	674	-	674
61	Correction by Company of per book amount	(2,310)	(2,310)		(2,310)
62	Approved Reg Assets and Liabilities	(139,897)	(139,897)		(139,897)
63	Severance	43,370	42,966	\$0	42,966
64	Hydro Station Sale	19,494	19,244	2,109	21,353
65	Storm Deferral	172,870	172,870	\$0	172,870
66	Rate case	3,086	3,086	\$0	3,086
67	Deferred environmental costs	375,774	375,744	(302,772)	72,972
68	Deferred non-ARO environmental costs			\$0	0
69	Plant in Service	39,542	39,542		39,542
70	Non-fuel rider	(56,588)	(56,588)		(56,588)
71	Adjust COSS from SCP to SWPA			-	0
72	Correction/rounding				-
73	Total Regulatory Assets and Liabilities	<u>\$44,522</u>	<u>\$31,764</u>	<u>(\$300,663)</u>	<u>(\$268,899)</u>

1/ Based on review of Company Item 10 workpapers, and Company response to DR 165.

2/ Based on adjustments recommended by Public Staff.

3/ Column (a) plus Column (b).

4/ Company responses to DR165.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
NET OPERATING INCOME FOR RETURN
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3

Line No.	Item	Under Present Rates			After Public Staff Recommended Decrease	
		NC Retail Adjusted	Public Staff	After Public Staff	Rate	After Rate
		Per Company 1/ (a)	Adjustments 2/ (b)	Adjustments 3/ (c)	Decrease (d)	Decrease 8/ (e)
1	Electric operating revenues:					
2	Sales of electricity	<u>\$4,759,655</u>	<u>(\$122,275)</u>	<u>\$4,637,380</u>	<u>\$290,049 4/</u>	<u>\$4,927,429</u>
3	Other revenues	<u>35,051</u>	<u>-</u>	<u>35,051</u>		<u>35,051</u>
4	Electric operating revenues (L2 + L3)	<u>\$4,794,706</u>	<u>(122,275)</u>	<u>4,672,431</u>	<u>290,049 5/</u>	<u>4,962,480</u>
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation	1,161,536	(122,113)	1,039,423	-	1,039,423
8	Purchased power	23,412	-	23,412	-	23,412
9	Other operations and maintenance expenses	1,163,856	(1,111)	1,162,745	1,101 6/	1,163,846
10	Depreciation and amortization	1,191,710	(103,595)	1,088,115	-	1,088,115
11	General taxes	212,156	(52)	212,104	-	212,104
12	Interest on customer deposits	7,130	-	7,130	-	7,130
13	Net income taxes	175,329	25,437	200,766	67,323 7/	268,089
14	Amortization of protected EDIT, net of tax	(29,734)	\$0	(29,734)		(29,734)
15	Amortization of investment tax credit	<u>(2,836)</u>	<u>-</u>	<u>(2,836)</u>	<u>-</u>	<u>(2,836)</u>
16	Total electric operating expenses (Sum of L7 thru L15)	<u>3,902,560</u>	<u>(201,434)</u>	<u>3,701,125</u>	<u>68,424</u>	<u>3,769,549</u>
17	Net operating income for return (L4 minus L16)	<u>\$892,146</u>	<u>\$79,159</u>	<u>\$971,306</u>	<u>\$221,625</u>	<u>\$1,192,931</u>

1/ Based on McManeus Second Supplemental Exhibit 1.

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1, Column (dd).

3/ Column (a) plus Column (b).

4/ Line 4 minus Line 3.

5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 5, Line 5, Column (c).

6/ Line 4 times (1 minus retention factor after uncollectibles and regulatory fee of 0.9962055 from Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 10.)

7/ Line 4 minus Line 9 minus change in interest expense from Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 5, Line 3, Column (a), times composite income tax rate of 23.3503%.

8/ Column (c) plus Column (d).

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 1 of 6

Line No.	Item	Adjust Weather Normalization (a)	Update Plant to 5/31/2020 (b)	Update Customer Growth & Usage to 5/31/2020 (c)	Adjust Distribution Vegetation Management (d)	Remove EDIT Refund for Treatment as a Rider (e)
1	Electric operating revenues:					
2	Sales of electricity	\$2,691 ^{1/}	\$0	(\$581) ^{4/}	\$0	\$0
3	Other revenues		-	-	-	-
4	Electric operating revenues (L2 + L3)	<u>2,691</u>	<u>-</u>	<u>(581)</u>	<u>-</u>	<u>-</u>
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation	\$2,695 ^{1/}	-	(\$584) ^{4/}	-	-
8	Purchased power		-	-	-	-
9	Other operations and maintenance expenses	10	-	(73) ^{4/}	\$0 ^{5/}	-
10	Depreciation and amortization		(2,795) ^{2/}	-	-	-
11	General taxes		(52) ^{2/}	-	-	-
12	Interest on customer deposits		-	-	-	-
13	Net income taxes	(3) ^{3/}	665 ^{3/}	18 ^{3/}	- ^{3/}	- ^{3/}
14	Amortization of protected EDIT, net of tax		-	-	-	-
15	Amortization of investment tax credit		-	-	-	-
16	Total electric operating expenses (Sum of L7 thru L15)	<u>2,702</u>	<u>(2,182)</u>	<u>(639)</u>	<u>0</u>	<u>-</u>
17	Net operating income for return (L4 minus L16)	<u>(11)</u>	<u>2,182</u>	<u>58</u>	<u>(0)</u>	<u>-</u>
18	Calculated revenue requirement impact	^{30/} <u>\$15</u>	<u>(\$2,858)</u>	<u>(\$76)</u>	<u>\$0</u>	<u>\$0</u>

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(a), Line 6.

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(b), Lines 4 and 12.

3/ Line 4 minus Sum of Line 7 through 12 times composite income tax rate of 23.3503%.

4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c), Lines 3, 6, and 18.

5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(d), Line 16.

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 2 of 6

Line No.	Item	Adjust for Hydro Station Sales (f)	Adjust Depreciation Rates (g)	Adjust Incentives (h)	Adjust Executive Compensation (i)	Adjust Aviation Expenses (j)
1	Electric operating revenues:					
2	Sales of electricity	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-
4	Electric operating revenues (L2 + L3)	-	-	-	-	-
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation	-	-	\$0	-	-
8	Purchased power	-	-	-	-	-
9	Other operations and maintenance expenses	- 7/	-	\$0 9/	0 10/	\$0 11/
10	Depreciation and amortization	(2,109) 7/	(33,459) 8/	-	-	-
11	General taxes	- 7/	-	-	-	- 11/
12	Interest on customer deposits	-	-	-	-	-
13	Net income taxes	492 3/	7,813 3/	- 3/	- 3/	- 3/
14	Amortization of protected EDIT, net of tax	-	-	-	-	-
15	Amortization of investment tax credit	-	-	-	-	-
16	Total electric operating expenses (Sum of L7 thru L15)	(1,617)	(25,646)	-	0	0
17	Net operating income for return (L4 minus L16)	1,617	25,646	-	(0)	(0)
18	Calculated revenue requirement impact	30/ (\$2,118)	(\$33,586)	\$0	\$0	\$0

7/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(e), Lines 3, 8, and 11.

8/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(f), Line 9.

9/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(g), Line 17.

10/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(h), Line 13.

11/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(i), Lines 9, 16, and 21.

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 3 of 6

Line No.	Item	Adjust Deferred Environmental Costs (k)	Adjust Outside Services (l)	Adjust Credit Card Fees (m)	Adjust Storm Deferral (n)	Adjust Sponsorships & Donations (o)	Adjust Lobbying Expense (p)
1	Electric operating revenues:						
2	Sales of electricity	\$0	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-	-
4	Electric operating revenues (L2 + L3)	-	-	-	-	-	-
5	Electric operating expenses:						
6	Operations and maintenance:						
7	Fuel used in electric generation	-	-	-	-	-	-
8	Purchased power	-	-	-	-	-	-
9	Other operations and maintenance expenses	-	- 13/	\$0 14/	-	\$0 16/	\$0 17/
10	Depreciation and amortization	(65,243) 12/	-	-	\$0 15/	-	-
11	General taxes	-	-	-	-	-	-
12	Interest on customer deposits	-	-	-	-	-	-
13	Net income taxes	15,234 30/	- 3/	- 3/	- 3/	- 3/	- 3/
14	Amortization of protected EDIT, net of tax	-	-	-	-	-	-
15	Amortization of investment tax credit	-	-	-	-	-	-
16	Total electric operating expenses (Sum of L7 thru L15)	(50,009)	-	0	-	-	-
17	Net operating income for return (L4 minus L16)	50,009	-	(0)	-	-	-
18	Calculated revenue requirement impact	30/ (\$65,492)	\$0	\$0	\$0	\$0	\$0

12/ Based on the recommendation of Public Staff witness Maness.

13/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(j), Line 7.

14/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(k) Line 7.

15/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(l), Line 4.

16/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(m), Line 10.

17/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(n), Line 8.

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
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Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 4 of 6

Line No.	Item	Adjust Board of Directors Expense (q)	Adjust Advertising Expense (r)	Adjust Salaries & Wages (s)	Adjust Storm Normalization (t)	Adjust O&M related to Retired Hydro (u)
1	Electric operating revenues:					
2	Sales of electricity	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-
4	Electric operating revenues (L2 + L3)	-	-	-	-	-
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation	-	-	-	-	-
8	Purchased power	-	-	-	-	-
9	Other operations and maintenance expenses	\$0 18/	\$0 19/	\$0 20/	\$0 21/	(\$0) 22/
10	Depreciation and amortization	-	-	-	-	-
11	General taxes	-	-	\$0 20/	-	-
12	Interest on customer deposits	-	-	-	-	-
13	Net income taxes	- 3/	- 3/	- 3/	- 3/	- 3/
14	Amortization of protected EDIT, net of tax	-	-	-	-	-
15	Amortization of investment tax credit	-	-	-	-	-
16	Total electric operating expenses (Sum of L7 thru L15)	-	-	-	0	(0)
17	Net operating income for return (L4 minus L16)	-	-	-	(0)	0
18	Calculated revenue requirement impact	30/ \$0	\$0	\$0	\$0	\$0

18/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(o), Line 14.

19/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(p), Line 8.

20/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch -1(q), Lines 16 and 21.

21/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(r), Line 13.

22/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(s), Line 5.

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 5 of 6

Line No.	Item	Adjust Rate Case Expense (v)	Adjust Severance (w)	Adjustment to Inflation Adjustment (x)	Include Flowback of Protected EDIT due to Tax Cuts & Jobs Act (y)	Adjustment to Update Fuel Factor (z)
1	Electric operating revenues:					
2	Sales of electricity	\$0	\$0	\$0	\$0	(\$124,385)
3	Other revenues			-		
4	Electric operating revenues (L2 + L3)			-	-	(124,385)
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation			-		(\$124,224) 27/
8	Purchased power			-		
9	Other operations and maintenance expenses	\$0 23/	\$0 24/	\$0 25/		(\$161) 27/
10	Depreciation and amortization			-		\$0
11	General taxes			-		
12	Interest on customer deposits			-		
13	Net income taxes	-	-	- 3/		- 3/
14	Amortization of protected EDIT, net of tax				\$0 26/	
15	Amortization of investment tax credit			-		
16	Total electric operating expenses (Sum of L7 thru L15)	-	0	-	-	(124,385)
17	Net operating income for return (L4 minus L16)	-	(0)	-	-	0
18	Calculated revenue requirement impact	30/ \$0	\$0	\$0	\$0	\$0

23/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(t), Line 5.

24/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(u), Line 7.

25/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(w) Line 15.

26/ Boswell Second Supplemental and Stipulation Exhibit 1, Sch 3-1(w), Line 5.

27/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedyle 3-1(x).

DUKE ENERGY CAROLINAS, LLC
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North Carolina Retail Operations
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INCOME ADJUSTMENTS
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(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1
Page 6 of 6

Line No.	Item	Adjust Deferred Non-ARO Enviromental Costs (aa)	Remove Clemson CHP (bb)	Adjust Benefits (cc)	32/ Interest Synchronization Adjustment (dd)	Total NOI Adjustments 28/ (ee)
1	Electric operating revenues:					
2	Sales of electricity	\$0	\$0	\$0	\$0	(\$122,275)
3	Other revenues				-	-
4	Electric operating revenues (L2 + L3)			\$0	-	(122,275)
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation				-	(\$122,113)
8	Purchased power				-	-
9	Other operations and maintenance expenses			(889)	-	(1,111)
10	Depreciation and amortization	\$0 12/	\$11 31/		-	(103,595)
11	General taxes				-	(52)
12	Interest on customer deposits				-	-
13	Net income taxes	- 3/	(3) 3/	208 3/	1,013 28/	25,437
14	Amortization of protected EDIT, net of tax				-	-
15	Amortization of investment tax credit				-	-
16	Total electric operating expenses (Sum of L7 thru L15)	-	8	(681)	1,013	(201,434)
17	Net operating income for return (L4 minus L16)	-	(8)	681	(1,013)	79,159
18	Calculated revenue requirement impact	30/ \$0	\$11	(\$892)	\$1,327	(\$103,667)

28/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(y), Line 8.

29/ Sum of Columns (a) through (bb).

30/ Negative of Line 16 divided by expense retention factor 0.7635890 from
Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 14.

31/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(g), Line 6.

32/ Per Second Stipulation.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF ADJUSTMENT TO TEST
YEAR REVENUES AND FUEL RELATED
EXPENSES FOR WEATHER
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(a)

Line No.	Item	Revenues			Fuel & Fuel Related Expenses	
		Public Staff NC KWH Weather Adjustment 1/	Cents per KWH 2/	Public Staff Adjustment 3/	Fuel Costs in Cents per KWH 4/	Public Staff Adjustment 5/
		(a)	(b)	(c)	(d)	(e)
1	Total NC Residential	(521,492,469)	8.2521	(\$43,034)	1.6027	(\$8,358)
2	Total NC General Service	(728,915,472)	6.4987	(47,370)	1.7583	(12,817)
3	Total NC Industrial	<u>(69,374,972)</u>	5.3532	<u>(3,714)</u>	1.6652	<u>(1,155)</u>
4	Total NC Retail (L1 + L2 + L3)	<u><u>(1,319,782,913)</u></u>		(\$94,118)		(\$22,330)
5	Adjustment to revenues per Company			(\$96,809) 6/		(\$25,025) 7/
6	Public Staff adjustment to revenues (L4 - L5)			<u><u>\$2,691</u></u>		<u><u>\$2,695</u></u>

- 1/ Amounts per Public Staff witness Sailor.
2/ E-1, Item No. 10, NC-0301(F), Line 6, updated for new fuel factor.
3/ (Column (a) times Column (b)) divided by 100,000.
4/ E-1, Item No. 10, NC-0301(F), Line 10, updated for new fuel factor.
5/ (Column (a) times Column (d)) divided by 100,000.
6/ E-1, Item No. 10, NC-0301(F), Line 8.
7/ E-1, Item No. 10, NC-0301(F), Line 11.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO DEPRECIATION EXPENSE AND
PROPERTY TAXES FOR PLANT UPDATE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(b)

Line No.	Item	Amount
1	<u>Depreciation expense</u>	
2	Depreciation expense on increase in plant per Public Staff	\$72,260 1/
3	Company adjustment	75,055 2/
4	Public Staff adjustment to depreciation expense for update of plant (L2 - L3)	<u>(\$2,795)</u>
5	<u>General taxes</u>	
6	Update to plant per Public Staff	2,201,494 3/
7	Less: adjustment to intangible plant	53,649 4/
8	Adjustment to plant excluding intangible plant (L6 - L7)	2,147,845
9	Property tax rate per \$1000	0.0052256 5/
10	Impact to property taxes of Public Staff plant update (L8 x L9)	11,224
11	Company adjustment	11,276 6/
12	Public Staff adjustment to property taxes (L10 - L11)	<u>(\$52)</u>

- 1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(b)(1), Line 12, Column (e).
2/ E-1, Item 10, NC-1001(H), Line 64.
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 13, Column (e).
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 9, Column (e).
5/ E-1, Item 10, NC-1001(H), Line 69.
6/ E-1, Item 10, NC-1001(H), Line 76 minus Line 72.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF DEPRECIATION
EXPENSE ON PLANT UPDATE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(b)(1)

Line No.	Item	Increase in Plant in Service (a)	1/ Depreciation Rate (b)	Increase in Depreciation (c)	3/ NC Retail Percentage (d)	5/ NC Retail Amount (e)	6/
1	Steam plant	\$618,320	3.90%	\$24,114			
2	Hydro plant	246,162	1.99%	4,899			
3	Other production plant	145,314	3.12%	4,534			
4	Nuclear plant	303,398	3.60%	10,922			
5	Total production plant	1,313,194		44,469	67.4345%	\$29,987	
6	Transmission plant	524,695	2.23%	11,701	52.6634%	6,162	
7	Distribution plant	1,237,022	2.17%	26,843	73.9558%	19,852	
8	General plant	171,750	5.27%	9,051	69.0221%	6,247	
9	Intangible plant	77,728	various	14,505	69.0221%	10,012	
10	Total	<u>\$3,324,389</u>		<u>\$106,569</u>		<u>72,260</u>	
11	Less: depreciation on REPS additions					-	7/
12	Depreciation expense per Public Staff					<u>\$72,260</u>	

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(1), Column (c).

2/ Based on recommendation of Public Staff witness McCullar, unless footnoted otherwise.

3/ Column (a) times Column (b).

4/ Based on information provided by the Company.

5/ E-1, Item 45a, DEC COS NC SCP.

6/ Column (c) times Column (d).

7/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 12 times other production depreciation rate from Line 3, Column (b).

8/ Includes the removal of AMR retirements per NC-1000(H).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO UPDATE REVENUES TO MAY
31, 2020
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(c)

Line No.	Item	Amount
	<u>Revenues</u>	
1	Update revenues for customer growth	\$81,580 ^{1/}
2	Update revenues for usage	(37,173) ^{2/}
3	Adjust revenues to remove part of COVID impact on update	(14,521) ^{8/}
4	Adjust revenues for update (L1 + L2 + L3)	<u>\$29,886</u>
5	Company adjustment to revenues for update	30,467 ^{9/}
6	Public Staff adjustment to revenues for update (L5 - L6)	<u>(\$581)</u>
	<u>Fuel and Fuel Related Expense</u>	
7	Adjust fuel and fuel-related expense for customer growth update	\$15,649 ^{1/}
8	Adjust fuel and fuel-related expense for usage update	(5,977) ^{2/}
9	Adjust fuel to remove part of COVID impact on update	(5,311) ^{8/}
10	Adjust fuel expense for change in kwh (L7 + L8 + L9)	<u>\$4,361</u>
11	Company adjustment to revenues for update	4,945 ^{9/}
12	Public Staff adjustment to revenues for update (L10 - L11)	<u>(\$584)</u>
	<u>Other O&M Expense</u>	
13	Public Staff update adjustment to MHW sales for growth	1,073,505 ^{1/}
14	Public Staff update adjustment to MHW sales for usage	(794,703) ^{2/}
15	Public Staff adjustment to MWH sales (L13 + L14)	278,803
16	Energy-related non-fuel variable O&M expense per kWh in dollars	2,40636 ^{3/}
17	Adjustment to energy-related non-fuel variable O&M expense (L15 x L16 / 1000)	671
18	Company adjustment to revenues for update	686 ^{10/}
19	Public Staff adjustment to revenues for update (L17 - L18)	<u>(\$15)</u>
20	Public Staff change in bills	723,266 ^{4/}
21	Annual customer-related variable O&M expense per bill in dollars	2,06790 ^{5/}
22	Adjustment to customer-related variable O&M expense (L20 x L21 / 1,000)	1,496
23	Company adjustment to revenues for update	1,552 ^{10/}
24	Public Staff adjustment to revenues for update (L22 - L23)	<u>(\$56)</u>
25	Adjust variable non-fuel O&M expense (L19 + L24)	(\$71)
26	Adjust uncollectibles for increase in revenues	(1) ^{6/}
27	Adjust regulatory fee for increase in revenues, net of uncollectibles	(1) ^{7/}
28	Total adjustment to other O&M expenses (L25 + L26 + L27)	<u>(\$73)</u>

- 1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1 (c)(3), Line 24.
2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1 (c)(3), Line 24.
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1 (c)(3), Line 24.
4/ Based on the recommendation of Public Staff witness Saillor.
5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c)(4), Line 20.
6/ Line 3 times uncollectibles rate of 0.25010%.
7/ (Line 3 minus Line 16) times regulatory fee rate of 0.12967%.
8/ E-1, NC-0400(J), Lines 5 and 13, updated for new fuel factors.
9/ E-1, NC-0400(J), Lines 6 and 14.
10/ E-1, Item 10, NC-0405(J), Lines 8 and 17.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF ADJUSTMENT TO
REVENUES AND FUEL RELATED
EXPENSES TO UPDATE CUSTOMER
GROWTH TO NOVEMBER 30, 2017
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(c)(1)

Line No.	Item	Revenues			Fuel & Fuel Related Expenses	
		Public Staff Growth NC KWH Adjustment ^{1/}	Cents per KWH ^{2/}	Public Staff Adjustment ^{3/}	Fuel Costs in Cents per KWH ^{4/}	Public Staff Adjustment ^{5/}
		(a)	(b)	(c)	(d)	(e)
1	Total NC Residential	669,161,324	8.25	\$55,220	1.6027	\$10,725
2	BFC Revenues			\$8,571		
3	Total NC Residential	669,161,324		\$63,791		\$10,725
4	General Service Small and Large	137,235,271	6.77	9,287	1.7583	2,413
5	T2 Flood Lighting / Outdoor Lighting	3,326,514	17.16	571	1.7583	58
6	Miscellaneous	139,189	15.48	22	1.7583	2
7	Total NC General (L4 + L5 + L6)	140,700,974		9,880		2,473
8	T		17.16	0		0
9	TS	121,672	16.73	20	1.7583	2
10	Total NC Street Lighting (L8 + L9)	121,672		20		2
11	Total NC Industrial	147,082,334	5.36	7,889	1.6652	2,449
12	Total NC Retail (L3 + L7 + L10 + L11)	957,066,304		\$81,580		\$15,649

- 1/ Amounts per Public Staff witness Sailior.
2/ E-1, Item No. 10, NC-0402(J), Column (b), updated for new fuel factors.
3/ (Column (a) times Column (b)) divided by 100,000.
4/ Docket No. E-7, Sub 1228.
5/ (Column (a) times Column (d)) divided by 100,000.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF ADJUSTMENT TO REVENUES
AND FUEL RELATED EXPENSES TO UPDATE
USAGE TO NOVEMBER 30, 2019
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(c)(2)

Line No.	Item	Revenues			Fuel & Fuel Related Expenses	
		Public Staff NC KWH Usage Adjustment ^{1/}	Cents per KWH ^{2/}	Public Staff Adjustment ^{3/}	Fuel Costs in Cents per KWH ^{4/}	Public Staff Adjustment ^{5/}
		(a)	(b)	(c)	(d)	(e)
1	Total NC Residential	<u>(479,868,101)</u>	8.25	<u>(\$39,599)</u>	1.6027	<u>(\$7,691)</u>
2	General Service Small and Large (OPT only)	183,643,203	5.55	\$10,201	1.7583	\$3,229
3	General Service Small and Large (non-OPT only)	<u>(139,363,851)</u>	7.81	<u>(\$10,891)</u>	1.7583	<u>(\$2,450)</u>
4	T2 Flood Lighting / Outdoor Lighting	-				
5	Miscellaneous	<u>(934,567)</u>	5.75	<u>(54)</u>	1.7583	<u>(16)</u>
6	Total NC General (L2 + L3 + L4 + L5)	<u>43,344,785</u>		<u>(\$744)</u>		<u>\$763</u>
7	T					
8	TS	<u>(518,384)</u>	12.01	<u>(\$62)</u>	1.7583	<u>(\$9)</u>
9	Total NC Street Lighting (L7 + L8)	<u>(518,384)</u>		<u>(\$62)</u>		<u>(\$9)</u>
10	Total NC Industrial (OPT only)	39,988,349	5.05	\$2,018	1.6652	\$666
11	Total NC Industrial (non-OPT only)	<u>17,655,788</u>	6.87	<u>1,214</u>	1.6652	<u>294</u>
12	Total NC Industrial (L10 + L11)	<u>57,644,137</u>		<u>\$3,232</u>		<u>\$960</u>
13	Total NC Retail	<u>(379,397,563)</u>		<u>(\$37,173)</u>		<u>(\$5,977)</u>

- 1/ Amounts per Public Staff witness Saillor.
2/ E-1, Item 10, NC-0404(J), updated for new fuel factors.
3/ (Column (a) times Column (b)) divided by 100,000.
4/ Docket No. E-7, Sub 1228.
5/ (Column (a) times Column (d)) divided by 100,000.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(c)(3)

CALCULATION OF VARIABLE NON-FUEL O&M EXPENSE PER KWH AND PER BILL
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	NC Retail Amount (a)	Sub-Calculations (b)
1	2018 per books energy-related production O&M expense excluding fuel and purchased power	\$218,839 ^{1/}	
2	Non-fuel rider energy-related costs removed from base rates	<u>(94,732) ^{2/}</u>	
3	Total non-fuel, non-payroll energy related production O&M expense (L1 - L2)	<u>124,107</u>	
4	Total O&M expense, excluding A&G expense	2,143,115 ^{3/}	
5	Less: fuel expense	<u>1,085,107 ^{4/}</u>	
6	Total non-fuel O&M expense, excluding A&G expense (L4 - L5)	<u>1,058,008</u>	
7	Ratio (L3 / L6)	<u>0.117303</u>	
8	Total per books A&G expense	416,565 ^{5/}	
9	Salaries and wages in Line 10 - system amount		254,543 ^{6/}
10	Per books employee pensions and benefits - system amount		<u>102,240 ^{7/}</u>
11	Subtotal (L9 + L10)		356,783
12	NC retail allocation factor		<u>67.7195% ^{8/}</u>
13	NC retail per books salaries, wages, pensions, and employee benefits (L11 x L12)		241,611
14	Aviation expense removed elsewhere		1,986 ^{9/}
15	NC regulatory fee adjusted elsewhere		6,986 ^{10/}
16	Outside services removed elsewhere		0 ^{11/}
17	Sponsorships, donations, and adversting removed elsewhere		322 ^{12/}
18	Hydro Station Sales removed elsewhere		1,560 ^{14/}
19	Board of Directors expense removed elsewhere		1,910 ^{13/}
20	Total of A&G items adjusted elsewhere (Sum of Lines 13 thru 19)	<u>254,375</u>	<u>\$254,375</u>
21	Total A&G expense not adjusted elsewhere (L8 - L20)	<u>162,190</u>	
22	Portion of A&G not adjusted elsewhere related to non-fuel non-payroll energy-related production O&M expense (L7 x L21)	<u>19,025</u>	
23	Total non-fuel, non-payroll energy-related production O&M expense plus related non-payroll A&G expense (L3 + L22)	143,132	
24	Per books NC retail MWH sales	<u>59,480,703 ^{15/}</u>	
25	Cost per MWH (\$) (L22 x 1,000 / L24)	<u>\$2.40636</u>	

- 1/ E-1, Item No. 45A, Line 157.
2/ E-1, Item No. 10, NC-0601, Other O&M expense excluding Line 19, Total NC Retail Column.
3/ E-1, Item No. 45A, NC Retail Column, O&M expenses.
4/ E-1, Item No. 10, NC-0201, Total NC Retail Column, Sum of Lines 2, 4, and 6.
5/ E-1, Item No. 45A, A&G expenses.
6/ McManeus Exhibit 1, NC-1306, Line 27.
7/ McManeus Exhibit 1, NC-1309, Line 7.
8/ E-1, Item No. 45A, Page 13, Factor 59 - Wages & Salaries Excluding A&G.
9/ McManeus 1, NC-1701, Line 2 plus Schedule 3-1(m), Line 9 plus Line 21.
10/ McManeus Exhibit 1, NC-3101, Line 7.
11/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(j), Line 5.
12/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(m), Line 6 and Schedule 3-1(p), Line 3.
13/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(o), Line 12.
14/ E-1, Item No. 10, NC-3201, Line 4.
15/ E-1, Item No. 10, NC-0201, Line 10 divided by 1,000.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF BILL-RELATED EXPENSES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(c)(4)

Line No.	Item	NC Retail Amount (a)	Sub-Calculations (b)
1	2018 per books bill-related O&M expenses:		
2	Account 586 - Meters (operation)	\$8,272 ^{1/}	
3	Account 597 - Meters (maintenance)	1,788 ^{1/}	
4	Account 587 - Customer - installations	8,030 ^{1/}	
5	Accounts 901-905 - Customer accounts	65,597 ^{2/}	
6	Accounts 908-910 - Customer service and information	14,702 ^{2/}	
7	Total 2018 per books bill-related expenses (Sum of Lines 2 thru 6)	98,389	
8	Salaries and wages included in Line 7 - system amount		52,811 ^{3/}
9	NC retail allocation factor		67.7195% ^{4/}
10	NC retail salaries and wages included in Line 7	35,763	\$35,763
11	Uncollectibles expense adjusted elsewhere	12,692 ^{5/}	
12	Total non-payroll bill-related O&M expenses not adjusted elsewhere (L7 - L10 - L11)	49,934	
13	Total O&M expense, excluding A&G expense	2,143,115 ^{6/}	
14	Total non-fuel O&M expense, excluding A&G expense	1,058,008 ^{7/}	
15	Ratio (L12 / L14)	0.047196	
16	Total A&G expense not adjusted elsewhere	162,190 ^{8/}	
17	Portion of A&G not adjusted elsewhere related to non-payroll bill-related O&M expense (L15 x L16)	7,655	
18	Total non-payroll bill-related O&M expenses plus related non-payroll A&G expense (L12 + L17)	57,589	
19	Per books NC retail 2018 bills	27,849,043 ^{3/}	
20	Cost per bill (\$) (L18 x 1,000 / L19)	\$2.06790	

- 1/ E-1, Item No. 45A, Lines 198 and 221.
2/ E-1, Item No. 45A, Lines 240 and 246.
3/ Based on information provided by Company.
4/ Average NC retail allocation factor for the accounts listed on Lines 2 thru 6 per NCUC Form E-1, Item 45A.
5/ E-1, Item No. 45A, Account 904 - Uncollectible Accounts, Line 238, NC Retail amount.
6/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c)(3), Line 4.
7/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c)(3), Line 6.
8/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c)(3), Line 21.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(d)

ADJUSTMENT TO DISTRIBUTION VEGETATION MANAGEMENT

For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Total Miles (a)	Target Cycle (In Years) (b)	Test Year Amount (c)	Adjusted Amount (d)
1	Number of trim miles per year:				
2	Urban Miles	2,171 ^{1/}	5 ^{2/}		434 ^{3/}
3	Mountain Miles	7,847 ^{1/}	7 ^{2/}		1,121 ^{3/}
4	Other Miles	41,686 ^{1/}	9 ^{2/}		4,632 ^{3/}
5	Total number of trim miles (L2 + L3 + L4)	<u>51,704</u>		5,559	6,187
6	Cost per Mile			<u>9,041 ^{4/}</u>	<u>9,312 ^{5/}</u>
7	Production \$ (Sum L5 x L6)			\$ 50,257,472	\$57,614,767
8	Demand \$			2,159,025 ^{6/}	2,222,716 ^{7/}
9	Herbicide \$			3,343,623 ^{6/}	3,364,688 ^{7/}
10	Contract Inspectors \$			<u>696,536 ^{6/}</u>	<u>710,467 ^{7/}</u>
11	Program Target \$ (Sum L7 through L10)			\$ 56,456,657	\$63,912,638
12	Adjusted VM program costs (Line 11 Col (e) less Col (d))				\$7,455,981
13	NC Retail allocation				<u>73.6369% ^{8/}</u>
14	Total distribution vegetation management adjusment (L12 x L13)				5,490
15	Adjusted distribution VM per Company				<u>5,490 ^{9/}</u>
16	Public Staff adjustment to VM (L14 - L15)				<u>\$0</u>

1/ E-1, Item 10, NC-2702, Column (a).

2/ E-1, Item 10, NC-2702, Column (b).

3/ Column (a) divided by Column (b).

4/ Per updated Company response to DR22-5.

5/ Line 6, Column (c) increased by 3% as per Company adjustment.

6/ E-1, Item 10, NC-2702, Column (d).

7/ E-1, Item 10, NC-2702, Column (e).

8/ Item 45a, All - Dist Plt OH - DEC allocation factor.

9/ E-1, Item 10, NC-2701, Line 2, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO HYDRO STATION SALES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(e)

Line No.	Item	Amount
1	Impact to O&M NC Retail per Company	(\$1,560) ^{1/}
2	Impact to O&M NC Retail per Public Staff	<u>(1,560) ^{2/}</u>
3	Change to O&M (L2 - L1)	<u>0</u>
4	Remove depreciation related to Hydro Sales per Company	(1,440) ^{1/}
5	Amortize Loss on Sale per Company	3,249 ^{1/}
6	Remove depreciation related to Hydro Sales per Public Staff	<u>(1,440) ^{2/}</u>
7	Amortize Loss on Sale per Public Staff	<u>1,140 ^{3/}</u>
8	Change to depreciation and amortization (L6 + L7 - L4 - L5)	<u>(2,109)</u>
9	Remove property taxes per Company	(193) ^{1/}
10	Remove property taxes per Public Staff	<u>(193) ^{2/}</u>
11	Change to remove property taxes (L10 - L9)	<u>-</u>
12	Total change to impact of O&M (L3 + L8 + L11)	<u>(\$2,109)</u>
22	Regulatory Asset loss on sale per Company	19,494 ^{1/}
23	Regulatory Asset loss on sale per Public Staff	<u>21,603 ^{3/}</u>
24	Change to regulatory asset loss on sale (L23 - L22)	<u>2,109</u>
25	Impact to ADIT per Company	(\$4,552) ^{1/}
26	Impact to ADIT per Public Staff	<u>(\$5,044) ^{2/}</u>
27	Change in impact to ADIT (L26 - L27)	<u>(\$492)</u>
28	Total change to rate base (L15 + L18 + L21 + L24 + L27)	<u>\$1,617</u>

1/ E-1, Item 10, NC-3201, Total NC Retail Column.

2/ E-1, Item 10, NC-3201(E).

3/ Updated to reflect Company updates through 1/31/20 and amortization change to 20 years.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT FOR CHANGE IN DEPRECIATION RATES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(f)

Line No.	Item	Total System (a)	1/ Percentage (b)	NC Retail Amount (c)
	<u>Change in depreciation and amortization per Public Staff</u>			
1	Production	\$63,243	67.4345%	\$42,648 3/
2	Transmission	6,760	52.6634%	3,560 3/
3	Distribution	(3,660)	73.9530%	(2,707) 3/
4	General	(2,070)	69.0221%	(1,429) 3/
5	General amortization	(3,748)	69.0221%	(2,587) 3/
6	Adjust to depr and amort for costs recovered through riders	(43)	67.4345%	(29) 3/
7	Public Staff adjustment to depreciation and amortization expense (Sum of L1 thru L6)	<u>\$60,482</u>		39,456
8	Adjustment per Company			<u>72,915 4/</u>
9	Adjustment to depreciation and amortization expense (L7 - L8)			<u>(\$33,459)</u>
10	Adjustment to accumulated depreciation (-L9)			<u>\$33,459</u>

1/ Based on recommendation of Public Staff witness McCullar, adjusted for Cliffside and Allen.

2/ E-1, Item 45a, SCP allocation factors.

3/ Column (a) times Column (b).

4/ E-1, Item 10, NC-2601(E), Line 12, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO INCENTIVES
For the Test Year Ended December 31, 2016
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(g)

Line No.	Item	Amount
Short Term Incentive Plan (STIP)		
1	Total Company STIP pay accrued expense associated with earnings per share (EPS)	\$13,462 1/
2	Total Company STIP accrual	350,545 1/
3	Percentage of STIP related to EPS (L1 / L2)	3.84%
4	STIP at target level associated with O&M expense per Company, net of Joint Owners	89,320 2/
5	Adjustment to remove STIP related to EPS outcomes - total system (-L3 x L4)	(3,430)
6	NC retail percentage	67.7195% 3/
7	Adjustment to remove STIP related to EPS outcomes - NC retail (L5 x L6)	(2,323)
8	Executive STIP already removed in executive compensation adjustment	18 4/
9	Company adjustment to STIP	(2,305)
10	Adjustment to STIP (L9 - L8 - L7)	<u>\$0</u>
Long Term Incentive Plan (LTIP)		
11	LTIP Performance Shares at target, net Joint Owners	\$9,762 1/
12	Percentage associated with EPS and TSR	100.00%
13	Adjustment to remove LTIP associated with EPS and TSR - total system (-L11 x L12)	(9,762)
14	NC retail percentage	67.7195% 3/
15	Adjustment to remove LTIP associated with EPS and TSR - NC retail (L13 x L14)	(6,611)
16	Executive LTIP already removed in executive compensation adjustment	956 4/
17	Company adjustment to LTIP	(5,655)
18	Adjustment to LTIP (L17 - L16 - L15)	<u>\$0</u>
19	Total adjustment to incentive pay (L10 + L17)	<u>\$0</u>

1/ Provided by Company.

2/ E-1, Item 10, NC-1310(E), Line 13, net of Catawba Joint Owners.

3/ E-1, Item 45a, All Labor Factor.

4/ Based on executive compensation adjustment.

5/ E-1, Item 10, NC-1310-3, Line 13, Column (b), net of Catawba Joint Owners.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO EXECUTIVE COMPENSATION
For the Test Year Ended December 31, 2016
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(h)

Line No.	Item	Amount
1	Executive compensation for top 5 executives per Company	\$11,044 ^{1/}
2	Inclusion of executive benefits in adjustment	738 ^{2/}
3	Executive compensation subject to exclusion adjustment per Public Staff (L1 + L2)	11,782
4	Catawba reimbursement allocation rate	13.988% ^{3/}
5	Non-ownership percentage in Catawba plant	80.754% ^{4/}
6	Costs reimbursed by Catawba Joint Owners (L3 x L4 x L5)	1,331
7	Compensation subject to exclusion after Joint Owners' Share (L3 - L6)	10,451
8	NC retail Allocation Factor	67.7195% ^{5/}
9	NC retail portion of executive compensation subject to exclusion adjustment (L7 x L8)	7,077
10	Exclusion percentage	50.00% ^{6/}
11	Public Staff adjustment to exclude executive compensation (L9 x L10)	(3,539)
12	Adjustment per Company	(3,539) ^{7/}
13	Adjustment to remove additional executive compensation (L11 - L12)	\$0

^{1/} E-1, Item 10, NC-0701(J), Line 2.

^{2/} E-1, Item 10, NC-0701(J), Line 3.

^{3/} E-1, Item No. 10, NC-0701, Line 5.

^{4/} E-1, Item No. 10, NC-0701, Line 6.

^{5/} E-1, Item No. 10, NC-0701, Line 10.

^{6/} E-1, Item No. 10, NC-0701, Line 12.

^{7/} E-1, Item No. 10, NC-0701, Line 13.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO AVIATION EXPENSES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(i)

Line No.	Item	Amount
	Wages, benefits, materials, etc.	
1	Corporate aviation O&M and depreciation expense	\$5,865 ^{1/}
2	Percentage to be excluded per Public Staff	50.00% ^{2/}
3	Corporate aviation expenses to be excluded per Public Staff (L1 x L2)	2,932
4	Specific charter flights to be excluded	-
5	Total corporate aviation expenses to be excluded per Public Staff (L3 + L4)	2,932
6	Corporate aviation expenses to be excluded per Company	2,932 ^{3/}
7	Additional aviation O&M expenses to be excluded (L5 - L6)	(0)
8	NC retail percentage	67.7195% ^{4/}
9	Public Staff adjustment to aviation O&M expenses (-L7 x L8)	\$0
	General taxes	
10	Corporate aviation general taxes	\$81 ^{5/}
11	Percentage to be excluded per Public Staff	50.00% ^{2/}
12	Corporate aviation general taxes to be excluded per Public Staff (L10 x L11)	41
13	Corporate aviation general taxes to be excluded per Company	41 ^{6/}
14	Additional aviation general taxes to be excluded (L12 - L13)	0
15	NC retail percentage	67.7195% ^{4/}
16	Public Staff adjustment to aviation general taxes (-L14 x L15)	\$0
	Commercial flights	
17	International flight expense	\$1,326 ^{7/}
18	Allocation percentage from DEBS to DEC	35.41% ^{8/}
19	International flight expense allocated to DEC excluded by the Public Staff (L17 x L18)	470
20	Corporate aviation expenses to be excluded per Company	470 ^{9/}
21	International aviation O&M expenses to be excluded (L19 - L20)	(0)
22	NC retail percentage	67.7195% ^{4/}
23	Public Staff adjustment to O&M for commercial flights (-L21 x L22)	\$0

1/ E-1, Item 10, NC-1702, Line 29.

2/ Based on Stipulation agreement.

3/ E-1, Item 10, NC-1702, Line 31.

4/ Item 45a, salaries and wages allocation factor.

5/ E-1, Item 10, NC-1702, Line 1, Total Duke Energy Carolinas Column.

6/ E-1, Item 10, NC-1702, Line 3, Total Duke Energy Carolinas Column.

7/ Calculated by Public Staff based on Company response to Public Staff DRs 29-9.

8/ Based on Company response to DR29-7b.

9/ E-1, Item 10, NC-1701(G), Line 11, Total Carolinas Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO OUTSIDE SERVICES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(j)

Line No.	Item	Amount
1	Remove items related to non-legal invoices	(\$488) ^{1/}
2	Remove items related to legal invoices	(298) ^{1/}
3	Total Public Staff adjustment to outside services (L1 + L2)	(786)
4	Amount removed by Company in COS 366 exclusion adjustment	(786) ^{3/}
5	Total outside services to be removed (L4 - L5)	0
6	NC retail percentage	67.7195% ^{2/}
7	Public Staff adjustment to outside services - NC retail (L5 x L6)	\$0

1/ Based on information provided by Company in response to DR140-1 and advice of legal counsel.

2/ E-1, Item No. 45A, Factor 59 - Labor (Wage and Salary Related Items).

3/ Provided by Company.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO CREDIT CARD FEES
For the Test Year Ended November 30, 2019
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(k)

Line No.	Item	Amount
1	Annualized 2018 residential credit card transactions	5,433,635 ^{1/}
2	Annualized 2019 residential credit card transactions	6,014,994 ^{2/}
3	Increase in annualized residential credit card transactions (L2 - L1)	581,359
4	Transaction fees included in COS for non-credit card transactions	0.0800 ^{3/}
5	Remove O&M transaction costs included in COS and credit card adjustment (-L3 x L4 /1000)	(\$47)
6	Company adjustment to remove O&M transaction costs included in COS	(47) ^{4/}
7	Adjustment to remove O&M transaction costs included in COS (L5 - L6)	\$0

1/ Per Company response to DR32-2.

2/ E-1, Item 10, NC-2503(F), Line 17.

3/ Per Company response to DR105-2.

4/ E-1, Item 10, NC-2501(F), Line 4.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO STORM DEFERRAL
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(I)

Line No.	Item	Amount
	Income Statement:	
1	Impact to depreciation and amortization for storm deferral per Company	\$0 ^{1/}
2	Impact to depreciation and amortization to remove storm assets from rate base	\$0 ^{1/}
3	Impact to depreciation and amortization for storm deferral per Public Staff	0 ^{3/}
4	Adjustment to deprecation and amortization for storm deferral (L3 +L1 + L2)	<u>\$0</u>
	Rate Base:	
5	Projected storm deferral balance per Company	\$0 ^{1/}
6	Projected storm deferral balance per Public Staff	- ^{3/}
7	Adjustment to working capital for storm deferral (L6 - L5)	<u>\$0</u>
8	Impact to ADIT for storm deferral per Company	\$0 ^{1/}
9	Impact to ADIT for storm deferral per Public Staff	- ^{3/}
10	Adjustment to ADIT for storm deferral (L9 - L8)	<u>\$0</u>
11	Adjustment to remove storm assets from rate base	\$0 ^{2/}
12	Adjustment to remove accumulated depreciation for storm assets from rate base	0 ^{2/}
13	Adjustment to rate base to remove storm assets (L11 + L12)	<u>\$0</u>

1/ E-1, Item 10, NC-2901(H).

2/ Provided by Company.

3/ Public Staff recommendation to remove storm deferral for securitization.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO SPONSORSHIPS AND DONATIONS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(m)

Line No.	Item	Amount
1	Remove sponsorships and donations related to chambers of commerce	(\$136) ^{1/}
2	Remove donations related to RIPON society and NC Chamber Foundation	(13) ^{2/}
3	Remove miscellaneous dues and contributions	<u>(121) ^{3/}</u>
4	Total sponsorships and donations to be removed per Public Staff (L1 + L2 + L3)	(270)
5	Amount removed by Company in COS 366 exclusion adjustment	<u>(134) ^{5/}</u>
6	Total sponsorships and donations to be removed (L4 - L5)	(136)
7	NC retail percentage	<u>67.4345% ^{4/}</u>
8	Public Staff adjustment to remove sponsorships and donations - NC retail (L6 x L7)	(\$92)
9	Company adjustment to remove sponsorships and donations - NC Retail	<u>(92) ^{6/}</u>
10	Adjustment to remove sponsorships and donations - NC Retail (L8 - L9)	<u><u>\$0</u></u>

1/ From Company response to Public Staff Data Request No. 51, Item 3.

2/ From Company response to Public Staff Data Request No. 51, Item 4.

3/ Based on review of NCUC Form E-1, Item No. 16(c).

4/ COS Factor 1 - Demand

5/ Provided by Company.

6/ E-1, Item 10, NC-3601(J), Line 1, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO LOBBYING EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(n)

Line No.	Item	Amount
1	Remove Stakeholder Engagement O&M charges related to lobbying	(\$1,750) ^{1/}
2	Remove State Government Affairs O&M charges related to lobbying	(97) ^{1/}
3	Remove Federal Affairs O&M charges related to lobbying	<u>(1,505) ^{1/}</u>
4	Total lobbying costs to be removed from O&M expense (L1 + L2 + L3)	(3,352)
5	NC retail percentage	<u>67.7195% ^{2/}</u>
6	Public Staff adjustment to remove lobbying expense (L4 x L5)	(\$2,270)
7	Company adjustment to remove lobbying expense	<u>(2,270) ^{3/}</u>
8	Adjustment to remove lobbying expense (L6 - L7)	<u><u>\$0</u></u>

1/ Based on Company response to Public Staff Data Request No. 31, Items 3 and 4.

2/ COS Labor allocation factor.

3/ E-1, Item 10, NC-3601(J), Line 2, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO BOARD OF DIRECTORS EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(o)

Line No.	Item	Amount
1	Total Board of Directors (BOD) cash compensation	\$645 ^{1/}
2	Percentage of exclusion per Public Staff	50% ^{2/}
3	Public Staff adjustment to BOD compensation (-L1 x L2)	<u>(323)</u>
4	BOD insurance charged to DEC	4,659 ^{3/}
5	Percentage of exclusion per Public Staff	50% ^{2/}
6	Public Staff adjustment to BOD insurance (-L4 x L5)	<u>(2,330)</u>
7	BOD and executive members expenses allocated to DEC	357 ^{4/}
8	Percentage of exclusion per Public Staff	50% ^{2/}
9	Public Staff adjustment to BOD and executive members expenses (-L7 x L8)	<u>(179)</u>
10	Total Public Staff adjustment to BOD compensation and expenses (L3 + L6 + L9)	(2,832)
11	NC retail percentage	<u>67.4345% ^{5/}</u>
12	Public Staff adjustment to BOD expenses - NC retail (L10 x L11)	<u>(\$1,910)</u>
13	Company adjustment to BOD expenses - NC Retail	<u>(1,910) ^{6/}</u>
14	Adjustment to BOD expenses - NC Retail (L12 - L13)	<u><u>\$0</u></u>

1/ Amount from 2018 Proxy Statement page 30, allocated to DEC.

2/ Recommended by Public Staff.

3/ Company Response to Public Staff Data Request No. 71, Item 1.

4/ Company Response to Public Staff Data Request No. 72, Item 2.

5/ Factor 1 - Demand Factor.

6/ E-1, Item 10. NC-3601(J), Line 3, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO ADVERTISING EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(p)

Line No.	Item	Amount
1	Remove Advertising Expenses Account 0913001 per Public Staff	(\$311) ^{1/}
2	Remove Advertising Expenses Account 0909650 per Public Staff	(43) ^{1/}
3	Reclass pole painting	124 ^{1/}
4	Total advertising (L1 + L2 + L3)	(\$230)
5	NC Retail Allocation factor	76.2817% ^{2/}
6	Total NC retail advertising expense (L4 x L5)	(\$176)
7	Company adjustment to NC retail advertising expense	(175) ^{3/}
8	Adjustment to NC retail advertising expense (L6 - L7)	<u>\$0</u>

1/ From Company response to Public Staff Data Request No. 50, Item 2.

2/ Allocation Factor - All Cust Num

3/ E-1, Item 10, NC-3401(F), Line 3, Total NC Retail Column.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO SALARIES AND WAGES
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(q)

Line No.	Item	Duke Energy Carolinas (a)	Duke Energy Progress (b)	Service Company (c)	Total (d)
1	Labor per payroll company at May 31, 2020	\$811,097 ^{1/}	\$440,886 ^{1/}	\$763,520 ^{1/}	
2	May 2020 allocation percentages	82.85% ^{1/}	6.92% ^{1/}	25.03% ^{1/}	
3	Annual salaries as of May 31, 2020 per Public Staff (L1 x L2)	671,957	30,526	191,080	
4	Per books salaries	697,465 ^{2/}	29,217 ^{2/}	200,403 ^{2/}	
5	Adjustment to salaries and wages for employees per Public Staff	(25,508)	1,309	(9,323)	(\$33,522) ^{4/}
6	Company adjustment to salaries and wages for employees	(25,507) ^{3/}	1,309 ^{3/}	(9,322) ^{3/}	(33,520) ^{4/}
7	Adjustment to salaries and wages	<u>(\$1)</u>	<u>\$0</u>	<u>(\$1)</u>	<u>(2)</u>
8	Public Staff adjustment to total salaries and wages (L7)				(2)
9	Percent charged to electric expense				66.83% ^{5/}
10	Adjustment to net electric O&M salaries and wages (L7 x L8)				<u>0</u>
11	Adjustment to net electric O&M salaries and wages (L10)				0
12	Fringe benefits contribution rate				10.46% ^{6/}
13	Adjustment to fringe benefits (L10 x L12)				<u>0</u>
14	Total adjustment to O&M expense - total system (L10 + L13)				0
15	NC retail percentage				67.7195% ^{7/}
16	Total adjustment to O&M expense - NC retail (L14 x L15)				<u>\$0</u>
17	Impact on payroll taxes before Medicare				\$0 ^{8/}
18	Impact on Medicare payroll taxes				<u>0</u> ^{9/}
19	Adjustment to payroll taxes - total system (L17 + L18)				0
20	NC retail percentage				67.7195% ^{7/}
21	Adjustment to payroll taxes - NC retail (L19 x L20)				<u>\$0</u>

1/ E-1, Item 10, NC-1304(H).

2/ E-1, Item 10, NC-1301(H), Labor per Books Column.

3/ E-1, Item 10, NC-1301(H), Pro Forma HR Salaries Column.

4/ Sum of Columns (a) through Columns (c).

5/ E-1, Item 10 NC-1301(H), Line 18.

6/ E-1, Item 10, NC-1301(H), Line 37.

7/ E-1, Item 45a, DEC COS NC All Labor Factor.

8/ Line 10 times 85.42% subject to OASDI times 6.2% OASDI tax rate from E-1, Item 10, NC-1301(H).

9/ Line 10 times 1.45% Medicare tax rate from E-1 Item 10, NC-1301(H).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZE STORM COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(r)

Line No.	Item	Amount
	<u>Normalized storm expense</u>	
1	NC retail amount of storm costs considered normal for 2018	\$19,798 ^{1/}
2	NC retail percentage	<u>73.6369% ^{2/}</u>
3	2018 storm costs to be included in calculation of normalized level (L1 / L2)	26,886
4	2010 through 2019 costs adjusted for inflation, excluding 2018	<u>250,780 ^{3/}</u>
5	Total storm costs for ten years adjusted for inflation (L3 + L4)	277,666
6	Number of years	<u>10</u>
7	Normalized level of storm costs - total system (L5 x L6)	27,767
8	NC retail percentage	<u>73.6369% ^{2/}</u>
9	Normalized level of storm costs per Public Staff (L7 x L8)	20,447
10	2018 Storm costs	<u>18,837 ^{4/}</u>
11	Public Staff adjustment to normalized level of storm costs (L9 - L10)	1,610
12	Company adjustment to normalized level of storm costs	<u>1,610 ^{5/}</u>
13	Adjustment to normalized level of storm costs (L11 - L12)	<u><u>\$0</u></u>

1/ E-1, Item 10, NC-2905(E), Line 2, NC Retail column.

2/ Allocation factor distribution overhead lines.

3/ Per Company response to DR46-1 and storm costs included in Sub 1146.

4/ Per Company response to DR46-1 4th supplemental.

5/ E-1, Item 10, NC-3701(G), Line 11.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO REMOVE O&M RELATED TO RETIRED HYDRO UNITS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(s)

Line No.	Item	Amount
1	Non-payroll related O&M related to retired hyrdo units	\$150 ^{1/}
2	NC retail allocation factor	67.4345% ^{2/}
3	Non-payroll related O&M NC retail	101
4	Amount removed by Company in current case	101 ^{1/}
5	Adjustment to remove non-payroll O&M related to retired hydro units (L4 - L3)	(\$0)

1/ E-1, Item 10, NC-3401(F), Line 2, Total NC Retail Column.

2/ NC COS Production Demand factor.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations

ADJUSTMENT TO RATE CASE EXPENSE AND AMORTIZATION
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(t)

Line No.	Item	Amount
	Income Statement Impact:	
1	Rate case expense for current case	\$4,005 ^{1/}
2	Amortization period	5 ^{2/}
3	Annual normalized level of rate case expense per Public Staff (L1 / L2)	801
4	Annual normalized level of rate case expense per Company	801 ^{3/}
5	Adjustment to annual normalized rate case expense (L3 - L4)	<u>\$0</u>
	Rate Base Impact:	
4	Projected working capital after first year of amortization per Company	\$0 ^{4/}
5	Public Staff recommended regulatory asset amount for rate case expense	0
6	Adjustment to rate base for rate case expense (L5 - L4)	<u>\$0</u>
7	Impact to ADIT per Company	\$0 ^{5/}
8	Impact to ADIT per Public Staff	0
9	Adjustment to ADIT for rate case expense (L8 - L7)	<u>\$0</u>

1/ E-1, Item 10, NC-1601(G), Line 3.

2/ E-1, Item 10, NC-1601(G), Line 5.

3/ E-1, Item 10, NC-1601(G), Line 6.

4/ E-1, Item 10, NC-1601(G), Line 17.

5/ E-1, Item 10, NC-1601(G), Line 21.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO SEVERANCE COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(u)

Line No.	Item	Amount
	<u>Income Statement Impact:</u>	
1	Remove actual severance costs in 2018	(\$102,108) ^{1/}
2	Annual amortization related to severance costs based on 3 year amortization	32,022 ^{2/}
3	Total Carolinas adjustment to remove actual severance costs (L1 + L2)	(70,086)
4	NC Retail Allocation factor	67.7195% ^{3/}
5	NC Retail adjustment to remove severance costs (L3 x L4)	(47,462)
6	Company adjustment to O&M related to severance costs	(47,462) ^{4/}
7	Public Staff adjustment to O&M related to severance costs (L5 - L6)	\$0
	<u>Rate Base Impact:</u>	
8	Impact to working capital investment per Company	\$0 ^{5/}
9	Impact to working capital investment per Public Staff	0 ^{6/}
10	Adjustment to working capital investment (L9 - L8)	\$0
11	Impact to ADIT per Company	\$0 ^{7/}
12	Impact to ADIT per Public Staff	0 ^{6/}
13	Adjustment to ADIT (L12 - L11)	\$0

- 1/ E-1, Item 10, NC-2001(G), Line 2, Total Carolinas Column.
2/ E-1, Item 10, NC-2002(G), Line 15.
3/ E-1, Item 45A Labor allocation factor.
4/ E-1, Item 10, NC-2001(G), Total NC Retail Column, Line 4.
5/ E-1, Item 10, NC - 2001(G), NC Retail Column, Line 14.
6/ Public Staff recommendation.
7/ E-1, Item 10, NC - 2001(G), NC Retail Column, Line 17.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO BENEFITS
For the Test Year Ended December 31, 2018
(In Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(v)

Line No.	Item	Amount
1	Total pension, OPEB, FASB 112, and non-qualified to O&M expense NC retail as of January 2020	(\$3,560) ^{1/}
2	Total pension, OPEB, FASB 112, and non-qualified to O&M expense NC retail updated May 2020	(4,449) ^{2/}
3	Adjustment to total pension, OPEB, FAS 112, and non-qualified expenses NC Retail (L2 - L1)	<u>(889)</u>

1/ E-1, Item 10, NC-1401(E), Line 20, Total NC Retail Column.

2/ Per Company response to DR257-2.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO COMPANY'S INFLATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(w)

Line No.	Item	Amount
1	Total non-labor O&M expense to be adjusted per Company	\$399,463 1/
2	Remove uncollectibles adjusted elsewhere	0 2/
3	Public Staff adjustment to variable O&M expenses for changes in customer growth	0 3/
4	Public Staff adjustment to aviation expense	0 4/
5	Public Staff adjustment to outside services	0 5/
6	Public Staff adjustment to sponsorships and donations	0 6/
7	Public Staff adjustment to advertising	0 7/
8	Public Staff adjustment to retired hydro	(0) 8/
9	Public Staff adjustment to lobbying	0 9/
10	Public Staff adjustment to Board of Directors expenses	0 10/
11	Total adjusted O&M subject to inflation (Sum of L1 thru L10)	399,463
12	Inflation percentage based on December 31, 2019 update	1.15% 11/
13	Public Staff inflation adjustment (L11 x L12)	4,594
14	Inflation adjustment per Company	4,594 12/
15	Public Staff adjustment to inflation adjustment (L13- L14)	\$0

- 1/ E-1, Item 10, NC-1201(J), Line 33, Column (c).
2/ Removed by Company in NC-1201(J).
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(c), Line 15.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(i), Line 9 plus Line 21.
5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(j), Line 7.
6/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(m), Line 8.
7/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(p), Line 8.
8/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(p), Line 3.
9/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(n), Line 6.
10/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(o), Line 12.
11/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(v)(1), Column (e), Line 4.
12/ E-1, Item 10, NC-1201(J), Line 35, Column (c).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF INFLATION RATE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(w)(1)

Line No.	Item	CPI (a)	PPI Finished Goods Less Food & Energy (b)	PPI Processed Materials Less Food & Energy (c)	PPI Average (d)	Inflation Rate (e)
1	January 2020	256.394 ^{1/}	209.8 ^{1/}	195.0 ^{1/}		
2	Thirteen month average for test year	250.8 ^{2/}	203.2 ^{2/}	201.4 ^{2/}		
3	Increase from average to December 2019 (L1 - L2)	5.6	6.6	(6.4)		
4	Percentage increase	2.25% ^{3/}	3.25% ^{3/}	-3.18% ^{3/}	0.04% ^{4/}	<u>1.15% ^{5/}</u>

1/ E-1. Item 10, NC-1203, NC-1204, NC-1205, May 2020 amounts.

2/ E-1, Item 10, NC-1202(J), Line 15.

3/ Line 3 divided by Line 2.

4/ Average of percentage increases in Columns (b) and (c).

5/ Average of CPI percentage increase and PPI average percentage increase in Columns (a) and (d).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO FLOWBACK PROTECTED EDIT DUE
TO TAX CUTS AND JOBS ACT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(x)

Line No.	Item	Amount
	<u>Income statement</u>	
1	Annual amortization of protected EDIT - NC retail	(\$29,734) ^{1/}
2	Income tax impact	6,943 ^{3/}
3	Annual amortization of protected EDIT - NC retail, net of tax (L1 + L2)	(\$22,791)
4	Company adjustment for annual amortization of protected EDIT - NC Retail	(22,791) ^{2/}
5	Public Staff adjustment for annual amortization of protected EDIT - NC Retail (L3 - L4)	<u>\$0</u>
	<u>Rate base</u>	
6	Adjustment to regulatory assets and liabilities (L1)	\$29,734
7	Composite income tax rate	23.3503% ^{4/}
8	Impact to accumulated deferred income taxes (L6 x L7)	(6,943)
9	Adjustment to rate base (L6 + L8)	\$22,791
10	Company adjustment for annual amortization of protected EDIT - NC Retail	22,791 ^{2/}
11	Public Staff adjustment for annual amortization of protected EDIT - NC Retail (L9 - L10)	<u>\$0</u>

- 1/ McManeus Supplemental Exhibit 4, Column (a), Line 11.
2/ E-1, Item 10, NC-3501(G), Lines 4 and 9.
3/ Line 1 times composite income tax rate on Line 7.
4/ Composite tax rate,

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
ADJUSTMENT TO FUEL FACTORS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(y)

Line No.	Item	Residential	General	Industrial	Lighting	Total NC Retail
Impact to Revenues:						
1	NC Retail kWh actual sales - 12 months ended December 2018	22,763,028,911 ^{1/}	23,470,094,319 ^{1/}	12,555,749,214 ^{1/}	691,830,144 ^{1/}	59,480,702,588 ^{1/}
2	Fuel factors approved in E-7, Sub 1228 including reg fee	1.6048 ^{4/}	1.7606 ^{4/}	1.6674 ^{4/}	1.7606 ^{4/}	
3	Fuel factors approved in E-7, Sub 1190 including reg fee	1.8150 ^{5/}	1.9586 ^{5/}	1.8959 ^{5/}	1.9586 ^{5/}	
4	Change in fuel factors (L2 - L3)	(0.2102)	(0.1981)	(0.2285)	(0.1981)	
5	Revenue adjustment for change in fuel factors (L1 x L4)	<u>(\$47,842)</u>	<u>(\$46,484)</u>	<u>(\$28,689)</u>	<u>(\$1,370)</u>	<u>(\$124,385) ^{7/}</u>
6	Regulatory fee	0.0012967 ^{6/}	0.0012967 ^{6/}	0.0012967 ^{6/}	0.0012967 ^{6/}	
7	Regulatory fee adjustment for change in fuel factors (L5 x L6)	<u>(\$62)</u>	<u>(\$60)</u>	<u>(\$37)</u>	<u>(\$1.78)</u>	<u>(\$161) ^{7/}</u>
Impact to Expenses:						
8	NC Retail kWh actual sales - 12 months ended December 2018	22,763,028,911 ^{1/}	23,470,094,319 ^{1/}	12,555,749,214 ^{1/}	691,830,144 ^{1/}	59,480,702,588 ^{1/}
9	Fuel factors approved in E-7, Sub 1228 excluding reg fee	1.6027 ^{2/}	1.7583 ^{2/}	1.6652 ^{2/}	1.7583 ^{2/}	
10	Fuel factors approved in E-7, Sub 1190 excluding reg fee	1.8126 ^{3/}	1.9561 ^{3/}	1.8934 ^{3/}	1.9561 ^{3/}	
11	Change in fuel factors (L9 - L10)	(0.2099)	(0.1978)	(0.2282)	(0.1978)	
12	Expense adjustment for change in fuel factors (L8 x L11)	<u>(\$47,780)</u>	<u>(\$46,424)</u>	<u>(\$28,652)</u>	<u>(\$1,368)</u>	<u>(\$124,224) ^{7/}</u>

1/ E-1, Item 10, NC-0201(E), Line 11.

2/ Fuel factors approved in Docket E-7, Sub 1228.

3/ Fuel factors approved in Docket E-7, Sub 1190.

4/ Line 9 times Line 7 plus Line 9

5/ Line 10 times Line 7 plus Line 10

6/ Regulatory fee per Company.

7/ Sum of class totals.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
INTEREST SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(y)

Line No.	Item	Amount
1	Public Staff original cost rate base	\$16,910,528 ^{1/}
2	Public Staff long term debt ratio	48.000% ^{2/}
3	Public Staff embedded cost of debt	<u>4.270% ^{3/}</u>
4	Public Staff interest expense income tax deduction (L1 x L2 x L3)	346,598
5	Company interest expense income tax deduction	<u>350,936 ^{4/}</u>
6	Adjustment to interest expense (L4 - L5)	(4,338)
7	Composite tax rate	<u>23.3503% ^{5/}</u>
8	Adjustment to income taxes (-L6 x L7)	<u><u>\$1,013</u></u>

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2, Line 12, Column (c).

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (c).

4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3-1(y)(1), Line 4.

5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-3, Line 8.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF COMPANY'S INTEREST
SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 3-1(y)(1)

Line No.	Item	Amount
1	NC retail rate base per Company	\$17,122,166 ^{1/}
2	Long term debt ratio per Company	48.000% ^{2/}
3	Long term debt cost rate per Company	<u>4.270% ^{3/}</u>
4	Interest tax deduction per Company (L1 x L2 x L3)	<u><u>\$350,936</u></u>

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2, Line 12, Column (a).

2/ McManeus Second Supplemental Exhibit 1

3/ McManeus Second Supplemental Exhibit 1..

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
RETURN ON EQUITY AND ORIGINAL COST RATE BASE BEFORE AND
AFTER PUBLIC STAFF PROPOSED DECREASE
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 4

Line No.	Item	Capitalization Ratio (a)	Before Public Staff Proposed Decrease				After Public Staff Proposed Decrease			
			NC Retail Rate Base (b)	Embedded Cost or Return (c)	Weighted Cost or Return (d)	Net Operating Income (e)	NC Retail Rate Base (f)	Embedded Cost or Return (g)	Weighted Cost or Return (h)	Net Operating Income (i)
1	Long-term debt	48.000% ^{1/}	\$8,117,053 ^{2/}	4.270% ^{1/}	2.05% ^{5/}	\$346,598 ^{6/}	\$8,131,775 ^{9/}	4.270% ^{1/}	2.050% ^{11/}	\$347,227 ^{12/}
2	Common equity	52.000% ^{1/}	8,793,474 ^{2/}	7.10% ^{4/}	3.69% ^{5/}	624,708 ^{7/}	8,809,423 ^{9/}	9.60% ^{1/}	4.992% ^{11/}	845,705 ^{12/}
3	Total (L1 + L2)	100.000%	\$16,910,528 ^{3/}		5.74%	\$971,306 ^{8/}	\$16,941,199 ^{10/}		7.042%	\$1,192,932

1/ Per Second Stipulation.

2/ Column (b), Line 3 times Column (a)

3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2, Line 15, Column (c).

4/ Column (e) divided by Column (b).

5/ Column (a) times Column (c).

6/ Column (b) times Column (c).

7/ Line 3, Column (e) minus Line 1, Column (e).

8/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 3, Line 17, Column (c).

9/ Column (f), Line 3 times Column (a)

10/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 2, Line 15, Column (e).

11/ Column (a) times Column (g).

12/ Column (f) times Column (g).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF PUBLIC STAFF'S ADDITIONAL GROSS
REVENUE REQUIREMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Stipulation Exhibit 1
Schedule 5

Line No.	Item	Debt (a)	Equity (b)	Total (c) ^{7/}
	<u>Calculation of additional gross revenue requirement</u>			
1	Required net operating income	\$347,227 ^{1/}	\$845,705 ^{4/}	\$1,192,932
2	Net operating income before proposed increase	<u>\$346,598 ^{2/}</u>	<u>624,708 ^{5/}</u>	<u>971,306</u>
3	Additional net operating income requirement (L1 - L2)	629	220,997	221,626
4	Retention factor	<u>0.9962055 ^{3/}</u>	<u>0.7635890 ^{6/}</u>	
5	Additional revenue requirement (L3 / L4)	<u>\$631</u>	<u>\$289,418</u>	<u>\$290,049</u>

- 1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (i).
2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (e).
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 10.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (i).
5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (e).
6/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 14.
7/ Column (a) plus Column (b).

I/A

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF LEVELIZED FEDERAL UNPROTECTED
EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Settlement Exhibit 2
Schedule 1

Line No.	Item	Year 1 Revenue Requirement (a)	Year 2 Revenue Requirement (b)	Year 3 Revenue Requirement (c)	Year 4 Revenue Requirement (d)	Year 5 Revenue Requirement (e)	Total Revenue Requirement (f)
1	Total NC retail regulatory liability to be amortized	(\$245,120) ^{1/}	(\$245,120) ^{1/}	(\$245,120) ^{1/}	(\$245,120) ^{1/}	(\$245,120) ^{1/}	
2	Annuity factor	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(57,208)	(57,208)	(57,208)	(57,208)	(57,208)	(\$286,040) ^{5/}
4	One minus composite income tax rate	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497%
5	Net operating income effect (L3 x L4)	(43,850)	(43,850)	(43,850)	(43,850)	(43,850)	(219,249)
6	Retention factor	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890
7	Levelized rider EDIT credit (L5 / L6)	(\$57,426)	(\$57,426)	(\$57,426)	(\$57,426)	(\$57,426)	(\$287,130)
8	Total NC retail regulatory liability to be amortized	(\$783,045) ^{6/}	(\$783,045) ^{1/}	(\$783,045) ^{1/}	(\$783,045) ^{1/}	(\$783,045) ^{1/}	
9	Annuity factor	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	4.2847 ^{2/}	
10	Levelized rider EDIT regulatory liability (L1 / L2)	(182,754)	(182,754)	(182,754)	(182,754)	(182,754)	(\$913,770) ^{5/}
11	One minus composite income tax rate	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497% ^{3/}	76.6497%
12	Net operating income effect (L3 x L4)	(140,080)	(140,080)	(140,080)	(140,080)	(140,080)	(700,402)
13	Retention factor	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890
14	Levelized rider EDIT credit (L5 / L6)	(\$183,449)	(\$183,449)	(\$183,449)	(\$183,449)	(\$183,449)	(\$917,250)

- 1/ McManeus Supplemental Exhibit 4, Column (c), Line 8.
2/ Boswell Second Supplemental and Stipulation Exhibit 2, Schedule 1(a), Line 6.
3/ One minus composite income tax rate of 23.3503%.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).
5/ Sum of Columns(a) through (e).
6/ McManeus Supplemental Exhibit 4, Column (b), Line 8.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
**CALCULATION OF ANNUITY FACTOR FOR EDIT
LIABILITY RIDER**
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Settlement Exhibit 2
Schedule 1(a)

Line No.	Item	Amount
	<u>Annuity Factor</u>	
1	Number of years	5 ^{1/}
2	Payment per period	1
3	After tax rate of return (L9)	6.563%
4	Present value of 1 dollar over number of years with with 1 payment per year	4.1486
5	1 plus (interest rate divided by two)	1.0328
6	Annuity factor (L4 x L5)	<u>4.2847</u>

	Capital Structure	Cost Rates	Overall Rate of Return	Net of Tax Rate
	(a)	(b)	(c)	(d)
	<u>After Tax Rate of Return</u>			
7	Long-term debt	48.00% ^{2/}	4.270% ^{4/}	2.050%
8	Common equity	52.00% ^{3/}	9.600% ^{5/}	4.992% ^{6/}
9	Total	<u>100.00%</u>	<u>7.042%</u>	<u>6.563%</u>

- 1/ Rider period recommended by Public Staff.
2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).
3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (a).
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (g).
5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (g).
6/ Column (a) times Column (b).
7/ Column (c) times (1 minus combined income tax rate of 23.3503%).
8/ Amount from Column (c).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF LEVELIZED FEDERAL PROVISIONAL
EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Settlement Exhibit 2
Schedule 2

Line No.	Item	Year 1 Revenue Requirement (a)	Year 2 Revenue Requirement (b)	Total Revenue Requirement (c)
1	Total NC retail regulatory liability to be amortized	(\$121,053) ^{1/}	(\$121,053) ^{1/}	
2	Annuity factor	1.8787 ^{2/}	1.8787 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(64,434)	(64,434)	(\$128,868)
4	One minus composite income tax rate	76.6497% ^{3/}	76.6497% ^{3/}	76.6497%
5	Net operating income effect (L3 x L4)	(49,388)	(49,388)	(98,777)
6	Retention factor	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890
7	Levelized rider EDIT credit (L5 / L6)	(\$64,679)	(\$64,679)	(\$129,359)

- 1/ McManeus Supplemental Exhibit 4., Column (e), Line 8.
2/ Boswell Second Supplemental and Stipulation Exhibit 2, Schedule 2(a), Line 6.
3/ One minus composite income tax rate of 23.3503%.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF ANNUITY FACTOR FOR EDIT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Settlement Exhibit 2
Schedule 2(a)

Line No.	Item	Amount
	<u>Annuity Factor</u>	
1	Number of years	2 ^{1/}
2	Payment per period	1
3	After tax rate of return (L9)	6.563%
4	Present value of 1 dollar over number of years with with 1 payment per year	1.8190
5	1 plus (interest rate divided by two)	1.0328
6	Annuity factor (L4 x L5)	<u>1.8787</u>

	Capital Structure	Cost Rates	Overall Rate of Return	Net of Tax Rate
	(a)	(b)	(c)	(d)
	<u>After Tax Rate of Return</u>			
7	Long-term debt	48.00% ^{2/}	4.270% ^{4/}	2.050%
8	Common equity	52.00% ^{3/}	9.600% ^{5/}	4.992% ^{8/}
9	Total	<u>100.00%</u>	<u>7.042%</u>	<u>6.563%</u>

1/ Rider period per Second Stipulation.

2/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (a).

4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 1, Column (g).

5/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4, Line 2, Column (g).

6/ Column (a) times Column (b).

7/ Column (c) times (1 minus combined income tax rate of 23.3503%).

8/ Amount from Column (c).

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
CALCULATION OF LEVELIZED STATE EDIT RIDER
CREDIT
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Boswell Second Supplemental and Settlement Exhibit 2
Schedule 3

Line No.	Item	Year 1 Revenue Requirement (a)	Year 2 Revenue Requirement (b)	Total Revenue Requirement (b)
1	Total NC retail regulatory liability to be amortized	(\$34,392) ^{1/}	(\$34,392) ^{1/}	
2	Annuity factor	1.8787 ^{2/}	1.8787 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(18,306)	(18,306)	(\$36,612)
4	One minus composite income tax rate	76.6497% ^{3/}	76.6497% ^{3/}	76.6497%
5	Net operating income effect (L3 x L4)	(14,031)	(14,031)	(28,063)
6	Retention factor	0.7635890 ^{4/}	0.7635890 ^{4/}	0.7635890
7	Levelized rider EDIT credit (L5 / L6)	(\$18,375)	(\$18,375)	(\$36,751)

- 1/ McManeus Supplemental Exhibit 4, Column (d), Line 8.
2/ Boswell Second Supplemental and Stipulation Exhibit 2, Schedule 2(a), Line 6.
3/ One minus composite income tax rate of 23.3503%.
4/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Rate of Return and Index
Summer Coincident Peak Method
Test Year Ending December 31, 2018

<u>Line</u>	<u>Rate Class</u>	<u>Present Rates</u>		<u>Company Proposed Rates</u>	
		<u>Rate of Return</u> (1)	<u>Index</u> (2)	<u>Rate of Return</u> (3)	<u>Index</u> (4)
1	Rate RS	5.2%	97	7.5%	98
2	Rate GS	6.8%	126	8.6%	114
3	Rate LT	3.9%	72	6.5%	85
4	Rate IND	8.3%	153	9.7%	128
	Rate OPT				
5	Rate OPT-Sec.	5.0%	93	7.3%	96
6	Rate OPT-Pri.	4.2%	78	6.7%	88
7	Rate OPT-Trans.	<u>5.5%</u>	102	<u>7.7%</u>	101
8	Total Rate OPT	4.7%	88	7.1%	93
9	Total NC Retail	5.4%	100	7.6%	100

Source: Pirro Exhibit 4

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Company Proposed Increase by Rate Class
Summer Coincident Peak Method
Test Year Ending December 31, 2018

Line	Rate Class	Present Revenue with Existing Riders ¹	Proposed Revenue with Existing Riders ²	Company Proposed Increase/(Decrease)		Proposed Revenue with Existing & New Riders ³	Company Proposed Increase/(Decrease)	
		(000) (1)	(000) (2)	Amount (000) (3)	Percent (4)	(000) (5)	Amount (000) (6)	Percent (7)
1	Rate RS	\$ 2,326,818	\$ 2,565,407	\$ 238,588	10.3%	\$ 2,485,258	\$ 158,440	6.8%
2	Rate GS	907,523	973,222	65,698	7.2%	952,905	45,381	5.0%
3	Rate LT	119,405	140,499	21,094	17.7%	134,309	14,905	12.5%
4	Rate IND	158,102	166,430	8,328	5.3%	163,328	5,226	3.3%
	Rate OPT							
5	Rate OPT-Sec.	846,922	917,911	70,989	8.4%	893,150	46,229	5.5%
6	Rate OPT-Pri.	529,597	578,854	49,256	9.3%	561,611	32,014	6.0%
7	Rate OPT-Trans.	57,579	62,121	4,542	7.9%	59,682	2,103	3.7%
8	Total Rate OPT	1,434,098	1,558,886	124,788	8.7%	1,514,444	80,346	5.6%
9	Total NC Retail	\$ 4,945,947	\$ 5,404,444	\$ 458,497	9.3%	\$ 5,250,244	\$ 304,297	6.2%

Source:

¹ Pirro Exhibit 2, column (f)

² Pirro Exhibit 2, column (g)

³ Pirro Exhibit 2, column (l). Includes EDIT-2.

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Rate of Return and Index
Winter Coincident Peak Method
Test Year Ending December 31, 2018

<u>Line</u>	<u>Rate Class</u>	<u>Present Rates</u>		<u>25% Subsidy Reduction Rates</u>	
		<u>Rate of Return (1)</u>	<u>Index (2)</u>	<u>Rate of Return (3)</u>	<u>Index (4)</u>
1	Rate RS	3.8%	70	6.4%	84
2	Rate GS	9.3%	170	10.5%	137
3	Rate LT	2.6%	49	5.6%	73
4	Rate IND	8.5%	156	9.9%	130
	Rate OPT				
5	Rate OPT-Sec.	7.2%	133	9.0%	118
6	Rate OPT-Pri.	7.4%	136	9.1%	119
7	Rate OPT-Trans.	<u>8.2%</u>	151	<u>9.7%</u>	127
8	Total Rate OPT	7.3%	135	9.1%	119
9	Total NC Retail	5.4%	100	7.7%	100

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Proposed Increase by Rate Class
Winter Coincident Peak Method
Test Year Ending December 31, 2018

Line	Rate Class	Present Revenue with Existing Riders ¹	Proposed Revenue with Existing Riders	Proposed Increase/(Decrease)		Proposed Revenue with Existing & New Riders	Proposed Increase/(Decrease)	
		(000) (1)	(000) (2)	Amount (000) (3)	Percent (4)	(000) (5)	Amount (000) (6)	Percent (7)
1	Rate RS	\$ 2,326,818	\$ 2,626,788	\$ 299,970	12.9%	\$ 2,546,639	\$ 219,821	9.4%
2	Rate GS	907,523	944,747	37,224	4.1%	924,430	16,907	1.9%
3	Rate LT	119,405	144,581	25,176	21.1%	138,391	18,986	15.9%
4	Rate IND	158,102	165,910	7,808	4.9%	162,808	4,706	3.0%
	Rate OPT							
5	Rate OPT-Sec.	846,922	892,688	45,767	5.4%	867,928	21,006	2.5%
6	Rate OPT-Pri.	529,597	556,394	26,796	5.1%	539,193	9,596	1.8%
7	Rate OPT-Trans.	57,579	60,170	2,591	4.5%	57,689	110	0.2%
8	Total Rate OPT	1,434,098	1,509,253	75,155	5.2%	1,464,811	30,713	2.1%
9	Total NC Retail	\$ 4,945,947	\$ 5,391,279	\$ 445,332	9.0%	\$ 5,237,079	\$ 291,132	5.9%

Source:

¹ Pirro Exhibit 2, column (f)

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Rate of Return and Index
Summer/Winter Peak Method
Test Year Ending December 31, 2018

<u>Line</u>	<u>Rate Class</u>	<u>Present Rates</u>		<u>25% Subsidy Reduction Rates</u>	
		<u>Rate of Return (1)</u>	<u>Index (2)</u>	<u>Rate of Return (3)</u>	<u>Index (4)</u>
1	Rate RS	4.5%	82	6.9%	91
2	Rate GS	8.0%	147	9.6%	125
3	Rate LT	3.2%	59	6.0%	78
4	Rate IND	8.4%	154	9.8%	129
	Rate OPT				
5	Rate OPT-Sec.	6.1%	112	8.1%	107
6	Rate OPT-Pri.	5.7%	105	7.9%	103
7	Rate OPT-Trans.	<u>6.8%</u>	126	<u>8.7%</u>	114
8	Total Rate OPT	6.0%	110	8.1%	105
9	Total NC Retail	5.4%	100	7.6%	100

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214

Proposed Increase by Rate Class
Summer/Winter Peak Method
Test Year Ending December 31, 2018

Line	Rate Class	Present Revenue with Existing Riders ¹	Proposed Revenue with Existing Riders	Proposed Increase/(Decrease)		Proposed Revenue with Existing & New Riders	Proposed Increase/(Decrease)	
		(000) (1)	(000) (2)	Amount (000) (3)	Percent (4)	(000) (5)	Amount (000) (6)	Percent (7)
1	Rate RS	\$ 2,326,818	\$ 2,594,917	\$ 268,099	11.5%	\$ 2,514,769	\$ 187,950	8.1%
2	Rate GS	907,523	957,158	49,634	5.5%	936,841	29,317	3.2%
3	Rate LT	119,405	142,294	22,889	19.2%	136,104	16,699	14.0%
4	Rate IND	158,102	166,066	7,964	5.0%	162,964	4,862	3.1%
	Rate OPT							
5	Rate OPT-Sec.	846,922	903,548	56,626	6.7%	878,787	31,866	3.8%
6	Rate OPT-Pri.	529,597	566,285	36,688	6.9%	549,085	19,487	3.7%
7	Rate OPT-Trans.	57,579	61,011	3,432	6.0%	58,530	951	1.7%
8	Total Rate OPT	1,434,098	1,530,844	96,746	6.7%	1,486,402	52,304	3.6%
9	Total NC Retail	\$ 4,945,947	\$ 5,391,279	\$ 445,332	9.0%	\$ 5,237,079	\$ 291,132	5.9%

Source:

¹ Pirro Exhibit 2, column (f)

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214Comparison of Current and Proposed Rates vs. Proposed Unit Costs
for Rate OPT-V

Line	Description	Current Rate (1)	DEC Proposed Rate (2)	DEC Proposed Change (3)	Unit Cost (4)	Change to Reach Unit Cost (5)
Transmission Service						
1	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 5.64	-82.5%
	Demand Charge (\$/kW)					
2	Summer	\$ 10.4799	\$ 11.1304	6.2%	\$ 15.7300	50.1%
3	Winter	\$ 5.7236	\$ 6.2580	9.3%	\$ 15.7300	174.8%
	Energy Charge (\$/kWh)					
4	On-Peak	\$ 0.061023	\$ 0.065816	7.9%	\$ 0.028300	-53.6%
5	Off-Peak	\$ 0.029853	\$ 0.032221	7.9%	\$ 0.028300	-5.2%
Primary Service - Small						
6	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 14.38	-55.3%
	Demand Charge (\$/kW)					
7	Summer	\$ 13.8294	\$ 15.5243	12.3%	\$ 13.20	-4.6%
8	Winter	\$ 7.2237	\$ 8.4773	17.4%	\$ 13.20	82.7%
	Energy Charge (\$/kWh)					
9	On-Peak	\$ 0.060893	\$ 0.071276	17.1%	\$ 0.027200	-55.3%
10	Off-Peak	\$ 0.030213	\$ 0.034868	15.4%	\$ 0.027200	-10.0%
Primary Service - Medium						
11	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 18.68	-41.9%
	Demand Charge (\$/kW)					
12	Summer	\$ 14.0567	\$ 15.0507	7.1%	\$ 17.90	27.3%
13	Winter	\$ 7.6772	\$ 8.4649	10.3%	\$ 17.90	133.2%
	Energy Charge (\$/kWh)					
14	On-Peak	\$ 0.061103	\$ 0.065978	8.0%	\$ 0.028000	-54.2%
15	Off-Peak	\$ 0.029903	\$ 0.032189	7.6%	\$ 0.028000	-6.4%
Primary Service - Large						
16	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 17.75	-44.8%
	Demand Charge (\$/kW)					
	Summer					
17	First 5,000 kW	\$ 15.0272	\$ 16.2520	8.2%	\$ 16.65	10.8%
18	All Additional kW	\$ 10.6209	\$ 11.4696	8.0%	\$ 16.65	56.8%
	Winter					
19	First 5,000 kW	\$ 8.2080	\$ 9.1374	11.3%	\$ 16.65	102.9%
20	All Additional kW	\$ 5.7995	\$ 6.4663	11.5%	\$ 16.65	187.1%
	Energy Charge (\$/kWh)					
21	On-Peak	\$ 0.061343	\$ 0.066492	8.4%	\$ 0.027600	-55.0%
22	Off-Peak	\$ 0.030163	\$ 0.032362	7.3%	\$ 0.027600	-8.5%
Secondary Service - Small						
23	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 22.39	-30.4%
	Demand Charge (\$/kW)					
24	Summer	\$ 15.8246	\$ 17.0117	7.5%	\$ 18.49	16.8%
25	Winter	\$ 8.6426	\$ 9.6158	11.3%	\$ 18.49	113.9%
	Energy Charge (\$/kWh)					
26	On-Peak	\$ 0.060903	\$ 0.066421	9.1%	\$ 0.028200	-53.7%
27	Off-Peak	\$ 0.029723	\$ 0.032504	9.4%	\$ 0.028200	-5.1%
Secondary Service - Medium						
28	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 22.64	-29.6%
	Demand Charge (\$/kW)					
29	Summer	\$ 15.3333	\$ 16.3747	6.8%	\$ 18.62	21.4%
30	Winter	\$ 8.3744	\$ 9.2160	10.0%	\$ 18.62	122.3%
	Energy Charge (\$/kWh)					
31	On-Peak	\$ 0.061303	\$ 0.065657	7.1%	\$ 0.027900	-54.5%
32	Off-Peak	\$ 0.030113	\$ 0.031960	6.1%	\$ 0.027900	-7.3%
Secondary Service - Large						
33	Basic Facilities Charge	\$ 32.17	\$ 32.17	0.0%	\$ 20.77	-35.4%
	Demand Charge (\$/kW)					
34	Summer	\$ 13.1846	\$ 14.2590	8.1%	\$ 16.88	28.0%
35	Winter	\$ 7.2008	\$ 8.0723	12.1%	\$ 16.88	134.4%
	Energy Charge (\$/kWh)					
36	On-Peak	\$ 0.061433	\$ 0.066799	8.7%	\$ 0.027500	-55.2%
37	Off-Peak	\$ 0.030243	\$ 0.032420	7.2%	\$ 0.027500	-9.1%

Sources:

E-1 Item 39B (Redlined Tariffs)
E-1 Item 45E (Demand, Energy, and Customer COS Study)

**Erik C. Lioy | Partner | DHG Forensics | Charlotte, NC**

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CERTIFICATIONS

Certified Public Accountant
(CPA) (NC Lic. No. 30969)

Certified in Financial
Forensics (CFF)

Certified Fraud Examiner
(CFE)

Certified Construction
Auditor (CCA)

Certified Global
Management Accountant
(CGMA)

EDUCATION

Masters of Business
Administration - University
of Pittsburgh

BS in Business
Administration - Duquesne
University

**PROFESSIONAL AND CIVIC
INVOLVEMENT**

Former Board Chair and
current Board Member,
MeckEd

Advisory Board Member,
University of New Haven,
Henry C. Lee College of
Criminal Justice and
Forensic Sciences

Erik is a Dixon Hughes Goodman LLP (DHG) partner and a member of DHG's Forensic and Valuation Services Practice. He has more than 25 years of experience serving clients across industry sectors. Prior to joining DHG, Erik spent more than 15 years with an international accounting firm where he served in a number of leadership roles, most recently as the National Managing Partner (U.S.) and Global Co-Leader for Forensic Advisory Services. He has also held senior financial management positions in the technology and construction sectors.

Recognized locally and nationally, Erik has served as an expert witness, arbitrator, court-appointed expert and leader for complex investigations. He has provided expert testimony regarding fraud, damages and the application of generally accepted accounting principles (GAAP) in numerous business disputes.

Erik has led investigations of financial statement fraud for public companies, corruption and kickback schemes (FCPA), health care billing fraud, and construction and real estate fraud. His investigations have led to financial restatements, criminal convictions, and successful recovery of losses from insurance companies and perpetrators.

His dedication to the profession was recognized when he was awarded the Dr. D. Larry Crumbley Award for Outstanding Service by Pfeiffer University. In addition, Erik serves on the advisory board for the Henry C. Lee College of Criminal Justice and Forensic Sciences at University of New Haven, and is a frequent speaker at professional events.

TESTIMONY HISTORY – Past 4 Years

Mattress Recycling Council California, LLC v. Eco-Modity, LLC d/b/a Blue Marble Materials; and AeroFund Financial, Inc.

- American Arbitration Association, Arbitration No. 01-18-0003-5297
- Rendered expert report dated, February 3, 2020

Federal Trade Commission v. Ecological Fox LLC et al.

- United States District Court for the District of Maryland Southern Division, No. 18-cv-03309-PJM
- Rendered expert report dated October 8, 2018
- Provided supplemental report dated February 26, 2019
- Provided deposition testimony on February 28, 2019
- Rendered expert testimony at preliminary injunction hearing on March 14, 2019
- Rendered expert testimony at trial on January 31, 2020

God's Little Gift, Inc. d/b/a Helium & Balloons Across America (A/K/A HABAA), and Gary Page v. Airgas, Inc.

- United States District Court for the Western District of North Carolina, Civil Action No. 3:17-ev-00004-FDW-DSC
- Rendered expert report dated, October 9, 2017

Primo Distribution, LLC v. Primo Water Corporation

- Arbitration No. 01-14-0001-1265
- Rendered expert report dated, January 14, 2017
- Provided expert report regarding damages in breach of contract, distribution termination matter.

Hongda Chemical USA, LLC and Hongda Group Limited, LLC v. Shangyu Sunfit Chemical Company, LTD and YMS Agriculture International Corp.; and Shangyu Sunfit Chemical Company, LTD v. Gary David McKnight; Raymond P. Perkins; Wei Xu; Eco Agro Resources LLC; Vasto Chemical Company, Inc.; and Kadi Resources LLC

- United States District Court for the Middle District of North Carolina, Greensboro Division; Case No. 1:12-CV-1146
- Rendered expert report dated December 16, 2016
- Provided expert report regarding damages in breach of contract matter.

The Moses H. Cone Memorial Hospital Operating Corporation d/b/a Cone Health v. Conifer Physician Services, Inc. f/k/a Springfield Service Corporation

- United States District Court Middle District of North Carolina, Case No. 13-cv-00651
- Rendered expert report dated, October 21, 2016
- Deposition testimony, November 21, 2016
- Provided expert report and deposition testimony regarding damages in breach of contract matter.

DS Services of America, Inc. and Primo Water Corporation v. Artesia Springs, LLC, HOD Enterprises, L.P. and John C. Cooke

- American Arbitration Association, Arbitration No. 01-15-0003-2518
- Expert report dated, March 25, 2016
- Testimony at arbitration, January 12, 2017
- Rendered expert report regarding damages in a breach of contract, distributor termination matter.

Tampa Park Apartments, Inc., a Florida Not-for-Profit Corporation v. Julian Castro, as Secretary of the United States Department of Housing and Urban Development

- United States District Court Middle District of Florida Tampa Division, Case No. 8:14-cv-1230-T-23AEP
- Rendered expert report, dated June 18, 2015
- Expert declaration, dated September 29, 2015
- Provided expert report and declaration in a loan servicing and accounting dispute.
- Expert testimony at trial, February 15-22, 2018.

CIVIC AND PROFESSIONAL ORGANIZATIONS

- Lecturer, Contemporary Issues in Forensic Accounting, Pfeiffer University, MBA Program, Fall 2013
- Board Member, MeckEd
- Charlotte Mayor's Efficient and Effective Government Task Force
- Charlotte-Mecklenburg Police Activities League – Former Board Chairman
- American Institute of Certified Public Accountants
- North Carolina Association of Certified Public Accountants
- Association of Certified Fraud Examiners (ACFE) and Former Board Member of the ACFE's Charlotte Chapter
- Institute of Internal Auditors, member

PUBLICATIONS AND SELECTED PRESENTATIONS

Planning Investigations in the New Normal, article published at DHG.com, April 2020

Planning Investigations in the New Normal, Part Two - Collecting and Preserving Evidence, article published at DHG.com, April 2020

Three Prong Strategy for Professional Services Firms to Thrive in the New Normal, article published at DHG.com, April 2020

Expense Management in the New Normal, article published at DHG.com, April 2020

Thriving in the New Normal, article published at DHG.com, March 2020

New Normal Means New Priorities for Chief Audit Executives, article published at DHG.com, March 2020

Health Care Fraud Check-up, joint presentation with Kurt C. Stakeman, NCACPA Health Care Conference, June 23, 2017

A Risk Based Approach to Reviewing Construction Projects, joint presentation with Scott Shaffer, UNC, Chapel Hill, May 10, 2017

Health Care Check-up!, joint presentation with Kurt C. Stakeman, NCACPA 2016 Fraud Conference, October 17, 2016

Solve the Problem: Avoid the Crisis, joint presentation with Claire Rauscher and Anne Tompkins, NACD conference, June 8, 2016

False Claims, Fraud and Abuse, panel moderator, McGuireWoods 10th Annual Healthcare Provider Conference, September 17, 2015

Red Flags of Construction Fraud, joint presentation with R. Cory Rogers, Pfeiffer University Fraud and Forensic Investigations Conference, June 10, 2015

Red Flags of Construction Fraud, joint presentation with Scott Shaffer, National Association of Construction Auditors Annual Conference, March 31, 2015

Keeping What Is Yours...Study of Recent Fraud Trends and How to Avoid Being a Victim, joint presentation with R. Cory Rogers, Grant Thornton Annual CPE Day, November 5, 2014

Corporate Investigations: 5 Fatal Flaws and How to Avoid Them, joint presentation with R. Cory Rogers, Pfeiffer University First Annual Fraud Conference, June 11, 2014

Internal Audit: The Front Lines of Fraud Detection and Deterrence, joint presentation with R. Cory Rogers of Grant Thornton to Bank of America Internal Audit Department, February 25, 2013

Timeless Fraud Schemes, joint presentation with R. Cory Rogers to the Charlotte Chapter of the Commercial Finance Association, January 29, 2013

What Does the Foreign Corrupt Practices Act (FCPA) Mean for Internal Auditors?, presentation to the Triad Chapter of the Institute of Internal Auditors, December 7, 2012

Real Estate Fraud - Everything You Ever Wanted to Know But Were Afraid to Ask, presentation to the Charlotte Chapter of the Association of Certified Fraud Examiners, September 22, 2011

Internal Investigations: Considerations for Auditors, Internal Auditors, Forensic Accountants and other Stakeholders, joint presentation with LT Lafferty, Esq., 2011 Fowler White Boggs CPE Extravaganza, May 4, 2011

Conducting Internal Investigations, presentation to the Institute of Internal Auditors, Greenville, SC Chapter, December 3, 2010

Construction Project Auditing, presentation to the Institute of Internal Auditors, Palmetto Chapter, December 15, 2009

Update and Overview of Managing the Business Risk of Fraud, presentation to the Charlotte Chapter of the Association of Certified Fraud Examiners, October 23, 2008

Managing Fraud Risk in a Slowing Economy, Top Ten Indicators of Fraud, presentation at the Grant Thornton LLP, Down Economy Symposium, July 8, 2008 (Raleigh) and September 25, 2008 (Greensboro)

Deal Indigestion – Avoiding Post Acquisition Disputes and Resolving Those You Can't, panel discussion, October 29, 2008 (Atlanta, GA) and November 18, 2008 (Charlotte, NC)

Detecting and Deterring Fraud, presentation to Blackbaud, Inc., December 18, 2007

Addressing and Managing Fraud Risk, presentation to Duke University, December 12, 2007 and to the Scott Insurance CFO Conference, December 14, 2007

Fraud and Closely Held Businesses, presentation to the Wake Forest Family Business Center, February 22, 2007

Recent Developments in Fraud for the Construction Industry, presentation to the Charlotte Chapter of the Construction Financial Management Association, November 14, 2006

The Not-So-Perfect Payday: Stock Option Backdating, Spring Loading and Bullet Dodging, presentation to the North Carolina Bankers Association, October 23, 2006

The Not-So-Perfect Payday: Stock Option Grant Practices and Problems, joint presentation with Alexander Donaldson, Esq., Wyrick Robbins Yates & Ponton LLP, August 16, 2006

Purchase Price Adjustment Mechanisms, Avoiding Disputes and Resolving Those You Didn't Avoid, joint presentation with Michael J. Ryan, Partner, Grant Thornton; Private Equity Conference hosted by CLE International, Charlotte, NC, November 17, 2005

Proactive Fraud Prevention, Biz Life Magazine, April 2005

Fraud Not Limited to Large Enterprises, Charlotte Business Journal, October 2004

WORK HISTORY

- **Dixon Hughes Goodman LLP, 2020 - Current**

Erik is a Dixon Hughes Goodman LLP (DHG) partner and member of DHG Forensics.

- **Grant Thornton LLP, 2004 - 2019, Admitted to Partnership 2007**

Erik most recently was a Grant Thornton LLP Partner and served as the National Managing Partner for Forensic Advisory Services.

- **Pascarella & Wiker, LLP, Senior Consultant, 2001 - 2004**

Provided forensic accounting, due diligence, bankruptcy and other financial advisory services.

- **North America Telecommunications Corporation, Chief Financial Officer, 2001**

Served as CFO of distressed construction subcontractor. During tenure, initiated cost reduction plan including major reduction in force and conversion to union represented work force.

- **Rapidigm, Inc., Financial Analyst, 1999 - 2001**

Reported to Vice President of Corporate Development and Treasurer. Responsibilities included evaluating acquisition candidates, performing due diligence and acquisition integration.

- **Innovative Systems, Inc., Controller, 1997 - 1999**

Responsible for financial reporting, management reporting, tax planning and compliance for closely held software and consulting firm.

- **Price Waterhouse LLP, Senior Consultant, 1993 - 1997**

Provided audit and tax services to clients including Fortune 500 corporations and high growth technology companies.

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
RICHMOND DIVISION

UNITED STATES OF AMERICA and the
COMMONWEALTH OF VIRGINIA,

Plaintiffs,

V.

VIRGINIA ELECTRIC AND POWER
COMPANY (d/b/a DOMINION ENERGY
VIRGINIA)

Defendant.

Civil Action No. 3:20-cv-177

COMPLAINT

The United States of America (“United States”), by authority of the Attorney General of the United States and on behalf of the United States Environmental Protection Agency (“EPA”), and the Commonwealth of Virginia, on behalf of the Virginia Department of Environmental Quality (“VADEQ”) (collectively “Plaintiffs”) file this Complaint and allege as follows:

INTRODUCTION

1. This is a civil action for assessment of civil penalties and injunctive relief brought against Defendant Virginia Electric and Power Company (d/b/a Dominion Energy Virginia) (“Defendant” or “Dominion”) pursuant to the following statutes: (a) the Federal Water Pollution Control Act (“Clean Water Act” or “CWA”) and the Virginia State Water Control Law (“SWCL”) for violations of conditions and limitations of National Pollutant Discharge Elimination System (“NPDES”) permits issued to Dominion at certain of Defendant’s steam electric power generation facilities in Virginia and West Virginia; (b) the SWCL for unpermitted discharges of industrial waste or other waste to State waters via seeps at the Chesterfield Power Station Facility in violation of Va. Code § 62.1-44.5; and (c) the Emergency Planning and Community Right-to-Know Act

(“EPCRA”) and the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) for violations of the hazardous substance release notification requirements at Defendant’s steam electric power generation facilities in Virginia and West Virginia.

JURISDICTION AND VENUE

2. This Court has jurisdiction over the subject matter of this action under Section 309(b) of the CWA, 33 U.S.C. § 1319(b), Section 109(c) of CERCLA, 42 U.S.C. § 9609(c), and 28 U.S.C. §§ 1331, 1345, and 1355. Pursuant to 28 U.S.C. § 1367(a), this Court has supplemental jurisdiction over the state law claims of the Commonwealth of Virginia because they are related to the federal law claims and form a portion of the same case or controversy.

3. Venue is proper in the Eastern District of Virginia pursuant to 28 U.S.C. §§ 1391(b)(2) and (c)(2) and 1395(a), as well as Section 309(b) of the CWA, 33 U.S.C. § 1319(b) and Section 109(c) of CERCLA, 42 U.S.C. § 9609(c), because it is the judicial district in which Defendant is located, is doing business, and in which a substantial part of the alleged violations in the Complaint occurred.

4. Notice of the action’s commencement has been provided to the Commonwealth of Virginia and the State of West Virginia in accordance with Section 309(b) of the CWA, 33 U.S.C. § 1319(b).

DEFENDANT

5. Virginia Electric and Power Company (d/b/a Dominion Energy Virginia) is a corporation with its principal place of business in Richmond, Virginia. Virginia Electric Power Company is a wholly owned subsidiary of Dominion Energy, Inc.

6. During the time period relevant to the claims in this Complaint, Defendant owned and operated the facilities subject to this Complaint.

STATUTORY FRAMEWORK

I. Clean Water Act

Statutory Background

7. Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the “discharge of any pollutant by any person” to waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

8. Section 502(5) of the CWA, 33 U.S.C. § 1362(5), defines “person” as, *inter alia*, an “individual, corporation, partnership, [or] association.”

9. Section 502(12) of the CWA, 33 U.S.C. § 1362(12), defines the term “discharge of a pollutant” as, *inter alia*, “any addition of any pollutant to navigable waters from any point source.”

10. Section 502(6) of the CWA, 33 U.S.C. § 1362(6), defines “pollutant” to include a wide range of materials, including solid waste, rock, sand, and industrial waste.

11. Section 502(14) of the CWA, 33 U.S.C. § 1362(14), defines “point source” as any “discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, [or] container . . . from which pollutants are or may be discharged.”

12. Section 502(7) of the CWA, 33 U.S.C. § 1362(7), defines “navigable waters” as “the waters of the United States, including the territorial seas.”

NPDES Permit Program

13. Under Section 402(a) of the CWA, 33 U.S.C. § 1342(a), EPA has the authority to issue an NPDES permit “for the discharge of any pollutant” to waters of the United States if “such discharge will meet . . . all applicable requirements” of the CWA and other conditions that the

permitting authority determines necessary to implement the CWA.

14. A state may administer its own NPDES permit program with EPA's approval. *See* 33 U.S.C. § 1342(b).

15. The Commonwealth of Virginia has been authorized by EPA to administer an NPDES program for regulating the discharges of pollutants to navigable waters within the state's jurisdiction. 40 Fed. Reg. 20129 (May 8, 1975). The Commonwealth of Virginia, through the State Water Control Board is authorized to issue, amend, revoke and enforce NPDES permits in the Commonwealth of Virginia in accordance with the SWCL. Va. Code § 62.1-44.15(5).

16. The State of West Virginia has been authorized by EPA to administer an NPDES program for regulating the discharges of pollutants to navigable waters within the state's jurisdiction. 47 Fed. Reg. 22363 (May 24, 1982). The West Virginia Department of Environmental Protection ("WVDEP") is authorized to issue NPDES permits in accordance with the West Virginia Water Pollution Control Act ("WPCA"). W. Va. Code § 22-11-8.

17. EPA's approval of Virginia's and West Virginia's programs does not affect its authority to enforce the CWA or to enforce a state-issued NPDES permit. *See* 33 U.S.C. § 1342(i).

18. A "permit" is "an authorization, license, or equivalent control document issued by EPA or an 'approved State' to implement the requirements of [the CWA]." 40 C.F.R. § 122.2 (definitions).

19. An NPDES permit typically contains, among other things, effluent limitations, water quality standards, monitoring and reporting requirements, standard conditions applicable to all permits, and special conditions where appropriate. *See* 40 C.F.R. §§ 122.41-122.50 (NPDES permit conditions).

20. Effluent limitations, as defined in Section 502(11) of the CWA, 33 U.S.C. § 1362(11), are restrictions on quantity, rate, and concentration of chemical, physical, biological,

and other constituents which are discharged from point sources. 33 U.S.C. § 1362(11); *see also* 9 VAC 25-31-10.

NPDES Stormwater Permits

21. Section 402(p) of the CWA, 33 U.S.C. § 1342(p), and 40 C.F.R. § 122.26(a)(1)(ii) require stormwater discharges associated with industrial activity to comply with all applicable provisions of Section 301 of the CWA, 33 U.S.C. § 1311.

22. Under EPA's regulations, any person who discharges or who proposes to discharge stormwater associated with industrial activity or small construction activity is required to apply for an individual permit or to seek coverage under a promulgated stormwater general permit. *See* 40 C.F.R. §§ 122.21(a), 122.26(c), 122.28, 123.25.

23. Pursuant to 40 C.F.R. § 122.26(b)(14)(vii), steam electric power generating facilities, including coal handling sites, are considered to be engaging in industrial activities.

24. Pursuant to 40 C.F.R. § 122.26(b)(14)(x), industrial activity for which associated stormwater discharges require a Section 402 permit includes construction activity that disturbs five acres or more of total land area. Construction activity includes "clearing, grading, and excavation."

Enforcement

25. Section 309(b) of the CWA, 33 U.S.C. § 1319(b), authorizes the United States to commence a civil action for appropriate relief, including a permanent or temporary injunction, against any person who violates any permit condition or limitation in a permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

26. Pursuant to Section 309(d) of the CWA, 33 U.S.C. § 1319(d), and EPA's 2013 and 2019 Civil Monetary Penalty Inflation Adjustment Rules, 78 Fed. Reg. 66643 (Nov. 6, 2013) and 84 Fed. Reg. 2056 (Feb. 6, 2019), codified at 40 C.F.R. § 19.4, any person who violates any condition or limitation contained in a NPDES permit issued pursuant to Section 402 of the CWA,

33 U.S.C. § 1342, shall be subject to a civil penalty not to exceed \$37,500 per day for each violation that occurred after January 12, 2009 through November 2, 2015; and not to exceed \$54,833 per day for each violation which takes place after November 2, 2015.

II. The Virginia State Water Control Law

27. It is a violation of the SWCL for any “person” to discharge “industrial wastes” or “other wastes” into “state waters” except in compliance with a Virginia NPDES permit. Va. Code § 62.1-44.5(A)(1).

28. In addition, it is a violation of the SWCL for any “person” to discharge “stormwater” into “state waters” from “land disturbing activities” except in compliance with a Virginia NPDES permit. Va. Code § 62.1-44.5(A)(5).

29. The SWCL defines “person” as “an individual, corporation, partnership, association, governmental body, municipal corporation, or any other legal entity.” Va. Code § 62.1-44.3.

30. The SWCL defines “industrial waste” as “liquid or other wastes resulting from any process of industry, manufacture, trade, or business or from the development of any natural resources.” Va. Code § 62.1-44.3.

31. The SWCL defines “other waste” as “decayed wood, sawdust, shavings, bark, lime, garbage, refuse, ashes, offal, tar, oil, chemicals, and all other substances except industrial wastes and sewage which may cause pollution in any state waters.” Va. Code § 62.1-44.3.

32. The SWCL defines “state waters” as “all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.” Va. Code § 62.1-44.3.

33. Va. Code § 62.1-44.15(10) authorizes the State Water Control Board to “adopt such regulations as it deems necessary to enforce the general water quality management program in . .

. the Commonwealth.”

34. Va. Code § 62.1-44.23 authorizes Virginia to commence a civil action for injunctive relief to compel compliance with the terms or conditions of a valid NPDES permit and the SWCL. *See* Va. Code § 62.1-44.23.

35. “Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.” Va. Code § 62.1-44.32.

III. EPCRA and CERCLA

36. Section 329(7) of EPCRA, 42 U.S.C. § 11049(7), and Section 101(21) of CERCLA, 42 U.S.C. § 9601, each define a “person” as including a corporation.

37. Section 103(a) of CERCLA states that “[a]ny person in charge of . . . an . . . onshore facility shall, as soon as he has knowledge of any release. . . of a hazardous substance . . . in quantities equal to or greater than those determined pursuant to [section 102 of CERCLA], immediately notify the National Response Center [(“NRC”).]” 42 U.S.C. § 9603(a).

38. Section 102 of CERCLA, 42 U.S.C. § 9602, directs the Administrator of EPA to promulgate regulations designating hazardous substances and establishing reportable quantities for those hazardous substances. EPA’s list of hazardous substances and reportable quantities is set forth at 40 C.F.R. § 302.4. Ammonia is included in this list.

39. Section 109(c) of CERCLA provides as follows:

The President may bring an action in the United States district court for the appropriate district to assess and collect a penalty of not more than \$25,000 per day for each day during which the violation (or failure or refusal) continues in the case of . . . (1) A violation of the notice requirements of section 9603(a) . . . of this title. . . . In the case of a second or subsequent violation (or failure or refusal), the amount of such penalty may be not more

than \$75,000 for each day during which the violation (or failure or refusal) continues.

42 U.S.C. § 9609(c).

40. Section 302 of EPCRA, 42 U.S.C. § 11002, requires EPA to publish a list of extremely hazardous substances, and to identify a “reportable quantity” for each such substance. EPA’s list of extremely hazardous substances and their reportable quantities is set forth at 40 C.F.R. Part 355, Appendices A and B. Ammonia is included in this list and has a reportable quantity of 100 pounds.

41. Section 304 of EPCRA, 42 U.S.C. § 11004, and the regulation set forth at 40 C.F.R. § 355.33, require the owner or operator of a facility at which a hazardous chemical is produced, used, or stored to notify certain government authorities when there is a release of a reportable quantity of an extremely hazardous substance or CERCLA hazardous substance. Specifically, Section 304(b) of EPCRA requires that the owner and operator immediately notify the State Emergency Response Commission (“SERC”) of any State likely to be affected by the release and the emergency coordinator for the Local Emergency Planning Committee (“LEPC”) for any area likely to be affected by the release. Additionally, Section 304(c) requires the owner/operator to submit, as soon as practicable, a written emergency follow-up notice updating the information required under Section 304(b).

42. Pursuant to Section 325(b)(3) of EPCRA, 42 U.S.C. § 11045(b)(3), and Section 109(c) of CERCLA, 42 U.S.C. § 9609(c), and EPA’s 2013 and 2019 Civil Monetary Penalty Inflation Adjustment Rules, 78 Fed. Reg. 66643 (Nov. 6, 2013), and 84 Fed. Reg. 2056 (Feb. 6, 2019), codified at 40 C.F.R. § 19.4, any person who violates a reporting requirement of Section 304 of EPCRA, 42 U.S.C. § 11004, or Section 103 of CERCLA, 42 U.S.C. § 9603, shall be subject to a civil penalty not to exceed \$37,500 per day for each violation that occurred after January 12, 2009 through November 2, 2015; and not to exceed \$57,317 per day for each violation which takes

place after November 2, 2015.

GENERAL ALLEGATIONS

43. The Defendant is a “person” within the meaning of 33 U.S.C. § 1362(5), 42 U.S.C. § 9601, 42 U.S.C. § 11049(7), and Va. Code § 62.1-44.3.

44. At all relevant times, Defendant did business in Virginia and West Virginia.

45. Defendant owns and/or operates the steam electric power generation facilities and associated construction sites listed in Exhibits 1-6 that are subject to the allegations included in this Complaint (the “Facilities”).

46. As a result of its power generation and construction operations at the Facilities, Defendant generates coal ash, wastewater, sediment, and other excess materials that are, or contain, various “pollutants” as that term is defined in 33 U.S.C. § 1362(6), 40 C.F.R. § 122.2, and 9 VAC 25-31-10. These pollutants include rock, sand, total ammonia nitrogen, total petroleum hydrocarbons, total recoverable manganese, total suspended solids, and other pollutants associated with coal ash discharge (“coal ash contact water”), which includes aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chloride, chromium III, chromium IV, cobalt, copper, iron, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

CLAIM ONE FOR RELIEF **(Violations of NPDES Construction Stormwater Permits)**

47. Plaintiffs reallege and incorporate by reference all other paragraphs of this Complaint as if fully set forth herein.

48. Defendant owns and/or operates the facilities engaged in construction activity that are subject to NPDES construction stormwater permits issued by Virginia listed in Exhibit 1.

49. Each of the NPDES construction stormwater permits identified in Exhibit 1 include, *inter alia*, conditions that require Defendant to implement a Stormwater Pollution Prevention Plan

(“SWPPP”), install and maintain best management practices (“BMPs”), and conduct self-inspections at subject sites.

50. As set forth in Exhibit 1, Defendant has violated applicable NPDES construction stormwater permits, primarily due to failure to implement and maintain erosion control measures.

51. Each failure to adequately implement NPDES permit conditions identified in Exhibit 1 is a violation of the applicable NPDES permits issued under Section 402 of the CWA, 33 U.S.C. § 1342.

52. Defendant’s violations of conditions contained in the applicable NPDES permits also constitute violations of Va. Code § 62.1-44.5.

53. Unless enjoined, Defendant’s violations are likely to continue.

54. Pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and Va. Code § 62.1-44.23, Defendant is liable for injunctive relief.

55. Pursuant to Section 309(d) of the CWA, 33 U.S.C. § 1319(d), Defendant is liable for civil penalties of up to \$37,500 per day for each violation occurring on or after January 12, 2009 through November 2, 2015, and \$54,833 per day for each violation that occurred after November 2, 2015.

56. “Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.” Va. Code § 62.1-44.32.

CLAIM TWO FOR RELIEF
(Violations of NPDES Permit Effluent Limitations)

57. Plaintiffs reallege and incorporate by reference all other paragraphs of this

Complaint as if fully set forth herein.

58. Defendant owns and/or operates the power generation facilities that are subject to NPDES permits issued by Virginia or West Virginia listed in Exhibit 2.

59. The NPDES permits identified in Exhibit 2 include effluent limitations for, *inter alia*, total suspended solids, total petroleum hydrocarbons, total recoverable manganese, and total ammonia nitrogen. *See* Exhibit 2.

60. These NPDES permits also impose self-monitoring and self-reporting requirements, including submission to the permitting authorities of discharge monitoring reports (“DMRs”), which summarize discharge monitoring data and indicate non-compliance with permit limits.

61. Based on DMRs submitted to state permitting authorities and certified information provided by Defendant in response to information requests issued by EPA pursuant to Section 308 of the CWA, 33 U.S.C. § 1318, Defendant has exceeded effluent limitations in applicable NPDES permits on at least eight occasions. *See* Exhibit 2

62. Each exceedance identified in Exhibit 2 is a violation of the applicable NPDES permits issued under Section 402 of the CWA, 33 U.S.C. § 1342.

63. Defendant’s discharges of pollutants in excess of effluent limitations contained in the applicable NPDES permits issued by Virginia also constitute violations of Va. Code § 62.1-44.5.

64. Unless enjoined, Defendant’s violations are likely to continue.

65. Pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and Va. Code § 62.1-44.23, Defendant is liable for injunctive relief.

66. Pursuant to Section 309(d) of the CWA, 33 U.S.C. § 1319(d), Defendant is liable for civil penalties of up to \$37,500 per day for each violation occurring on or after January 12,

2009 through November 2, 2015, and \$54,833 per day for each violation that occurred after November 2, 2015.

67. “Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.” Va. Code § 62.1-44.32.

CLAIM THREE FOR RELIEF
(Violation of NPDES Permit Notice Condition)

68. Plaintiffs reallege and incorporate by reference all other paragraphs of this Complaint as if fully set forth herein.

69. Defendant owns and operates the Possum Point Facility in Virginia. In 2015, the Facility was subject to NPDES Permit VA0002071, issued in 2013 (the “2013 Possum Point Permit”).

70. The 2013 Possum Point Permit authorized discharge from Outfall 005 Ash Pond E consistent with and according to the specific requirements and obligations set forth in Part II(J) and required advance notice to VADEQ before making certain changes to the facility that might affect discharges.

71. Discharges from Outfall 005 authorized by the 2013 Possum Point Permit occur by skimming effluent from the top of the impoundment pond after sufficient time is allowed for adequate settlement of pollutants.

72. From on or about March 25, 2015, through April 28, 2015, Defendant conducted dewatering activities intended to remove stored water from Ash Pond E to facilitate its eventual RCRA Coal Combustion Residuals (“CCR”) closure (the “Ash Pond E Dewatering”). *See* Exhibit

3.

73. During this time period, Defendant's actions resulted in the net removal of an estimated volume of 27.5 million gallons of impoundment water from Ash Pond E by discharge at Outfall 005.

74. The Ash Pond E Dewatering was achieved by lowering the elevation of the decant structure of Outfall 005 by the removal of stoplogs.

75. This treatment structure alteration resulted in a potential increase in the nature or quantity of pollutants being discharged.

76. Defendant did not provide specific advance notification to VADEQ before commencing the Ash Pond E Dewatering.

77. Failure to provide specific advance notification to VADEQ precluded VADEQ from: (a) considering whether such proposed discharges would be protective of the receiving water quality and otherwise appropriate, and (b) exercising its authority as appropriate to require additional monitoring, treatment, or other precautions.

78. VADEQ modified the 2013 Possum Point Permit in January 2016 ("2016 Modified Permit") to allow for dewatering activities at Possum Point in preparation of meeting the requirements of the CCR closure rule. The 2016 Modified Permit included effluent limits for a greater number of pollutants.

79. Defendant's failure to provide specific advance notification of the Ash Pond E Dewatering to VADEQ is a violation of the applicable NPDES permit issued under Section 402 of the CWA, 33 U.S.C. § 1342.

80. Violating a condition in the applicable NPDES permit also constitutes violation of Va. Code § 62.1-44.5.

81. Unless enjoined, Defendant's violations are likely to continue.

82. Pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and Va. Code § 62.1-44.23, Defendant is liable for injunctive relief.

83. Pursuant to Section 309(d) of the CWA, 33 U.S.C. § 1319(d), Defendant is liable for civil penalties of up to \$37,500 per day for each violation occurring on or after January 12, 2009 through November 2, 2015, and \$54,833 per day for each violation that occurred after November 2, 2015.

84. “Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.” Va. Code § 62.1-44.32.

CLAIM FOUR FOR RELIEF
(Violation of NPDES Permit Discharge Prohibition)

85. Plaintiffs reallege and incorporate by reference all other paragraphs of this Complaint as if fully set forth herein.

86. Defendant owns and/or operates the facilities subject to NPDES permits issued by Virginia listed in Exhibit 4.

87. Each NPDES permit identified in Exhibit 4 prohibits discharges from the facility into state waters or that affect state waters, where the discharges are not authorized by a permit.

88. Exhibit 4 lists eight discharges of pollutants at Defendants’ permitted facilities that were not authorized by the applicable permit.

89. Each unauthorized discharge of pollutants identified in Exhibit 4 is a violation of the applicable NPDES permit issued under Section 402 of the CWA, 33 U.S.C. § 1342.

90. Violating a condition in the applicable NPDES permit also constitutes violation of

Va. Code § 62.1-44.5.

91. Unless enjoined, Defendant's violations will continue.

92. Pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and Va. Code § 62.1-44.23, Defendant is liable for injunctive relief.

93. Pursuant to Section 309(d) of the CWA, 33 U.S.C. § 1319(d), Defendant is liable for civil penalties of up to \$37,500 per day for each violation occurring on or after January 12, 2009 through November 2, 2015, and \$54,833 per day for each violation that occurred after November 2, 2015.

94. "Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense." Va. Code § 62.1-44.32.

CLAIM FIVE FOR RELIEF
(VADEQ Only SWCL Violations)

95. Plaintiff VADEQ realleges and incorporates by reference all other paragraphs of this Complaint related to its VADEQ only SWCL Claims as if fully set forth herein. VADEQ makes the following allegations in support of alleged state only SWCL violations at the Chesterfield Power Station, as described in Exhibit 5.

96. On July 21, 2017, the Virginia Department of Game and Inland Fisheries ("DGIF") identified an area of groundwater seepage along the James River shoreline adjacent to Defendant's Chesterfield Power Station and subsequently notified both VADEQ and Defendant of the same.

97. Defendant investigated and later determined that the groundwater seepage identified by DGIF, which contained elevated concentrations of constituents and was daylighting

to the James River, originated from an existing coal pile (“Eastern Shoreline Seeps”).

98. On May 11, 2018, Defendant self-reported to VADEQ its observation, at low tide, of a small area of groundwater seepage south of a coal ash impoundment (“Upper Ash Pond Seeps”) at the Chesterfield Power Station, which contained elevated concentrations of constituents and was daylighting along the James River shoreline.

99. Defendant has taken actions, with VADEQ’s direction and approval, to characterize and mitigate the Eastern Shoreline Seeps, including installation of a groundwater interceptor trench and collection system, which was completed in April 2019.

100. Each unauthorized discharge of pollutants without an NPDES permit is a violation of Va. Code § 62.1-44.5.

101. Unless enjoined, Defendant’s violations will continue.

102. Pursuant to Va. Code § 62.1-44.23, Defendant is liable for injunctive relief.

103. “Except as otherwise provided in [the SWCL], any person who violates any provision of [the SWCL], or who fails, neglects, or refuses to comply with any order of the Board, or order of a court, issued as herein provided, shall be subject to a civil penalty not to exceed \$32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.” Va. Code § 62.1-44.32.

CLAIM SIX FOR RELIEF
(Federal Only EPCRA Violations)

104. Plaintiff the United States realleges and incorporates by reference all other paragraphs of this Complaint related to its federal Claims as if fully set forth herein.

105. At all times relevant to this Complaint, Defendant owned and operated the Bellemeade Power Station in Richmond, Virginia (“Bellemeade”) and the Mt. Storm Power Station in West Virginia (“Mt. Storm”) that are the subject of this action within the meaning of

Section 304 of EPCRA, 42 U.S.C. § 11004. *See* Exhibit 6.

106. The Bellemeade and Mt. Storm facilities are “facilities” within the meaning of Section 329(4) of EPCRA, 42 U.S.C. § 11049(4).

107. The Bellemeade and Mt. Storm facilities produce, use, or store ammonia, which is an extremely hazardous substance within the meaning of Section 329(3) of EPCRA, 42 U.S.C. § 11049(3).

108. Ammonia has a reportable quantity of 100 pounds. 40 C.F.R. § 302.4; 40 C.F.R. Part 355, Appendices A and B.

109. On November 26, 2015, the Bellemeade Facility released at least 220 pounds of ammonia into the environment (the “Bellemeade Release”).

110. Defendant did not immediately report the Bellemeade Release to the SERC or LEPC, but rather reported the Release to the respective authorities after four days and 15 hours.

111. On March 15, 2017, the Mt. Storm Facility released at least 383 pounds of ammonia into the environment (the “Mt. Storm Release”).

112. Defendant did not immediately report the Mt. Storm Release to the SERC or LEPC, but rather reported the Release to the respective authorities after over 13 hours.

113. Pursuant to Section 304(b) of EPCRA, 42 U.S.C. § 11004, and the regulation set forth at 40 C.F.R. Part 355, Subpart C, Defendant was required to immediately notify the SERC and the LEPC of a release equal to or greater than the reportable quantity of any EPCRA extremely hazardous substance or CERCLA hazardous substances.

114. Each failure to provide timely notification of these releases described above is a separate violation of Section 304(b) of EPCRA, 42 U.S.C. § 11004(b).

115. Pursuant to Section 325(b)(3) of EPCRA, 42 U.S.C. § 11045(b)(3), Defendant is liable for civil penalties of up to \$37,500 per day for each violation for all violations occurring on

or after January 12, 2009 through November 2, 2015, and \$57,317 per day for each violation that occurred after November 2, 2015.

CLAIM SEVEN FOR RELIEF
(Federal Only CERCLA Violations)

116. Plaintiff the United States realleges and incorporates by reference all other paragraphs of this Complaint related to its federal claims as if fully set forth herein.

117. At all times relevant to this Complaint, Defendant owned and operated the Bellemeade and Mt. Storm facilities within the meaning of Section 103 of CERCLA, 42 U.S.C. § 9603. *See* Exhibit 6.

118. The Bellemeade and Mt. Storm facilities are “onshore facilities” within the meaning of Section 101(18) of CERCLA, 42 U.S.C. § 9601(18), and 40 C.F.R. § 302.3.

119. The Bellemeade and Mt. Storm facilities produce, use, or store ammonia, which is a hazardous substance within the meaning of CERCLA Section 103(c), 42 U.S.C. § 9603(c).

120. Ammonia has a reportable quantity of 100 pounds. 40 C.F.R. § 302.4.

121. As summarized in Exhibit 6, and described above, Defendant failed to immediately notify the NRC of the Bellemeade Release and the Mt. Storm Release of reportable quantities of ammonia.

122. Each failure to immediately notify the NRC of these releases is a separate violation of Section 103(a) of CERCLA, 42 U.S.C. § 9603(a).

123. Pursuant to Section 109 of CERCLA, 42 U.S.C. § 9609(a), Defendant is liable for civil penalties of up to \$37,500 per day for each violation for all violations occurring on or after January 12, 2009 through November 2, 2015, and \$57,317 per day for each violation that occurred after November 2, 2015.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs, the United States of America and the Commonwealth of Virginia respectfully pray that this Court:

1. Permanently enjoin Defendant from discharging pollutants except as expressly authorized by the CWA and the limitations and conditions of applicable NPDES permits.
2. Order Defendant to take all necessary steps to comply with the CWA, SWCL, EPCRA/CERCLA, and the implementing regulations for those statutes, as well as with the limitations and conditions of the applicable NPDES permits.
3. Assess civil penalties against Defendant up to \$37,500 per day for each violation of the CWA that occurred on or after January 12, 2009 through November 2, 2015, and up to \$54,833 per day for each violation of the CWA that occurred after November 2, 2015.
4. Assess civil penalties against Defendant of up to \$32,500 per day for each day of violation in the Commonwealth of Virginia pursuant to Va. Code § 62.1-44.32.
5. Assess civil penalties against Defendant up to \$37,500 per day for each violation of the EPCRA that occurred on or after January 12, 2009 through November 2, 2015, and up to \$57,317 per day for each violation of the EPCRA that occurred after November 2, 2015.
6. Assess civil penalties against Defendant up to \$37,500 per day for each violation of the CERCLA that occurred on or after January 12, 2009 through November 2, 2015, and up to \$57,317 per day for each violation of the CERCLA that occurred after November 2, 2015.
7. Grant such other relief as the Court may deem appropriate.

Respectfully submitted,

FOR THE UNITED STATES OF AMERICA

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FOR THE UNITED STATES OF AMERICA

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EXHIBIT 1
Violations of NPDES Construction Stormwater Permits

Dominion Site	Permit Number	Violation Description
Bremo Pond Closure	VAR-10H875	VADEQ inspection report dated 4/4/16 identifies deficiencies with the operation and/or maintenance of BMPs.
Louisa Solar	VAR-10I424	VADEQ inspection reports dated 9/27/16 and 10/6/16 identify deficiencies with the operation and/or maintenance of BMPs.
Liberty Station	VAR-108818	EPA report dated 6/14/16 identifies deficiencies with the operation and/or maintenance of BMPs and with the corrective action implementation.
Scott Solar	VAR-10I027	VADEQ inspection reports dated 8/11/16 and 9/29/16 and 12/12/16 identify deficiencies with the operation and/or maintenance of BMPs and with the SWPP.
Brunswick Power Station	VAR100578	Dominion self-inspection reports pertaining to “Location A” identify deficiencies with the operation and/or maintenance of BMPs and with the corrective action implementation from 1/6/14-5/12/15.
Brunswick Power Station	VAR100578	Dominion self-inspection reports pertaining to “Location B” identify deficiencies with the operation and/or maintenance of BMPs and with the corrective action implementation from 1/6/14-12/29/14.
Brunswick Power Station	VAR100578	Dominion self-inspection reports pertaining to “Location C” identify deficiencies with the operation and/or maintenance of BMPs and with the corrective action implementation from 8/29/14-4/10/15.
Hollymead	VAR-100076	From July through September of 2014, inspection reports show multiple Corrective Actions that are not timely implemented, BMP compliance concerns and that the site is not in compliance with the SWPPP.

EXHIBIT 2
Violations of NPDES Permit Effluent Limitations

Dominion Site	Permit Number	Violation Description	Date	Limit	Result
Chesapeake Energy Center	VA0004081	Effluent Violation – Total Suspended Solids Outfall 002	04/06/2016	50 mg/l	56 mg/l
Chesterfield Power Station	VAG830470	Effluent Violation – Total Petroleum Hydrocarbons Outfall 001	04/07/2015	15 mg/l	60 mg/l
Chesterfield Power Station	VA0004146	Permit Limit-Total Recoverable Selenium-Quantification Level	03/10/2017		
Clover Power Station	VA0083097	Effluent Violation – Total Recoverable Manganese Outfall 009	12/12/2013	50 ug/l	59.65 ug/l
Clover Power Station	VA0083097	Effluent Violation – Total Suspended Solids Outfall 002	3/31/2014	50 mg/l	176.5 mg/l
Mt. Storm Power Station	WV0005525	Effluent Violation – Total Ammonia Nitrogen Outfall 421	3/23/2016	15 mg/l	24.5 mg/l
Mt. Storm Power Station	WV0005525	Effluent Violation – Total Ammonia Nitrogen Outfall 421	3/23/2016	30 mg/l	36.1 mg/l
Altavista Power Station	VA0083402	Effluent Violation – pH Outfall 001	3/10/2016	9.0	9.73

EXHIBIT 3
Violation of NPDES Permit Notice Condition

Dominion Site	Permit Number	Violation Description
Possum Point Power Station	VA0002071	Failure to notify prior to initiating permitted dewatering of Pond E-discharges from Pond E were permitted but Dominion failed to properly provide advance notice to VADEQ prior to the March 25, 2015 through April 28, 2015 dewatering activities intended to remove stored water from coal ash pond E to facilitate it eventual closure, as required by Part II(J) of the 2013 Possum Point NPDES Permit

EXHIBIT 4
Violation of NPDES Permit Discharge Prohibition

Dominion Site	Permit Number	Violation Description
Possum Point Power Station	VA0002071	Unpermitted/Unauthorized discharges from Pond C through point source from at least March 2014 through May 2015
Chesterfield Power Station	VA0004146	On or about July 5, 2017, Defendant experienced an unpermitted discharge of an estimated 277,000 gallons of liquid from the Coal Pile Runoff Pond, which consisted of stormwater overflow comingled with coal fines.
Clover Power Station	VA0083097	Unpermitted discharge of stormwater comingled with coal fines from coal pile/limestone runoff basin, May 19, 2018.
Bath County Power station	VA0053317	Unpermitted discharge of an estimated 3 gallons of hydraulic oil on August 15, 2016.
Chesterfield Power Station	VA0004146	Unpermitted discharge of approximately 5 gallons of hydraulic fluid on January 5, 2018.
Chesterfield Power Station	VA0004146	Unpermitted discharge of turbine lube oil as observed on October 25, 26 and November 1, 2017.
Chesterfield Power Station	VA0004146	Unpermitted discharge of stormwater comingled with coal fines from Coal Pile Runoff Pond, September 28 and 29, 2016.
Chesterfield Power Station	VA0004146 VWP10-1787	Unauthorized discharges of sediment from construction activities during August 2017.

EXHIBIT 5
VADEQ Only SWCL Violations

Dominion Site	Statutory Provision	Violation Description	Receiving Water
Chesterfield Power Station	Va. Code § 62.1-44.5	Groundwater seepage daylighting along the James River shoreline which originated from the coal pile area, first identified on July 21, 2017.	James River
Chesterfield Power Station	Va. Code § 62.1-44.5	Groundwater seepage daylighting along the James River shoreline which originated from the coal ash impoundment, first reported on May 11, 2018.	James River

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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

UNITED STATES OF AMERICA and the COMMONWEALTH)
OF VIRGINIA,)

Plaintiffs,)

v.)

VIRGINIA ELECTRIC AND POWER COMPANY (d/b/a)
DOMINION ENERGY VIRGINIA))

Defendant.)

CONSENT DECREE

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I. BACKGROUND

A. Concurrent with the Date of Lodging of this Consent Decree, Plaintiffs, the United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), and the Commonwealth of Virginia, by and through the Department of Environmental Quality (“DEQ” or the “State”) have filed a Complaint in this action against Defendant Virginia Electric and Power Company (d/b/a Dominion Energy Virginia) (“Defendant” or “Dominion”) pursuant to the following statutes: (1) Sections 309(b) and (d) of the Federal Water Pollution Control Act (“Clean Water Act” or “CWA”), 33 U.S.C. §§ 1319(b), and (d); and, (2) the Virginia State Water Control Law (“SWCL”), Va. Code §§ 62.1-44.2 through 62.1-44.34:28. The Complaint alleges that the Defendant has violated the CWA and SWCL, including conditions and limitations of National Pollutant Discharge Elimination System (“NPDES”) permits issued to them by the State pursuant to the EPA-approved permit program under Section 402 of the CWA, 33 U.S.C. § 1342, and Va. Code § 62.1-44.15. The Complaint also alleges State only violations under the SWCL at one of Defendant’s Facilities. Additionally, the Complaint alleges Federal only violations at two of Defendant’s Facilities, under Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. § 9603, and Section 304 of the Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42 U.S.C. § 11004, by failing to immediately report releases of reportable quantities (“RQ”) of a CERCLA hazardous substance and EPCRA extremely hazardous substance (“EHS”) into the environment.

B. Defendant does not admit any liability to the United States, the State, any governmental body, or any other organization or person arising out of the transactions or

occurrences alleged in the Complaint nor does Defendant admit any fact or legal conclusion alleged in the Complaint.

C. Defendant, with the assistance of an environmental management system (“EMS”) consultant (“EMS Consultant”), has developed a companywide EMS, embodied in an EMS Manual, which Defendant submitted to Plaintiffs on February 23, 2018. Plaintiffs reviewed the EMS Manual and supporting documents, and EPA, after consultation with the State, notified Defendant that the EMS Manual was consistent with EPA’s “Compliance Focused Environmental Management System Enforcement Agreement Guidance” (“EPA EMS Guidance”) (Appendix A).

D. Specifically, the EMS Manual was prepared in reliance on a Third-Party EMS Gap Analysis, which was submitted to Plaintiffs for review in the form of a Gap Analysis Report for Defendant’s Power Generation business segment on February 23, 2018.

E. The Gap Analysis Report contained: (i) a summary of the internal environmental audit process, including any obstacles encountered in performing such audits; (ii) detailed findings on Defendant’s environmental management and compliance practices and processes, including the basis for each finding and each area of concern identified; (iii) identification of any areas of concern addressed during the audit; and (iv) recommendations for resolving any area of concern or steps necessary to ensure that Defendant’s environmental policies and practices satisfy the requirements of the EPA EMS Guidance. The Gap Analysis was prepared to evaluate if Defendant’s current EMS conformed with EPA’s EMS Guidance, was properly developed, implemented, and maintained, and identify any areas for improvement.

F. Additionally, Defendant has a long-standing Internal Environmental Audit

Program (“IEAP”), which is regularly updated, most recently in December 2017. The IEAP was developed to provide a systematic, and periodic review of the status of environmental regulatory compliance at all Defendant’s facilities and is designed to conform to Performance Standards included in the Board of Environmental Health and Safety Auditors Certification, “Standards for the Professional Practice of Environmental, Health, and Safety Auditing.”

G. Following episodic releases of ammonia to the air at Defendant’s Bellemeade Power Station on November 26, 2015 and Mt. Storm Power Station on March 15, 2017, Defendant updated its EPCRA Release Standard Operating Procedures and related incident reporting procedures. Defendant further conducted facility-specific training on EPCRA release reporting obligations, which included specific focus on ammonia operations associated with nitrogen oxide air pollution control systems. Defendant submitted its EPCRA Release SOPs to EPA.

H. On July 21, 2017, the Virginia Department of Game and Inland Fisheries (“DGIF”) identified an area of groundwater seepage along the James River shoreline adjacent to Defendant’s Chesterfield Power Station and subsequently notified both DEQ and Defendant of the same. Defendant investigated and later determined that the groundwater seepage identified by DGIF, which contained elevated concentrations of constituents and was daylighting to the James River, originated from an existing coal pile (“Eastern Shoreline Seeps”). In addition, on May 11, 2018, Dominion self-reported to DEQ its observation, at low tide, of a small area of groundwater seepage south of a coal ash impoundment (“Upper Ash Pond Seep”) at the Chesterfield Power Station, which contained elevated concentrations of constituents and was daylighting along the James River shoreline.

I. Dominion has taken actions, with DEQ's direction and approval, to characterize and mitigate the Eastern Shoreline Seeps, including installation of a groundwater interceptor trench and collection system. The Upper Ash Pond is subject to closure by removal pursuant to a DEQ solid waste permit, which would include any required groundwater corrective action.

J. DEQ is the regulatory entity addressing the Eastern Shoreline Seeps and Upper Ash Pond Seep, solely under State law.

K. On April 15, 2016, EPA issued to Defendant an Information Request under Section 308 of the CWA, 33 U.S.C. § 1318, concerning activities at Defendant's Possum Point Facility. Defendant provided numerous responsive documents to the request. Subsequently, EPA and Defendant had several meetings and discussions about the responses, and a second 308 Information Request was issued to Defendant on January 5, 2017. EPA, Defendant and DEQ held multiple meeting and discussions, exchanged documents and information, and ultimately reached a resolution to the alleged violations contained in the Complaint, which is embodied in this Consent Decree.

L. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation among the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

II. JURISDICTION AND VENUE

1. This Court has jurisdiction over the Parties and over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and 1367; Section 309(b) of the Clean Water

Act, 33 U.S.C. § 1319(b); Section 109 of CERCLA, 42 U.S.C. § 9609; and Section 325 of EPCRA, 42 U.S.C. § 11045.

2. The Parties agree that venue is proper in the Eastern District of Virginia pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1395(a), as well as Section 309(b) of the Clean Water Act, 33 U.S.C. § 1319(b) and Section 109(c) of CERCLA, 42 U.S.C. § 9609(c).

3. For purposes of this Consent Decree, or any action to enforce this Consent Decree, Defendant consents to the Court's jurisdiction over this Consent Decree and consents to venue in this judicial district.

4. For purposes of this Consent Decree, Defendant agrees that the Complaint states claims upon which relief may be granted pursuant to Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 and 1342, Section 109 of CERCLA, 42 U.S.C. § 9609, Section 325 of EPCRA, 42 U.S.C. § 11045, and Virginia Code §§ 62.1-44.2 through 62.1-44.34.28.

III. APPLICABILITY

5. The provisions of this Consent Decree apply to and are binding upon the United States, the State, Defendant, and Defendant's successors and/or assigns, except as otherwise set forth herein.

6. Defendant hereby agrees that it shall be bound to perform duties scheduled to occur by this Consent Decree prior to the Effective Date. In the event the United States withdraws or withholds consent to this Consent Decree before entry, or the Court declines to enter this Consent Decree, then the preceding requirement to perform duties scheduled to occur before the Effective Date shall terminate.

7. No transfer of ownership or operation of any Facility, or any portion thereof,

whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Defendant of its obligation to ensure that the terms of the Consent Decree are implemented. From the date of lodging of this Consent Decree until its termination, at least thirty (30) Days prior to such transfer, Defendant shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to the State, EPA, the United States Attorney for the Eastern District of Virginia, and the United States Department of Justice, in accordance with Section XV of this Consent Decree (Notices). Any attempt to transfer ownership or operation of any Facility, or any portion thereof, without complying with this Paragraph constitutes a violation of this Consent Decree. In the event of any such transfer of ownership or other interest, neither Defendant nor the transferee will be required to undertake any further EMS-related or IEAP-related obligations with respect to the transferred Facility, but Defendant will not be released from other obligations of this Consent Decree unless: (i) EPA, after consultation with the State, determines that the transferee has the technical and financial ability to assume these obligations and liabilities; (ii) the United States and State have agreed in writing to release Defendant from the obligations and liabilities; (iii) the United States, State and the transferee have jointly moved to substitute the transferee as Defendant to this Consent Decree; and (iv) the Court has approved the substitution. The transferee shall apply for modification and/or transfer of any applicable NPDES Permit under applicable law.

8. In any action to enforce this Consent Decree, Defendant shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

IV. DEFINITIONS

9. Terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Consent Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. “Applicable Law” shall mean the Clean Water Act (“CWA”), Virginia’s State Water Control Law (“SWCL”), and relevant implementing regulations.

b. “Coal Ash Impoundment Facility” shall mean the Bremo, Chesapeake Energy Center, Chesterfield, and Possum Point Fixed Facilities.

c. “Complaint” shall mean the complaint filed by the United States and the State in this action concurrent with the lodging of this Consent Decree.

d. “Consent Decree” or “Decree” or “CD” shall mean this Decree and all appendices attached hereto.

e. “Daily Violation” shall mean (i) any exceedance of a maximum daily discharge limitation, as determined under applicable state or federal law, for any parameters set forth in NPDES permits applicable to any Facilities, which is identified by a DMR Sample, or (ii) any failure to attain a minimum daily discharge limitation for pH set forth in NPDES permits or, alternatively, compliance orders applicable to any Facilities, as determined under applicable state or federal law, which is identified by a DMR Sample.

f. “Day” or “day” shall mean a calendar day unless expressly stated to be a business day. In computing any period of time under this Consent Decree, where the last day

would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next business day, except as otherwise provided in Paragraph 50.

g. “Defendant” or “Dominion” shall mean Virginia Electric and Power Company (d/b/a Dominion Energy Virginia).

h. “Discharge Monitoring Report Sample” or “DMR Sample” shall mean a sample taken in accordance with approved test procedures under 40 C.F.R. Part 136.

i. “Effective Date” shall be the date upon which this Consent Decree is entered by the Court or a motion to enter this Consent Decree is granted, whichever occurs first, as recorded on the Court’s docket.

j. “Effluent Limit Violation” shall mean a Daily Violation or a Monthly Violation.

k. “EMS Audit” shall mean the audit conducted by the EMS Auditor pursuant to Paragraph 27 of this Consent Decree.

l. “EMS Auditor” shall mean the independent third-party environmental consultant approved by EPA, in consultation with the State, pursuant to Paragraphs 25 and 26 of this Consent Decree, who shall be contracted by Defendant to conduct the EMS Audit pursuant to this Consent Decree.

m. “EMS Audit Report” shall mean the report developed by the EMS Auditor after completion of the EMS Audit pursuant to Paragraph 27 of this Consent Decree.

n. “EMS Consultant” shall mean the independent third-party environmental consultant previously approved by EPA to perform the Gap Analysis and prepare the EMS Manual, which was approved by EPA, after consultation with the State.

o. “EMS Manual” shall mean the document that describes and documents the integrated EMS developed for the Defendant, which was fully implemented by the Power Generation business segment as of January 1, 2019, and has been approved by EPA.

p. “Environmental Audit Report” or “EA Report” shall mean the report developed by the Environmental Audit Consultant after completion of the Environmental Audit pursuant to Paragraph 32 of this Consent Decree.

q. “Environmental Audit Consultant” or “EA Consultant” shall mean the independent third-party environmental consultant approved by EPA, in consultation with the State, pursuant to Paragraphs 29 and 30 of this Consent Decree, who shall be contracted by Defendant to conduct the Third-Party Environmental Audit pursuant to this Consent Decree.

r. “Environmental Management System” or “EMS” refers to the integrated environmental compliance system created by Defendant and its EMS Consultant and approved by EPA as described in Section I, Paragraphs C, D and E, to standardize and formalize practices and programs used to maintain, track, and improve environmental performance.

s. “EPA” shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

t. “EPCRA Release Standard Operating Procedures” or “Release SOPs” shall mean the EPCRA Facility-specific SOPs relating to training and compliance obligations under Section 103 of CERCLA and Section 304 of EPCRA, as described in Paragraphs 36-41.

u. “EPCRA Facility” shall mean the Defendant’s Mount Storm, West Virginia, Facility.

v. “Facility” refers to a Fixed Facility, EPCRA Facility and Stormwater Facility, as used in this Consent Decree.

w. “Fixed Facility” shall mean the current or former power generation asset locations and associated or contiguous operations identified in Appendix B to this Consent Decree.

x. “Monthly Violation” shall mean any exceedance, as determined by a DMR Sample, of an average monthly discharge limitation for any parameters set forth in NPDES permits or, alternatively, compliance orders applicable to any Facility.

y. “NOVs” shall mean, for violations or any noncompliance that may impact water quality, notices of violation under Applicable Law.

z. “NPDES” shall mean the National Pollutant Discharge Elimination System defined in 40 C.F.R. § 122.2, applicable State regulations and any state-issued NPDES permit.

aa. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral.

bb. “Parties” shall mean the United States, the State, and Defendant.

cc. “Power Generation business segment” or “PGBS” shall mean Defendant’s business organizations that operate electric power generating stations, not including nuclear power stations, in Virginia as well as their Virginia based construction locations subject to the CWA or SWCL. At a minimum, PGBS shall include Fixed Facilities and Stormwater Facilities.

dd. “Section” shall mean a portion of this Consent Decree identified by a Roman numeral.

ee. “State” shall mean the Commonwealth of Virginia.

ff. “Stormwater Facility” shall mean an operation of Defendant’s Power Generation business segment in Virginia typically consisting of construction activities that require a stormwater NPDES Permit.

gg. “Third-Party Environmental Audit” or “Environmental Audit” or “EA” shall mean the EA required by Paragraphs 31-33 of this Consent Decree.

hh. “United States” shall mean the United States of America, acting on behalf of EPA.

V. CIVIL PENALTY

10. Within 30 Days after the Effective Date of this Consent Decree, Defendant shall pay a total of \$1,400,000 as a civil penalty to the United States and the State.

11. \$410,000 of the civil penalty shall be paid to the United States and \$990,000 of the civil penalty shall be paid to the Commonwealth of Virginia.

12. Defendant shall make any payments to the United States required by this Consent Decree at <https://www.pay.gov> to the U.S. Department of Justice account, in accordance with instructions provided to Defendant by the Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the Eastern District of Virginia after the Effective Date. The payment instructions provided by the FLU shall include a Consolidated Debt Collection System (“CDCS”) number, which Defendant shall use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to:

Amanda B. Tornabene
Vice President, Environmental Services
Dominion Energy Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060
Amanda.b.tornabene@dominionenergy.com

and

Clay T. Burns
Senior Counsel, Law Department
Dominion Energy Services, Inc.
120 Tredegar St.
Richmond, VA 23219
clay.t.burns@dominionenergy.com

on behalf of Defendant. Defendant may change the individual to receive payment instructions on its behalf by providing written notice of such change to the United States in accordance with Section XV (Notices). At the time of payment, Defendant shall send notice of payment to: (i) EPA via email at CINWD_AcctsReceivable@epa.gov AND via regular mail at U.S. EPA Cincinnati Finance Office, MS: WG-32B26 Martin Luther King Drive, Cincinnati, Ohio 45268; (ii) EPA via email to the U.S. EPA Regional Hearing Clerk at R3_Hearing_Clerk@epa.gov; (iii) the United States via email or regular mail in accordance with Section XV (Notices); and (iv) the State in accordance with Section XV (Notices). Such notice shall state the Defendant's name, street/P.O. Box address, email address and telephone number; the name of the case; the docket number or civil action number of the case; the Consolidated Debt Collection System ("CDCS") Number and DOJ case number 90-5-1-1-11859; the amount of the payment; and the method of payment.

13. Defendant shall make payment to the Commonwealth of Virginia under this Section by certified or cashier's check made payable to the "Treasurer of Virginia." Payment

shall be mailed to: Receipts Control, Department of Environmental Quality, PO Box 1104, Richmond, Virginia 23218.

14. Defendant shall not deduct any penalties paid under this Consent Decree pursuant to this Section or Section IX (Stipulated Penalties) in calculating its federal, state, or local income tax.

VI. COMPLIANCE REQUIREMENTS

15. This Consent Decree in no way affects or relieves Defendant of its responsibility to comply with applicable federal, state, and local laws, regulations, and permits.

16. Defendant shall perform the work required by this Consent Decree in compliance with the requirements of all applicable federal, state, and local laws, regulations, and permits. This Consent Decree shall not be considered as a permit issued pursuant to any federal, state, or local statute or regulation.

17. Approval of Deliverables. Except for the State only approvals described in Paragraphs 36 and 37 of this CD, after review of any plan, report, or other item that is required to be submitted and approved pursuant to this Consent Decree, EPA, after consultation with the State, shall in writing: (a) approve the submission; (b) approve the submission with specified conditions; (c) approve part of the submission and disapprove the remainder; or (d) disapprove the submission.

18. If the submission is approved pursuant to Paragraph 17(a), Defendant shall take all actions required by the plan, report, or other document, in accordance with the schedules and requirements of the plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part, pursuant to Paragraph 17(b) or 17(c), Defendant

shall, upon written direction from EPA, after consultation with the State, take those actions required by the approved plan, report, or other item that EPA, after consultation with the State, determines are technically severable from any disapproved portions, subject to Defendant's right to dispute the specified conditions or EPA's disapproval of the disapproved portions, under Section XI of this Consent Decree (Dispute Resolution).

19. If the submission is disapproved in whole or in part pursuant to Paragraph 17(c) or 17(d), Defendant shall, within 45 Days of receipt of disapproval or within such other timeframe or upon such other schedule as the Parties agree to in writing, correct all deficiencies and resubmit the plan, report, or other item, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, Defendant shall proceed in accordance with the preceding Paragraph.

20. Any stipulated penalties applicable to the original submission, as provided in Section IX of this Consent Decree (Stipulated Penalties), shall accrue during the 45-Day period or other specified period, but shall not be payable unless the resubmission is untimely or is materially disapproved in whole or in part; provided that, if the original submission was so deficient as to constitute a material breach of Defendant's obligations under this Consent Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission.

21. If a resubmitted plan, report, or other item, or portion thereof, is disapproved in whole or in part, EPA, after consultation with the State, may again require Defendant to correct any deficiencies, in accordance with the preceding Paragraphs, subject to Defendant's right to invoke Dispute Resolution under Section XI and the right of EPA or the State to seek stipulated

penalties as provided in the preceding Paragraph.

22. Permits. Where any compliance obligation under this Consent Decree requires Defendant to obtain a federal, state, or local permit or approval, Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. Defendant may seek relief under the provisions of Section X of this Consent Decree (Force Majeure) for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, if Defendant has submitted timely and complete applications and have taken all other actions necessary to obtain all such permits or approvals.

23. Defendant shall make copies of the Consent Decree available to all officers, employees, and agents whose duties might reasonably include compliance with any provision of this Consent Decree. Defendant shall also provide copies of this Consent Decree to contractors with responsibilities under this Consent Decree. Defendant shall condition any contract for the performance of work required under this Consent Decree upon performance of the work in conformity with the terms of the Decree.

VII. INJUNCTIVE RELIEF

EMS Audit

24. Defendant developed and EPA, after consultation with the State, approved an EMS Manual for implementing Defendant's EMS.

25. Defendant has retained and EPA, after consultation with the State, has approved an EMS Auditor to complete an Environmental Management System Audit and develop an Environmental Management System Audit Report ("EMS Audit Report") for Defendant's Power

Generation business segment. Defendant shall bear all costs associated with the EMS Auditor duties under this Consent Decree, cooperate fully with the EMS Auditor, and provide the EMS Auditor with access to all records, employees, contractors, and Facilities that the EMS Auditor deems reasonably necessary to effectively perform the duties described in in this Consent Decree.

26. Selection of Replacement EMS Auditor. If at any time Defendant seeks to replace the EMS Auditor, then Defendant shall submit to EPA and the State a list of two or more proposed environmental consultants to serve as EMS Auditor, along with: the name, affiliation, and address of the proposed consultants; information demonstrating how each proposed consultant satisfies EMS auditor qualification requirements of Table 1 in ISO 19011 (First Edition, 2002-10-01); information demonstrating how each proposed consultant has experience in developing and implementing an EMS; information demonstrating that the team proposed to conduct the EMS Audit, in composite, has a working process knowledge of the Defendant's operations or similar operations, and has a working knowledge of federal and state environmental requirements which apply to the Facilities; and descriptions of any previous work contracts, or financial relationship with Defendant.

a. EPA, in consultation with the State, shall notify Defendant of whether it approves any consultant(s) on the list submitted by Defendant. If EPA, after consultation with the State, does not approve any of the proposed consultants on Defendant's list, then Defendant shall submit another list of proposed consultants to EPA and the State within 30 Days of receipt of EPA's written notice of disapproval. If after Defendant has submitted a third list of consultants, which must be submitted within 30 Days of receipt of written notice that EPA has not approved any of the consultants on Defendant's second list, the Parties are unable to agree on an EMS

Auditor, the Parties agree to resolve the selection of the EMS Auditor through the Dispute Resolution process in Section XI of this Consent Decree.

b. Within 10 Days after receipt of EPA's approval, Defendant shall select one consultant from those approved by EPA and shall enter into a contract with the consultant to perform all duties described in Paragraphs 25 and 27. In the event the consultant(s) approved by EPA are no longer available or willing to accept the work described herein when notified of its selection by Defendant, then Defendant shall, within 30 Days after receipt of EPA's approval pursuant to Paragraph 26(a), select another consultant approved by EPA and enter into the contract to perform all duties described herein. Defendant shall ensure that the EMS Auditor performs the duties described herein, and that Defendant's contract with the EMS Auditor shall require the EMS Auditor to perform such duties.

27. EMS Audit and EMS Audit Report. Defendant shall ensure that the EMS Auditor:

a. Conducts and completes an EMS Audit for Defendant's Power Generation business segment no sooner than 180 Days and no later than 545 Days after the Date of Lodging of this CD. The EMS Audit shall be conducted in accordance with ISO 19011 (First Edition, 20002-10-01), using as the EMS metric EPA's "*Compliance-Focused Environmental Management System-Enforcement Agreement Guidance*" ("EPA EMS Guidance"), Appendix A to this Consent Decree, as well as the EMS Manual, and shall determine the following:

- (i) Whether there is a defined system, subsystem, program, or planned task for each respective element of the EPA EMS Guidance;
- (ii) To what extent the system, subsystem, program, or task has been implemented, and is being maintained;

- (iii) The adequacy of each Facility's internal self-assessment procedures for programs and tasks;
- (iv) Whether Defendant is effectively communicating environmental requirements to affected parts of the organization, or those working on behalf of the organization;
- (v) Whether Defendant is ensuring that contractors and consultants are fully trained to comply with and are complying with any environmental obligations associated with their work for Defendant;
- (vi) Whether further improvements should be made to Defendant's written requirements or procedures to better achieve compliance with all environmental laws; and
- (vii) Whether there are deviations from Defendant's written requirements or procedures in practice.

b. Within 90 Days of completion of the EMS Audit, prepares an EMS Audit Report describing the results of the EMS Audit, including recommendations necessary for Dominion to improve its environmental management policy and processes and ensure it is consistent with EPA's EMS Guidance.

- (i) The EMS Audit Report shall contain: (i) a summary of the audit process, including any obstacles encountered; (ii) detailed findings, including the basis for each finding and each area of concern identified; (iii) identification of any areas of concern addressed during the audit; (iv) recommendations for resolving any area of concern or steps necessary to ensure that Defendant's environmental policies and practices achieve the requirements of the EPA EMS Guidance and EMS Manual; and (v) certification that the EMS Audit was conducted

in accordance with the provisions of this Consent Decree.

(ii) The EMS Audit Report shall be provided to EPA and the State upon completion. This report shall be provided to EPA and the State directly from the EMS Auditor. Defendant shall have 30 Days from the date the EMS Audit Report is provided to EPA and the State to provide comments on the report to EPA and the State. EPA, following consultation with the State, shall have the opportunity to review and comment on the EMS Audit Report within sixty (60) days of receipt from the EMS Auditor.

28. EMS Audit Report Implementation. Within 270 Days of its receipt, Defendant shall complete full implementation of the recommendations of the EMS Audit Report and provide a certification in the form identified in the Notice provision of this CD to EPA and the State confirming completion of the EMS Audit Report implementation. An extension of time to complete implementation may only be granted in writing by EPA, after consultation with the State, upon written request by Defendant.

Third-Party Environmental Audit

29. Defendant has retained and EPA, after consultation with the State, has approved an environmental consultant to be the EA Consultant.

30. Selection of Replacement EA Consultant. If at any time Defendant seeks to replace the EA Consultant, then Defendant shall submit to EPA and the State a list of two or more proposed consultants to serve as EA Consultant, along with: the name, affiliation, and address of the proposed consultants; information demonstrating how each proposed consultant has qualifications to perform environmental audits; information demonstrating how each proposed consultant has experience in performing an environmental audit; information

demonstrating that the team proposed to conduct the environmental audit, in composite, has a working process knowledge of the Defendant's operations or similar operations, and has a working knowledge of federal and state environmental requirements which apply to Defendant; and descriptions of any previous work contracts, or financial relationship with Defendant.

a. EPA, in consultation with the State, shall notify Defendant of whether it approves any consultant(s) on the list. If EPA, after consultation with the State, does not approve any of the proposed consultants on Defendant's list, then Defendant shall submit another list of proposed consultants to EPA and the State within 30 Days of receipt of EPA's written notice. If after Defendant has submitted a third list of consultants, which must be submitted within 30 Days of receipt of written notice that EPA has not approved any of the consultants on Defendant's second list, the Parties are unable to agree on an EA Consultant, the Parties agree to resolve the selection of the EA Consultant through the Dispute Resolution process in Section XI of this Consent Decree.

b. Within 10 Days after receipt of EPA's approval, Defendant shall select one consultant from those approved by EPA and shall enter into a contract with the consultant to perform all duties described in this Consent Decree. In the event that the consultant(s) approved by EPA is no longer available or willing to accept the work described herein when notified of their selection by Defendant, then Defendant shall, within 30 Days after receipt of EPA's approval pursuant to Paragraph 30(a), select another consultant approved by EPA and enter into the contract to perform all duties described in herein. Defendant shall ensure that the EA Consultant performs the duties described in this CD and that Defendant's contract with the EA Consultant shall require the EA Consultant to perform such duties

31. The EA Consultant shall conduct a Third-Party Environmental Audit (“EA or “Environmental Audit”) of the Chesapeake Energy Center, Chesterfield, Clover, Bremo, Possum Point, Virginia City Hybrid Energy Center, and Yorktown Fixed Facilities as well as three (3) randomly chosen stormwater NPDES permitted construction locations owned and operated by Defendant (“Environmental Audit Facilities”). The Environmental Audit shall be completed within 270 Days of the Effective Date and shall be completed in accordance with acceptable environmental audit industry standards. The Environmental Audit shall evaluate compliance with all applicable NPDES permits at the Environmental Audit Facilities and, at a minimum, with the Applicable Laws.

32. An EA Report shall be prepared by the EA Consultant detailing the results of the Environmental Audit, including, at a minimum: (1) the environmental audit process and protocols followed; (2) the sites and locations audited; (3) the files reviewed; (4) any data or samples obtained; (5) individuals interviewed; (6) all areas of non-compliance and concern; (7) recommendations; and (8) a plan and schedule to correct any non-compliance or area of concern identified. The EA Report shall be provided to EPA and the State no later than 60 Days after completion of the Environmental Audit. EPA, following consultation with the State, shall have an opportunity to review and comment on the EA Report within 60 Days of receipt from the EA Consultant.

33. Responses and actions to fully address and correct any non-compliance or areas of concern identified by the EA Report shall be completed as expeditiously as possible and shall not take longer than 270 Days to complete after the submission of the EA Report, unless an extension of time is requested in writing by Defendant and granted by EPA in writing, after

consultation with the State.

Internal Environmental Audits

34. Defendant shall continue to implement its Internal Environmental Audit Program (“IEAP”) and include an IEAP Report in the Semi-Annual report required by Section VIII of this Consent Decree.

35. Each IEAP Report shall include: (1) the identification of any Facility audited within the most recent semi-annual period; (2) a summary of information reviewed to assess compliance with Applicable Law; (3) a statement as to whether there are, and a description of, any instances of non-compliance with Applicable Law; and if so, (4) description of and confirmation that corrective and/or preventive actions have been taken or are being implemented to address any instances of non-compliance with Applicable Law.

State SWCL Injunctive Relief: Seep Identification and Mitigation

36. Within 180 Days of lodging of this CD, in addition to inspections required by the EPA CCR Rule, 40 CFR Part 257, Subpart D, Virginia Solid Waste Management Regulations, 9 VAC 20-81, Virginia Impounding Structure Regulations, 4 VAC 50-20, and applicable permits, Defendant shall continue to conduct at least monthly site walk-downs required by applicable law or in accordance with best management practices, which must include at a minimum a visual inspection of adjacent shorelines at low-tide at its Coal Ash Impoundment Facilities (“CAIF”). Any seeps or surface expressions of groundwater observed to be discharging to surface waters at a CAIF shall be reported within 24 hours to the State in addition to any other legally required notifications. Defendant shall then, in coordination and consultation with and as approved by the State, take action to determine whether further monitoring, characterization, or mitigation is

warranted. If determined to be warranted, Defendant shall develop an appropriate corrective action plan for State review and approval. After approval, Defendant shall implement the plan in accordance with its terms.

State SWCL Seep Specific Injunctive Relief

37. Defendant shall continue to implement the Seep Mitigation Plan (“SMP”) submitted to the State to address the Eastern Shoreline Seeps at the Chesterfield Power Station. In implementing this plan, Defendant shall:

- a. Submit quarterly status reports to the State following implementation of the mitigation strategy describing the results of follow-up monitoring;
- b. Submit an annual review report to the State with each 4th quarter status report for three years that quantifies the success of the chosen mitigation method as well as effectiveness;
- c. Submit an evaluation to the State to occur no later than three years after installation of a remedy described in the SMP to include data analysis and trend analysis to evaluate the long-term effectiveness of the remedy; and
- d. Submit to the State a revised SMP within 90 days following a DEQ notification that the selected mitigation plan is not achieving the desired goal.

EPCRA Release Training

38. EPCRA Release Training. For the EPCRA Facility, within 120 Days of the Effective Date, Defendant shall conduct training on its Release SOPs for notifying the appropriate federal, state, and local emergency responders of a release of any hazardous substance or EHS exceeding the reportable quantity (“RQ”) as required by the emergency release notification requirements of Section 103 of CERCLA, 42 U.S.C. § 9603, and Section 304 of EPCRA, 42 U.S.C. § 11004, and their implementing regulations at 40 C.F.R. Parts 302 and 355.

39. Within 60 days of completing the training in accordance with Paragraph 38, Defendant shall develop and submit to EPA an Emergency Release Process Report (“the Release

SOPs Report”). The Release SOPs Report shall include a certification of completion of training, including a report on the dates of training and personnel trained.

40. Between 365 Days and 425 Days after the submission of the Release SOPs Report, Defendant shall certify to EPA in writing that the Release SOPs are current, accurate and being implemented.

Annual Training

41. Defendant shall provide and require annual training for all individuals with environmental management responsibilities at any Facility, including, but not limited to: (a) Clean Water Act compliance; (b) applicable requirements in the EMS Manual; and (c) applicable obligations in this Consent Decree.

VIII. REPORTING REQUIREMENTS

Semi-Annual Reports

42. During the term of this Consent Decree, Defendant shall submit semi-annual reports to EPA and the State concerning compliance with the terms of this CD and Applicable Law. The semi-annual reports may be submitted in electronic format and shall be due at the end of the month following the end of each semi-annual period (i.e. by July 31 and January 31), starting with the first full semi-annual period after the Effective Date. The semi-annual reports shall contain, at a minimum, the following:

a. Information regarding any violation of Applicable Law at any Facility that occurred within the reporting period, including: (i) a summary of Effluent Limit Violations, including total number of Effluent Limit Violations; (ii) NOVs; (iii) unauthorized discharges; (iv) a summary of steps taken or planned steps to remedy the violations identified in (i) through

(iii); and (v) if applicable, proof of payment of civil or stipulated penalty under this Consent Decree or any state consent decree or consent order;

b. Certification of and any applicable rosters of training required under this Consent Decree;

c. Following completion of the EMS Audit required by this Consent Decree, a certification of material conformance with the elements of the EMS Manual, or, for any material nonconformance, an explanation of the cause of the nonconformance and remedial steps taken or to be taken;

d. The status of Consent Decree implementation, including the status of any problems encountered or anticipated, together with implemented or proposed solutions;

e. A description of any noncompliance with the requirements of this Consent Decree and an explanation of the noncompliance's likely cause and the remedial steps taken, or to be taken, to prevent or minimize such noncompliance;

f. The IEAP Report, required by Paragraph 35; and

g. A description of each Consent Decree violation for which Defendant has submitted to EPA an unresolved Force Majeure claim or intends to submit a Force Majeure claim pursuant to Section X of this Consent Decree.

Other Reporting Requirements

43. If Defendant violates, or has reason to believe that it may violate, any requirement of this Consent Decree, Defendant shall notify the United States and the State of such violation and its likely duration, in writing, within 7 Days of the day Defendant first becomes aware of the violation, and include an explanation of the violation's likely cause and of the remedial steps

taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the notification is due, Defendant shall so state in the notification. Defendant thereafter shall investigate the cause of the violation and submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the day Defendant becomes aware of the violation. Nothing in this Paragraph or the following Paragraph relieves Defendant of its obligation to provide the notice required by Section X of this Consent Decree (Force Majeure).

44. Whenever any violation of this Consent Decree or of any Applicable Law or other event affecting Defendant's performance under this Consent Decree may pose an immediate threat to the public health or welfare or the environment, Defendant shall notify EPA and the State orally or by electronic or facsimile transmission as soon as possible, but no later than 24 hours after Defendant first knew of the violation or event. This procedure is in addition to the requirements set forth in the preceding Paragraph.

45. All reports shall be submitted to the persons designated in Section XV of this Consent Decree (Notices).

46. Each report submitted by Defendant under this Section shall be signed by an official of the submitting party and include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

47. The reporting requirements of this Consent Decree do not relieve Defendant of any reporting obligation required by Applicable Law, or by any other federal, state, or local law, regulation, permit, or other requirement.

48. Any information provided pursuant to this Consent Decree may be used by the United States or the State in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

IX. STIPULATED PENALTIES

49. Defendant shall be liable for stipulated penalties to the United States and the State for violations as specified below, unless excused under Section X (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

50. Stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. If performance is satisfactorily completed, or if a violation ceases on a Saturday, Sunday, or federal holiday, the date of completion of performance and the date that the violation ceases shall be the date of actual completion or cessation, rather than the following business day. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

51. Any Plaintiff, in the unreviewable exercise of its discretion may reduce or waive stipulated penalties otherwise due to that Plaintiff under this Consent Decree.

52. Stipulated penalties shall continue to accrue as provided in Paragraph 50 during any Dispute Resolution under Section XI, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA or the State that is not appealed to the Court, Defendant shall pay accrued penalties determined to be owed, together with interest, to the United States and the State within 30 Days of the effective date of the agreement or the receipt of EPA's or the State's decision or order.

b. If the dispute is appealed to the Court and the United States or the State prevail in whole or in part, Defendant shall pay all accrued penalties determined by the Court to be owing, together with interest, to the United States and the State within 60 Days of receiving the Court's decision or order, except as provided in subparagraph (c), below.

c. If any Party appeals the Court's decision, Defendant shall pay all accrued penalties determined to be owed, together with interest, within 15 Days of receiving the final appellate court decision.

53. If Defendant fails to pay stipulated penalties according to the terms of this Consent Decree, Defendant shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph shall be construed to limit the United States or the State from seeking any remedy otherwise provided by law for Defendant's failure to pay any stipulated penalties.

54. Subject to the provisions of Section XIII of this Consent Decree (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree

shall be in addition to any other rights, remedies, or sanctions available to the United States or the State for Defendant's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of relevant statutory or regulatory requirements, Defendant shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

55. Non-Compliance with Consent Decree. The following stipulated penalties shall accrue per violation per Day for each violation of any requirement of Paragraph 7 (transfer of Facilities); Section V (Civil Penalty); Section VI (Compliance Requirements); Section VII (Injunctive Relief); and Section XII (Information Collection and Retention) of this Consent Decree:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$750 per Day or portion thereof	1st through 14th Day
\$1,250 per Day or portion thereof	15th through 30th Day
\$2,500 per Day or portion thereof	31st Day and beyond

56. Non-Compliance with Reporting Requirements. The following stipulated penalties shall accrue per violation per Day for each violation of the Reporting Requirements under Section VIII of this Consent Decree:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$250 per Day or portion thereof	1st through 14th Day
\$500 per Day or portion thereof	15th through 30th Day
\$1,000 per Day or portion thereof	31st Day and beyond

57. Non-Compliance with NPDES Permit Limits. The following stipulated penalties shall accrue for each Effluent Limit Violation that occurs at any Facility after the Effective Date of this Consent Decree, except for any Daily Violation that is in compliance with an alternative limit identified in a State compliance order:

60. Defendant shall pay stipulated penalties owing to the United States pursuant to this CD in the manner set forth in Paragraph 12 and with the confirmation notices and transmittal letter information required by Paragraph 12, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid. Defendant shall pay stipulated penalties owing to the State pursuant to this Consent Decree in the manner set forth in Paragraph 13, except that the confirmation notice shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being

paid.

X. FORCE MAJEURE

61. “Force Majeure,” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Defendant, of any entity controlled by Defendant, or of Defendant’s contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Defendant’s best efforts to fulfill the obligation. The requirement that Defendant exercise “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential Force Majeure event and best efforts to address the effects of any such event (a) as it is occurring and (b) after it has occurred to prevent or minimize any resulting delay to the greatest extent possible. “Force Majeure” does not include Defendant’s financial inability to perform any obligation under this Consent Decree.

62. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a Force Majeure event, Defendant shall provide notice orally or by electronic or facsimile transmission to EPA and the State within 72 hours of when Defendant first knew that the event might cause a delay. Within 7 Days thereafter, Defendant shall provide in writing to EPA and the State an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Defendant’s rationale for attributing such delay to a Force Majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of Defendant, such event may cause or contribute to an endangerment to public health, welfare or the environment. Defendant shall include with any

notice all available documentation supporting the claim that the delay was attributable to a Force Majeure. Failure to comply with the above requirements shall preclude Defendant from asserting any claim of Force Majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Defendant shall be deemed to know of any circumstance of which Defendant, any entity controlled by Defendant, or Defendant's contractors knew or should have known.

63. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay or anticipated delay is attributable to a Force Majeure event, the time for performance of the obligations under this Consent Decree that are affected by the Force Majeure event will be extended by EPA, after a reasonable opportunity for review and comment by the State, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the Force Majeure event shall not, of itself, extend the time for performance of any other obligation. EPA will notify Defendant in writing of the length of the extension, if any, for performance of the obligations affected by the Force Majeure event.

64. If EPA, after a reasonable opportunity for review and comment by the State, does not agree that the delay or anticipated delay has been or will be caused by a Force Majeure event, EPA will notify Defendant in writing of its decision.

65. If Defendant elects to invoke the dispute resolution procedures set forth in Section XI (Dispute Resolution) in response to EPA's determination in Paragraph 64, it shall do so no later than 20 Days after receipt of EPA's notice. In any such proceeding, Defendant shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure event, that the duration of the delay or the

extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Defendant complied with the requirements of Paragraphs 61 and 62, above. If Defendant carries this burden, the delay at issue shall be deemed not to be a violation of the affected obligation of this Consent Decree identified to EPA and the Court.

XI. DISPUTE RESOLUTION

66. Unless otherwise expressly provided for in this Consent Decree, the Dispute Resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. Defendant's failure to seek resolution of a dispute under this Section shall preclude Defendant from raising any such issue as a defense to an action by the United States, EPA or the State to enforce any obligation of Defendant arising under this Consent Decree.

67. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Defendant sends the United States, EPA and the State a written Notice of Dispute. The Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed beyond 30 Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States, after consultation with the State, shall be considered binding unless, within 15 Days after the conclusion of the informal negotiation period, Defendant invokes formal dispute resolution procedures as set forth below.

68. Formal Dispute Resolution. Defendant shall invoke formal dispute resolution

procedures, within the time period provided in the preceding Paragraph, by serving on the United States, EPA and the State a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Defendant's position and any supporting documentation relied upon by Defendant.

69. The United States shall serve its Statement of Position within 45 Days of receipt of Defendant's Statement of Position. The United States' Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States, and shall be developed in consultation with State. The United States' Statement of Position shall be binding on Defendant, unless Defendant files a motion for judicial review of the dispute in accordance with Paragraph 71.

70. An administrative record of the dispute shall be maintained by EPA and shall contain all Statements of Position, including supporting documentation, submitted pursuant to this Section.

71. Defendant may seek judicial review of the dispute by filing with the Court and serving on the United States and the State, in accordance with Section XV of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 20 Days of receipt of the United States' Statement of Position pursuant to Paragraph 69. The motion shall contain a written statement of Defendant's position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly

implementation of this Consent Decree.

72. The United States and/or the State shall respond to Defendant's motion within the time period allowed by the Local Rules of this Court. Defendant may file a reply memorandum, to the extent permitted by the Local Rules.

73. Standard of Review

a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 68 pertaining to the adequacy or appropriateness of plans, procedures to implement plans, schedules or any other items requiring approval by EPA under this Consent Decree; the adequacy of the performance of work undertaken pursuant to this Consent Decree; and all other disputes that are accorded review on the administrative record under applicable principles of administrative law, Defendant shall have the burden of demonstrating, based on the administrative record, that the position of the United States is arbitrary and capricious or otherwise not in accordance with law.

b. Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 68, Defendant shall bear the burden of demonstrating that its position fulfills the terms, conditions, requirements, and objectives of this Consent Decree.

74. The invocation of Dispute Resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Defendant under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 52. If

Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section IX (Stipulated Penalties).

XII. INFORMATION COLLECTION AND RETENTION

75. The United States, the State, and their designated representatives, including attorneys, contractors, and consultants, shall have the right of entry onto any Facility under the ownership or control of the Defendant, at all reasonable times, upon presentation of credentials, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States in accordance with the terms of this Consent Decree;
- c. obtain samples and, upon request, splits of any samples taken by Defendant or its representatives, contractors, or consultants relating to Defendant's compliance with this Consent Decree;
- d. obtain documentary evidence, including photographs and similar data, relating to Defendant's compliance with this Consent Decree; and
- e. assess Defendant's compliance with this Consent Decree.

76. Upon request, Defendant shall provide EPA and the State, or their authorized representatives, splits of any samples taken by Defendant relating to the Facilities' compliance with this Consent Decree. Upon request, EPA and the State shall provide Defendant splits of any samples relating to the Facilities' compliance with this Consent Decree taken by EPA or the State.

77. Until three (3) years after the termination of this Consent Decree, Defendant shall

retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in Defendant's or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to Defendant's performance of its obligations under this Consent Decree. The foregoing may be maintained electronically. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States or the State, Defendant shall provide copies of any non-privileged documents, records, or other information required to be maintained under this Paragraph.

78. At the conclusion of the information-retention period provided in the preceding Paragraph, Defendant shall notify the United States and the State at least 60 Days prior to the destruction of any documents, records, or other information subject to the requirements of the preceding Paragraph and, upon request by the United States or the State, Defendant shall deliver copies of any such non-privileged documents, records, or other information to EPA or the State. After the expiration of the 60-Day period identified in this Paragraph, Defendant's obligations with respect to document retention under this Consent Decree shall terminate and Defendant shall be entitled to reinstate the application of its standard document retention policies.

79. Defendant may assert that information required to be provided to the United States or the State under Paragraphs 77 and 78 of this Consent Decree is privileged under the attorney-client privilege or any other privilege recognized by federal law. If Defendant asserts such a privilege, it shall provide the following: (a) the title of the document, record, or

83. The United States and the State reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 82.

This Consent Decree shall not be construed to limit the rights of the United States or the State to

obtain penalties or injunctive relief under the CWA or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Paragraph 82.

84. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, civil penalties, or other appropriate relief relating to the violations alleged in the Complaint, Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph 82 of this Section.

85. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. Defendant is responsible for achieving and maintaining complete compliance with all applicable federal, state, and local laws, regulations, and permits; and Defendant's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and the State do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Defendant's compliance with any aspect of this Consent Decree shall result in compliance with provisions of the CWA, 33 U.S.C. § 1311, *et seq.*, or with any other provisions of federal, state, or local laws, regulations, or permits. Application for construction grants, State Revolving Loan Funds, or any other grants or loans, or other delays caused by inadequate facility planning or plans and specifications on the part of Defendant shall

not be cause for extension of any required compliance date in this Consent Decree.

86. This Consent Decree does not limit or affect the rights of Defendant or of the United States or the State against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Defendant, except as otherwise provided by law.

87. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third-party not party to this Consent Decree.

88. By the execution of this Consent Decree, Defendant releases and shall hold harmless the United States and the State, and their instrumentalities, agents, and employees, in their official and personal capacities, of any and all liability or claims arising out of or otherwise related to the negotiations leading to this Consent Decree and all matters contained therein.

XIV. COSTS

89. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States and the State shall each be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due hereunder but not paid by Defendant.

XV. NOTICES

90. Unless otherwise specified herein, whenever notifications, submissions, reports, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

To the United States:

By email: eescdcopy.enrd@usdoj.gov
Re: DJ # 90-5-1-1-11859

By mail: EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-1-1-11859

To EPA:

By email: harsh.chad@epa.gov

By mail: Director, Office of Civil Enforcement
U.S. Environmental Protection Agency
Ariel Rios Building, 2241A
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

and

NPDES Enforcement Branch Chief
U.S. EPA Region III
1650 Arch Street, 3WP42
Philadelphia, PA 19103

To the Commonwealth of Virginia:

By email: Kristen.Sadtler@deq.virginia.gov

By mail: Director, Division of Enforcement
PO Box 1105
Richmond, VA 23218

To Defendant:

By mail: Amanda B. Tornabene
Vice President, Environmental Services
Dominion Energy Services, Inc.
5000 Dominion Boulevard
Glen Allen, VA 23060

Clay T. Burns
Senior Counsel, Law Department
Dominion Energy Services, Inc.
120 Tredegar St.
Richmond, VA 23219

By email: Amanda.b.tornabene@dominionenergy.com
clay.t.burns@dominionenergy.com

91. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

92. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVI. RETENTION OF JURISDICTION

93. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Consent Decree or entering orders modifying this Consent Decree, pursuant to Sections XI (Dispute Resolution) or XVII (Modification) or effectuating or enforcing compliance with the terms of this Decree.

XVII. MODIFICATION

94. The terms of this Consent Decree, including any attached Appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Consent Decree, it shall be effective only upon approval by the Court. Deadline extensions of less than 90 Days shall not be considered a material change to the Consent Decree requiring Court approval.

95. Any disputes concerning modification of this Consent Decree shall be resolved

pursuant to Section XI of this Decree (Dispute Resolution); provided, however, that, instead of the burden of proof provided by Paragraph 73, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XVIII. TERMINATION

96. After Defendant has completed the requirements of Paragraphs 24-33 (EMS Audit and Environmental Audit) of this Decree and has thereafter maintained satisfactory compliance with Section VI (Compliance Requirements), Section VII (Injunctive Relief), and Section VIII (Reporting Requirements) of this Consent Decree for a period of two years, and has paid the civil penalty and any accrued and demanded stipulated penalties as required by this Consent Decree, Defendant may serve upon the United States and the State a Request for Termination, stating that Defendant has satisfied those requirements, together with all necessary supporting documentation.

97. Following receipt by the United States and the State of Defendant's Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether Defendant has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States and the State agree that the Consent Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Consent Decree.

98. If the United States and the State do not agree that the Consent Decree may be terminated, Defendant may invoke Dispute Resolution under Section XI of this Consent Decree. However, Defendant shall not seek Dispute Resolution of any dispute regarding termination,

under Paragraph 68 of Section XI, until 30 Days after service of its Request for Termination.

XIX. PUBLIC PARTICIPATION

99. This Consent Decree shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding this Consent Decree disclose facts or considerations indicating that this Consent Decree is inappropriate, improper, or inadequate. Defendant consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree, unless the United States has notified Defendant in writing that it no longer supports entry of the Consent Decree.

XX. SIGNATORIES/SERVICE

100. Each undersigned representative of the Defendant, the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice, and the undersigned representative of the State certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

101. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. Defendant agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXI. INTEGRATION

102. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than deliverables that are subsequently submitted and approved pursuant to this Consent Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, nor shall it be used in construing the terms of this Consent Decree.

XXII. FINAL JUDGMENT

103. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, the State, and Defendant. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

XXIII. APPENDICES

104. The following appendices are attached to and part of this Consent Decree:

Appendix A: EPA EMS Guidance

Appendix B: Fixed Facilities


SO ORDERED THIS _____ DAY OF _____, 2020.

United States District Judge
Eastern District of Virginia


THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

FOR THE UNITED STATES OF AMERICA

Date: 3/6/2020


NATHANIEL DOUGLAS
Deputy Section Chief
Environment Enforcement Section

Date: 3/6/2020


LAURA THOMS
Senior Attorney
Environment Enforcement Section
U.S. Department of Justice
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THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

FOR THE UNITED STATES OF AMERICA

G. ZACHARY TERWILLIGER
United States Attorney
Eastern District of Virginia

Date: March 13, 2020



ROBERT P. MCINTOSH
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Virginia State Bar No. 66113
919 East Main Street, Suite 1900
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Email: Robert.McIntosh@usdoj.gov

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

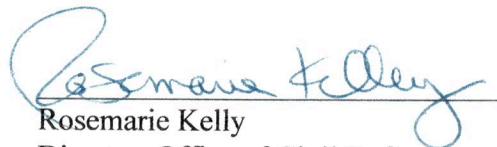
FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

Date: 12/18/19



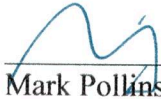
Susan Parker Bodine
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Date: 12/12/19



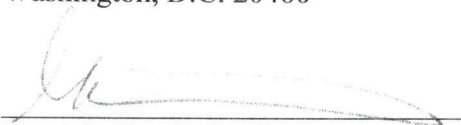
Rosemarie Kelly
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Date: 11/26/19



Mark Pollins
Director, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Date: 11/25/2019



Graciela Garcia Pendleton
Attorney-Advisor, Water Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460


THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

Date: 12-02-2019


COSMO SERVIDIO
Regional Administrator
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Date: 11/13/2019


CECIL RODRIGUES
Regional Counsel
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Date: 11/7/19


DOUGLAS FRANKENTHALER
Assistant Regional Counsel
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

FOR THE COMMONWEALTH OF VIRGINIA

Date: 2.21.20

David Grandis

Mark R. Herring
Attorney General of Virginia

Donald D. Anderson
Deputy Attorney General

Paul Kugelman, Jr.
Senior Assistant Attorney General, Chief

David C. Grandis
Senior Assistant Attorney General

Office of the Attorney General
202 North 9th Street
Richmond, VA 23219
(804) 225-2741 – telephone
(804) 786-2650 – facsimile

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of *United States, et al. v. Virginia Electric and Power Company d/b/a Dominion Energy Virginia*

FOR DEFENDANT

Date:

November 8, 2019



Paul D. Koonce

President and Chief Operating Officer – Power Generation Group
Virginia Electric and Power Company

APPENDIX A

COMPLIANCE-FOCUSED ENVIRONMENTAL MANAGEMENT SYSTEM ELEMENTS

1. Environmental Policy

- a. This policy, upon which the EMS is based, must clearly communicate management commitment to achieving compliance with applicable federal, state, and local environmental statutes, regulations, enforceable agreements, and permits (hereafter, “environmental requirements”), minimizing risks to the environment from unplanned or unauthorized releases of hazardous or harmful contaminants, and continual improvement in environmental performance. The policy should also state management’s intent to provide adequate personnel and other resources for the EMS.

2. Organization, Personnel, and Oversight of EMS

- a. Identifies and defines specific duties, roles, responsibilities, and authorities of key environmental staff in implementing and sustaining the EMS (e.g., could include position descriptions and/or performance standards for all environmental department personnel, and excerpts from others having specific environmental duties, and regulatory compliance responsibilities).
- b. Includes organization charts that identify units, line management, and other individuals having environmental duties and regulatory compliance responsibilities.
- c. Includes ongoing means of communicating environmental issues and information among the various levels and functions of the organization, to include all persons working for or on behalf of the organization (e.g., on-site service providers and contractors who function as de facto employees), and for receiving and addressing their concerns.

3. Accountability and Responsibility

- a. Specifies accountability and environmental responsibilities of organization’s managers, and managers of other organizations acting on its behalf for environmental protection and risk reduction measures, assuring compliance, required reporting to regulatory agencies, and corrective actions implemented in their area(s) of responsibility.

- b. Describes incentive programs for managers and employees to perform in accordance with compliance policies, standards, and procedures.
- c. Describes potential consequences for departure from specified operating procedures, including liability for civil/administrative penalties imposed as a result of noncompliance.

4. Environmental Requirements

- a. Describes process for identifying potentially applicable environmental requirements; interpreting their applicability to specific operations, emissions, and waste streams; and effectively communicating those applicable environmental requirements to affected persons working for or on behalf of the organization.
- b. Describes a process for developing, implementing and maintaining ongoing internal compliance monitoring to ensure that facility activities conform to applicable environmental requirements. Compliance monitoring shall include inspections and measurements, as appropriate.
- c. Describes procedures for prospectively identifying and obtaining information about changes and proposed changes in environmental requirements, and incorporating those changes into the EMS (i.e., regulatory “change management”).
- d. Describes a procedure for communicating with regulatory agencies regarding environmental requirements and regulatory compliance.

5. Assessment, Prevention, and Control

- a. Identifies an ongoing process for assessing operations, for the purposes of preventing, controlling, or minimizing reasonably foreseeable releases, environmental process hazards, and risks of noncompliance with environmental requirements. This process shall include identifying operations and waste streams where equipment malfunctions and deterioration, and/or operator errors or deliberate malfeasance, are causing, or have the potential to cause: (1) unplanned or unauthorized releases of hazardous or harmful contaminants to the environment, (2) a threat to human health or the environment, or (3) noncompliance with environmental requirements.
- b. Describes process for identifying operations and activities where documented operating criteria, such as standard operating procedures (SOPs), are needed to prevent noncompliance or unplanned/unauthorized releases of hazardous or harmful contaminants, and defines a uniform process for developing, approving and implementing the documented operating criteria.

- c. Describes a system for conducting and documenting routine, objective, self-inspections by department supervisors and trained staff, especially at locations identified by the process described in (a) above, to check for malfunctions, deterioration, worker adherence to operating criteria, unusual situations, and unauthorized or unplanned releases.
- d. Describes a “management of change” process to ensure identification and consideration of environmental requirements, the environmental aspects/impacts, and potential operator errors or deliberate malfeasance during planning, design, and operation of ongoing, new, and/or changing buildings, processes, equipment, maintenance activities, and products.

6. Environmental Incident and Non-compliance Investigations

- a. Describes standard procedures and requirements for internal and external reporting of environmental incidents and noncompliance with environmental requirements.
- b. Establishes procedures for investigation, and prompt and appropriate correction of noncompliance. The investigation process includes root-cause analysis of identified problems to aid in developing the corrective actions.
- c. Describes a system for development, tracking, and effectiveness verification of corrective and preventative actions.

7. Environmental Training, Awareness, and Competence

- a. Identifies specific education and training required for organization personnel or those acting on its behalf, as well as process for documenting training provided
- b. Describes program to ensure that organization employees or those acting on its behalf are aware of its environmental policies and procedures, environmental requirements, and their roles and responsibilities within the environmental management system.
- c. Describes program for ensuring that personnel responsible for meeting and maintaining compliance with environmental requirements are competent on the basis of appropriate education, training, and/or experience.
- d. Identifies training on how to recognize operations and waste streams where equipment malfunctions and deterioration, and/or operator errors or deliberate malfeasance, are causing, or have the potential to cause: (1) unplanned or unauthorized releases of hazardous or harmful contaminants to the environment,

(2) a threat to human health or the environment, or (3) noncompliance with environmental requirements.

8. Environmental Planning and Organizational Decision-Making

- a. Describes how environmental planning will be integrated into organizational decision-making, including plans and decisions on capital improvements, product and process design, training programs, and maintenance activities.
- b. Requires establishing, on an annual basis, written targets, objectives, and action plans for improving environmental performance, by at least each operating organizational subunit with environmental responsibilities, as appropriate, including those for contractor operations conducted at the facility, and how specified actions will be tracked and progress reported. Targets and objectives must include actions that reduce the risk of noncompliance with environmental requirements and minimize the potential for unplanned or unauthorized releases of hazardous or harmful contaminants.

9. Maintenance of Records and Documentation

- a. Identifies the types of records developed in support of the EMS (including audits and reviews), who maintains them and, where appropriate, security measures to prevent their unauthorized disclosure, and protocols for responding to inquiries and requests for release of information.
- b. Specifies the data management systems for any internal waste tracking, environmental data, and hazardous waste determinations.
- c. Specifies document control procedures.

10. Pollution Prevention

- a. Describes an internal process or procedure for preventing, reducing, recycling, reusing, and minimizing waste and emissions, including incentives to encourage material substitutions. Also includes mechanisms for identifying candidate materials to be addressed by the pollution prevention program and tracking progress.

11. Continuing Program Evaluation and Improvement

- a. Describes program for periodic (at least annually) evaluation of the EMS, which specifies a process for translating assessment results into EMS improvements. The program shall include communicating findings and action plans to affected organization employees or those acting on its behalf.

- b. Describes a program for periodic audits (at least annually) of facility compliance with environmental requirements by an independent auditor(s). Audit results are reported to upper management and instances of noncompliance are addressed through the process described in element 6 above.

12. Public Involvement/Community Outreach

- a. Describes a program for ongoing community education and involvement in the environmental aspects of the organization's operations and general environmental awareness.

Appendix B

Dominion Fixed Facilities

Dominion Facility	Permit Number
Bremo Power Station	VA0004138
Chesapeake Energy Center	VA0004081
Gordonsville Power Station	VA0087033
Pittsylvania Power Station	VA0083399
Possum Point Power Station	VA0002071
Southampton Power Station	VA0082767
Yorktown Power Station	VA004103
Bath County Power Station	VA0053317
Bear Garden Generating Station	VA0090891
Chesterfield Power Station	VA0004146
Hopewell Power Station	VA0082783
Mecklenburg Power Station	VA0084069
VA City Hybrid Energy Center	VA0092746

**Duke Energy Carolinas
Response to
North Carolina Public Staff Data Request
Data Request No. NCPS 156**

Docket No. E-7, Sub 1214

**Date of Request: January 22, 2020
Date of Response: February 3, 2020**

*Per Transcript Volume
21, page 26, lines 6-23,
this document is no longer
confidential. Ktm



CONFIDENTIAL



NOT CONFIDENTIAL

Confidential Responses are provided pursuant to Confidentiality Agreement

The attached Confidential response to North Carolina Public Staff Data Request No. 156-2, was provided to me by the following individual(s): Trudy H. Morris, Project Manager II, and was provided to North Carolina Public Staff under my supervision.

Camal O. Robinson
Senior Counsel
Duke Energy Carolinas

North Carolina Public Staff
Data Request No. 156
DEC Docket No. E-7, Sub 1214
Item No. 156-2
Page 1 of 2

Request:

2. Please provide a total estimated cost, including an estimated breakdown of the costs, for CCR remediation for each site and for each impoundment pursuant to the settlement agreement entered into by and between DEC and the Department of Environmental Quality.

Confidential Response:

Please see the attached response- file names:

- “CONFIDENTIAL- PS DR 156-2 DEC Ash ARO Cash Flows- Q419-as of 113019.xls”



CONFIDENTIAL- PS
DR 156-2 DEC Ash A

- “CONFIDENTIAL- PS DR 156-2 Q42019-ARO Summary of Changes 12-31-2019-v2.xls”



CONFIDENTIAL- PS
DR 156-2 Q42019-AF

- "CONFIDENTIAL- PS DR 156-2 Q42019-ARO Summary of Changes 12-31-2019-v2.xls"-This file reflects what the Q319 estimate was, the new Q419 estimate including settlement amounts and the change between both periods. File also refers to other supplemental files:

o Belews Creek Support File Name: "CONFIDENTIAL- PS DR 156-2.0 BelewsCreek.XLS"



CONFIDENTIAL- PS
DR 156-2.0 BelewsCi

o Marshall & Roxboro Support File Name: 'CONFIDENTIAL- PS DR 156-2.0 CAMA Ash_Rox_Marshall.xls'\ tab Name "Rox EAB & WEB Cash Flows"



CONFIDENTIAL- PS
DR 156-2.0 CAMA As

North Carolina Public Staff
Data Request No. 156
DEC Docket No. E-7, Sub 1214
Item No. 156-2
Page 2 of 2

o Mayo Support File Name: "CONFIDENTIAL- PS DR 156-2.0 MAYO.XLS"



CONFIDENTIAL- PS
DR 156-2.0 MAYO.xls

o Buck, HF Lee, Cape Fear (Beneficiaton sites) Support File Name: "CONFIDENTIAL- PS DR 156-2.0 Ash Beneficiation sites full vs partial excavation.xls"

DEC has provided updated cost estimates reflecting the result of the settlement agreement entered into by and between DEC and the North Carolina Department of Environmental Quality (NCDEQ).



CONFIDENTIAL- PS
DR 156-2.0 Ash Benε

The beneficiation location at Buck includes the assumption that a variance will be granted by NCDEQ to extend beneficiation activities until 2035. The basin closure dates align with the dates included in the Closure Plans submitted to NCDEQ on December 31, 2019.

**Duke Energy Carolinas
Response to
North Carolina Public Staff Data Request
Data Request No. NCPS 156**

Docket No. E-7, Sub 1214

**Date of Request: January 22, 2020
Date of Response: February 24, 2020**



CONFIDENTIAL



NOT CONFIDENTIAL

Confidential Responses are provided pursuant to Confidentiality Agreement

The attached confidential supplemental response to North Carolina Public Staff Data Request No. 156-2, was provided to me by the following individual(s): Trudy H. Morris, Project Manager II, and was provided to North Carolina Public Staff under my supervision.

Camal O. Robinson
Senior Counsel
Duke Energy Carolinas

North Carolina Public Staff
Data Request No. 156
DEC Docket No. E-7, Sub 1214
Item No. 156-2
Page 1 of 1

Request:

2. Please provide a total estimated cost, including an estimated breakdown of the costs, for CCR remediation for each site and for each impoundment pursuant to the settlement agreement entered into by and between DEC and the Department of Environmental Quality.

Supplemental Response 2/24/2020

See updated file

CONFIDENTIAL- PS DR 156-2 DEC Ash ARO Cash Flows- Q419-as of 113019 v1.xls”

The file was updated due to an error in the actual costs in the previous spreadsheet.



CONFIDENTIAL- PS
DR 156-2 DEC Ash A

Duke Energy Carolinas									
Ash Management ARO Cash Flows Summary									
Estimates as of Q4-2019- December 30, 2019									
Actuals As of 11/30/2019									
w/ inflation									
		Total Actuals	Total CF Forecast	Actuals	Actuals	Actuals	Actuals	Actuals	Forecast
	Total Project Costs (2015+)	1/1/15 - 11/30/2019	Dec 2019- 2079	2015	2016	2017	2018	YTD Nov 2019	Dec-19
DEC									
Operating									
Allen	\$ 1,143,760,913	\$ 62,343,171	\$ 1,081,417,742	\$ 13,233,460	\$ 19,430,295	\$ 8,306,467	\$ 15,235,608	\$ 6,137,342	\$ 4,981,866
Belews Creek	\$ 807,048,227	\$ 62,115,626	\$ 744,932,601	\$ 9,861,194	\$ 26,479,748	\$ 9,534,640	\$ 7,943,584	\$ 8,296,460	\$ 3,118,400
Cliffside	\$ 582,222,351	\$ 75,571,228	\$ 506,651,123	\$ 25,869,494	\$ 21,351,036	\$ 13,088,717	\$ 9,506,805	\$ 5,755,176	\$ 6,960,067
Marshall	\$ 1,028,328,058	\$ 71,911,916	\$ 956,416,142	\$ 13,212,194	\$ 18,159,819	\$ 6,540,243	\$ 11,770,092	\$ 22,229,568	\$ 4,637,901
Total Operating Plants	3,561,359,549	271,941,941	3,289,417,608	62,176,342	85,420,898	37,470,067	44,456,089	42,418,545	19,698,234
Retired									
Buck	\$ 477,849,379	\$ 200,216,441	\$ 277,632,938	\$ 10,035,189	\$ 9,821,833	\$ 18,828,443	\$ 63,670,317	\$ 97,860,659	\$ 21,853,515
Dan River	\$ 281,226,799	\$ 222,224,436	\$ 59,002,363	\$ 38,612,244	\$ 70,263,998	\$ 40,266,416	\$ 29,523,242	\$ 43,558,535	\$ 6,931,956
Riverbend	\$ 446,136,147	\$ 414,862,785	\$ 31,273,362	\$ 39,667,308	\$ 86,404,316	\$ 134,089,437	\$ 84,304,849	\$ 70,396,874	\$ 4,787,382
WS Lee (SC)	\$ 274,658,595	\$ 109,159,959	\$ 165,498,635	\$ 19,687,325	\$ 35,344,738	\$ 37,577,688	\$ 8,498,729	\$ 8,051,480	\$ 1,213,366
Total Retired Plants	1,479,870,919	946,463,621	533,407,298	108,002,066	201,834,885	230,761,985	185,997,137	219,867,548	34,786,219
Total Duke Energy Carolinas	5,041,230,468	1,218,405,562	3,822,824,906	\$ 170,178,407	\$ 287,255,783	\$ 268,232,052	\$ 230,453,226	\$ 262,286,094	\$ 54,484,453
Item Labeled NCDEQ Settlement impact is the high level net impact resulting from the DEQ Settlement announced on January 2, 2020 to fully excavate all sites except Marshall & Roxboro in where those will only excavate CAMA Ash O									
Refer to file names for further supplemental support:									
File Name- "CONFIDENTIAL- PS DR 156-2 Q42019-ARO Summary of Changes 12-31-2019-v2.xls"-This file reflects what Q319 estimate was, new Q42019 estimate including settlement amounts and the net delta. File also refers to other									
Belews Creek Support File Name: "CONFIDENTIAL- PS DR 156-2.0 BelewsCreek.XLS"									
Marshall & Roxboro Support File Name: "CONFIDENTIAL- PS DR 156-2.0 CAMA Ash_Rox_Marshall.xls"\ tab Name "Rox EAB & WEB Cash Flows"									
Mayo Support File Name:"CONFIDENTIAL- PS DR 156-2.0 MAYO.XLS"									
Buck, HF Lee, Cape Fear (Beneficiaton sites) Support File Name: "CONFIDENTIAL- PS DR 156-2.0 Ash Beneficiation sites full vs partial excavation.xls"									

NOTE: This response and Excel file are no longer considered confidential.

Duke Energy Carolinas										
Ash Management ARO Cash Flows Summary										
Estimates as of Q4-2019- December 30, 2019										
Actuals As of 11/30/2019										
w/ inflation										
	Actuals & Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>
DEC										
Operating										
Allen	\$ 11,119,207	\$ 14,047,915	\$ 14,114,668	\$ 36,033,867	\$ 41,306,069	\$ 48,728,553	\$ 54,644,907	\$ 57,513,057	\$ 61,262,020	\$ 61,859,665
Belews Creek	11,414,860	17,492,927	27,909,435	41,916,386	44,266,899	43,034,208	48,805,486	54,079,224	52,018,981	53,409,840
Cliffside	12,715,243	19,613,851	31,544,508	50,912,459	48,288,407	52,824,895	53,779,439	42,008,431	23,948,195	13,739,665
Marshall	26,867,469	13,177,148	35,897,299	61,606,816	64,372,350	67,816,143	62,353,170	63,286,109	57,463,833	58,468,869
Total Operating Plants	62,116,780	64,331,841	109,465,909	190,469,528	198,233,726	212,403,799	219,583,002	216,886,821	194,693,029	187,478,038
Retired										
Buck	119,714,174	84,803,924	17,246,491	6,705,913	4,298,644	4,754,053	9,297,788	9,484,582	9,567,988	9,104,745
Dan River	50,490,491	14,128,514	3,728,665	1,126,972	1,313,540	1,082,216	1,004,956	1,025,055	1,045,556	1,066,380
Riverbend	75,184,256	1,622,940	3,251,538	778,015	917,381	667,364	614,367	626,654	639,187	651,928
WS Lee (SC)	9,264,846	8,831,986	37,653,199	17,549,154	24,825,899	29,819,973	22,727,791	2,542,808	583,104	594,709
Total Retired Plants	254,653,768	109,387,364	61,879,893	26,160,054	31,355,465	36,323,606	33,644,901	13,679,100	11,835,835	11,417,762
Total Duke Energy Carolinas	\$ 316,770,549	\$ 173,719,206	\$ 171,345,802	\$ 216,629,582	\$ 229,589,191	\$ 248,727,405	\$ 253,227,903	\$ 230,565,920	\$ 206,528,864	\$ 198,895,801
Item Labeled NCDEQ Settlement impact is thenly. In addition, settlement includes the assumption that a variance will be grated by NCDEQ to extend beneficaiton activities until 2035.										
Refer to file names for further supplemental s										
File Name- "CONFIDENTIAL- PS DR 156-2 Q420supplemental files:										
Belews Creek Support File Name: "CONFIDEN"										
Marshall & Roxboro Support File Name: 'CONI										
Mayo Support File Name:"CONFIDENTIAL- PS I										
Buck, HF Lee, Cape Fear (Beneficiaton sites) St										

NOTE: This response and Excel file are no longer considered confidential.

Duke Energy Carolinas												
Ash Management ARO Cash Flows Summary												
Estimates as of Q4-2019- December 30, 2019												
Actuals As of 11/30/2019												
w/ inflation												
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>	<u>2038</u>	<u>2039</u>	
DEC												
Operating												
Allen	\$ 62,988,683	\$ 64,250,605	\$ 65,537,874	\$ 60,959,054	\$ 60,700,491	\$ 64,147,149	\$ 68,930,966	\$ 68,450,274	\$ 38,331,756	\$ 20,469,000	\$ 8,016,269	
Belews Creek	52,216,217	52,583,356	47,385,219	35,963,003	22,815,840	8,367,777	3,334,813	3,401,509	3,469,539	3,538,930	21,567,456	
Cliffside	10,435,440	4,217,101	4,301,443	4,387,782	4,475,538	4,565,277	4,579,415	4,670,514	4,763,925	4,858,651	4,954,791	
Marshall	59,607,997	67,018,866	68,390,798	69,060,605	53,026,829	41,279,624	2,723,664	2,778,137	2,833,700	12,002,842	12,242,899	
Total Operating Plants	185,248,336	188,069,927	185,615,334	170,370,445	141,018,698	118,359,827	79,568,859	79,300,435	49,398,920	40,869,423	46,781,415	
Retired												
Buck	6,963,161	6,644,526	6,792,213	6,644,866	12,056,864	10,179,597	9,698,470	1,173,304	1,198,215	1,223,521	1,249,257	
Dan River	1,066,315	1,087,641	1,109,394	1,131,700	1,154,334	1,177,507	1,170,947	1,194,181	1,218,065	1,242,217	1,266,670	
Riverbend	643,604	656,476	669,605	683,056	696,717	710,695	706,144	720,175	734,579	749,167	763,957	
WS Lee (SC)	585,231	596,936	608,874	621,129	633,552	646,280	625,636	638,030	650,791	663,673	676,696	
Total Retired Plants	9,258,311	8,985,579	9,180,087	9,080,752	14,541,467	12,714,079	12,201,197	3,725,691	3,801,649	3,878,577	3,956,580	
Total Duke Energy Carolinas	\$ 194,506,647	\$ 197,055,506	\$ 194,795,420	\$ 179,451,196	\$ 155,560,165	\$ 131,073,906	\$ 91,770,056	\$ 83,026,126	\$ 53,200,568	\$ 44,748,000	\$ 50,737,994	
<i>Item Labeled NCDEQ Settlement impact is the</i>												
<i>Refer to file names for further supplemental s</i>												
<i>File Name- "CONFIDENTIAL- PS DR 156-2 Q420</i>												
<i>Belews Creek Support File Name: "CONFIDENT</i>												
<i>Marshall & Roxboro Support File Name: "CON</i>												
<i>Mayo Support File Name:"CONFIDENTIAL- PS</i>												
<i>Buck, HF Lee, Cape Fear (Beneficiaton sites) S</i>												

NOTE: This response and Excel file are no longer considered confidential.

Duke Energy Carolinas												
Ash Management ARO Cash Flows Summary												
Estimates as of Q4-2019- December 30, 2019												
Actuals As of 11/30/2019												
w/ inflation												
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>	<u>2047</u>	<u>2048</u>	<u>2049</u>	<u>2050</u>	
DEC												
Operating												
Allen	\$ 4,186,352	\$ 4,273,777	\$ 4,362,785	\$ 4,695,387	\$ 4,547,496	\$ 4,642,947	\$ 4,740,534	\$ 4,840,312	\$ 4,942,379	\$ 5,054,930	\$ 3,587,006	
Belews Creek	21,397,363	3,755,541	3,830,652	3,907,265	3,985,410	4,065,118	4,146,421	4,229,349	4,313,936	4,400,215	2,892,580	
Cliffside	5,132,072	5,155,736	5,258,259	5,363,425	5,470,910	5,580,328	5,691,935	5,805,774	20,436,305	6,108,783	3,986,055	
Marshall	3,007,145	3,067,288	3,128,634	3,191,206	3,255,031	3,320,131	3,386,534	3,454,265	3,523,350	3,593,817	2,512,120	
Total Operating Plants	33,722,932	16,252,341	16,580,330	17,157,283	17,258,847	17,608,524	17,965,423	18,329,699	33,215,970	19,157,745	12,977,761	
Retired												
Buck	1,276,157	1,303,439	1,331,169	1,432,114	1,388,978	1,418,900	1,449,527	1,480,882	1,513,005	1,550,260	1,594,995	
Dan River	1,292,289	1,318,135	1,344,274	1,371,159	1,398,665	1,426,638	1,455,171	1,484,274	1,513,986	678,451	124,838	
Riverbend	779,378	794,965	810,754	826,969	843,549	860,420	877,628	895,181	913,097	933,948	124,838	
WS Lee (SC)	690,413	704,221	718,163	732,526	747,229	762,174	777,417	792,966	808,842	828,359	853,296	
Total Retired Plants	4,038,237	4,120,761	4,204,359	4,362,768	4,378,421	4,468,131	4,559,744	4,653,302	4,748,930	3,991,018	2,697,968	
Total Duke Energy Carolinas	\$ 37,761,169	\$ 20,373,102	\$ 20,784,689	\$ 21,520,051	\$ 21,637,268	\$ 22,076,656	\$ 22,525,167	\$ 22,983,002	\$ 37,964,900	\$ 23,148,763	\$ 15,675,729	
<i>Item Labeled NCDEQ Settlement impact is the</i>												
<i>Refer to file names for further supplemental s</i>												
<i>File Name- "CONFIDENTIAL- PS DR 156-2 Q420</i>												
<i>Belews Creek Support File Name: "CONFIDENT</i>												
<i>Marshall & Roxboro Support File Name: "CON</i>												
<i>Mayo Support File Name:"CONFIDENTIAL- PS</i>												
<i>Buck, HF Lee, Cape Fear (Beneficiaton sites) St</i>												

NOTE: This response and Excel file are no longer considered confidential.

Duke Energy Carolinas												
Ash Management ARO Cash Flows Summary												
Estimates as of Q4-2019- December 30, 2019												
Actuals As of 11/30/2019												
w/ inflation												
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	<u>2051</u>	<u>2052</u>	<u>2053</u>	<u>2054</u>	<u>2055</u>	<u>2056</u>	<u>2057</u>	<u>2058</u>	<u>2059</u>	<u>2060</u>	<u>2061</u>	<u>2062</u>
DEC												
Operating												
Allen	\$ 3,667,123	\$ 3,749,590	\$ 3,840,558	\$ 3,934,960	\$ 4,054,931	\$ 4,200,586	\$ 2,540,392	\$ 2,599,749	\$ 2,660,727	\$ 2,359,958	\$ 2,407,158	\$ 2,455,301
Belews Creek	2,950,431	3,009,440	3,069,629	3,131,021	3,193,642	3,257,515	3,322,665	3,389,118	3,456,901	3,526,039	3,596,559	3,668,490
Cliffside	4,069,522	4,155,370	4,253,452	4,355,555	4,497,276	2,084,406	2,140,475	373,469	416,267	292,235	298,080	304,042
Marshall	2,562,363	2,613,610	2,665,882	2,719,200	2,773,584	2,829,055	2,885,637	2,943,349	3,002,216	3,062,261	3,123,506	3,185,976
Total Operating Plants	13,249,438	13,528,010	13,829,520	14,140,737	14,519,432	12,371,562	10,889,168	9,305,686	9,536,111	9,240,493	9,425,303	9,613,809
Retired												
Buck	1,631,136	1,571,828	1,611,282	1,652,351	1,706,553	1,773,944	1,887,484	1,998,701	2,225,206	775,729	791,243	807,068
Dan River	32,979	33,639	34,312	34,998	35,698	36,412	37,140	37,883	38,641	-	-	-
Riverbend	32,979	33,639	34,312	34,998	35,698	36,412	37,140	37,883	38,641	-	-	-
WS Lee (SC)	871,399	890,062	912,009	934,966	35,698	36,412	37,140	37,883	38,641	-	-	-
Total Retired Plants	2,568,495	2,529,168	2,591,915	2,657,314	1,813,647	1,883,180	1,998,904	2,112,350	2,341,128	775,729	791,243	807,068
Total Duke Energy Carolinas	\$ 15,817,933	\$ 16,057,177	\$ 16,421,436	\$ 16,798,051	\$ 16,333,079	\$ 14,254,742	\$ 12,888,073	\$ 11,418,036	\$ 11,877,239	\$ 10,016,222	\$ 10,216,546	\$ 10,420,877
Item Labeled NCDEQ Settlement impact is the												
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File Name- "CONFIDENTIAL- PS DR 156-2 Q420												
Belews Creek Support File Name: "CONFIDENTI												
Marshall & Roxboro Support File Name: "CONFIDENTI												
Mayo Support File Name:"CONFIDENTIAL- PS I												
Buck, HF Lee, Cape Fear (Beneficiaton sites) St												

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Duke Energy Carolinas														
Ash Management ARO Cash Flows Summary														
Estimates as of Q4-2019- December 30, 2019														
Actuals As of 11/30/2019														
w/ inflation														
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	<u>2063</u>	<u>2064</u>	<u>2065</u>	<u>2066</u>	<u>2067</u>	<u>2068</u>	<u>2069</u>	<u>2070</u>	<u>2071</u>	<u>2072</u>	<u>2073</u>	<u>2074</u>	<u>2075</u>	<u>2076</u>
DEC														
Operating														
Allen	\$ 2,504,407	\$ 2,554,495	\$ 2,605,585	\$ 2,657,696	\$ 2,710,850	\$ 2,765,067	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Belews Creek	3,741,860	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliffside	310,123	316,325	322,652	329,105	335,687	342,400	349,248	356,233	363,358	370,625	378,038	385,598	393,310	401,177
Marshall	3,249,695	3,314,689	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Plants	9,806,085	6,185,509	2,928,236	2,986,801	3,046,537	3,107,468	349,248	356,233	363,358	370,625	378,038	385,598	393,310	401,177
Retired														
Buck	823,209	839,674	856,467	-	-	-	-	-	-	-	-	-	-	-
Dan River	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Riverbend	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS Lee (SC)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Retired Plants	823,209	839,674	856,467	-	-	-	-	-	-	-	-	-	-	-
Total Duke Energy Carolinas	\$ 10,629,294	\$ 7,025,183	\$ 3,784,703	\$ 2,986,801	\$ 3,046,537	\$ 3,107,468	\$ 349,248	\$ 356,233	\$ 363,358	\$ 370,625	\$ 378,038	\$ 385,598	\$ 393,310	\$ 401,177
<i>Item Labeled NCDEQ Settlement impact is the</i>														
<i>Refer to file names for further supplemental s</i>														
<i>File Name- "CONFIDENTIAL- PS DR 156-2 Q420</i>														
<i>Belews Creek Support File Name: "CONFIDENT</i>														
<i>Marshall & Roxboro Support File Name: 'CONI</i>														
<i>Mayo Support File Name:"CONFIDENTIAL- PS I</i>														
<i>Buck, HF Lee, Cape Fear (Beneficiaton sites) St</i>														

NOTE: This response and Excel file are no longer considered confidential.

Duke Energy Carolinas			
Ash Management ARO Cash Flows Summary			
Estimates as of Q4-2019- December 30, 2019			
Actuals As of 11/30/2019			
w/ inflation			
	Forecast	Forecast	Forecast
	<u>2077</u>	<u>2078</u>	<u>2079</u>
DEC			
Operating			
Allen	\$ -	\$ -	\$ -
Belews Creek	-	-	-
Cliffside	409,200	228,514	-
Marshall	-	-	-
Total Operating Plants	409,200	228,514	-
Retired			
Buck	-	-	-
Dan River	-	-	-
Riverbend	-	-	-
WS Lee (SC)	-	-	-
Total Retired Plants	-	-	-
Total Duke Energy Carolinas	\$ 409,200	\$ 228,514	\$ -
<i>Item Labeled NCDEQ Settlement impact is the</i>			
<i>Refer to file names for further supplemental s</i>			
<i>File Name- "CONFIDENTIAL- PS DR 156-2 Q420</i>			
<i>Belews Creek Support File Name: "CONFIDENTI</i>			
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<i>Mayo Support File Name:"CONFIDENTIAL- PS I</i>			
<i>Buck, HF Lee, Cape Fear (Beneficiaton sites) S</i>			



Brian D. Savoy
SVP, Chief Accounting Officer and Controller
550 South Tryon Street
Mail Code: DEC 44-A
Charlotte, NC 28202
o 704-382-6242
f 980-373-6797

December 21, 2015

Ms. Gail L. Mount
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

E-7 SUB 1110
E-2 SUB 1103

RE: Explanation of Accounting Treatment Related to Coal Ash Basin Obligations

Dear Ms. Mount:

Duke Energy Progress, LLC ("DEP") and Duke Energy Carolinas, LLC ("DEC") (collectively, the "Companies") respectfully notify the Commission of certain accounting entries, which are consistent with Generally Accepted Accounting Principles ("GAAP"), Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts and General Instruction No. 25, and regulatory accounting practices related to the establishment of certain Asset Retirement Obligations ("AROs") associated with federal and state requirements related to coal ash management and ash basin closure costs. The Companies also notify the Commission of their treatment of actual expenditures related to compliance with such federal and state requirements, and the establishment of a regulatory asset for such expenditures.

Description of Requirements Giving Rise to the AROs

In accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification for Asset Retirement and Environmental Obligations ("ASC 410-20")

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and FERC General Instruction No. 25, each of the Companies records an ARO when it has a legal obligation to incur retirement costs associated with the retirement of a long-lived asset and the obligation can be reasonably estimated. These accounting requirements dictate the measurement and recognition of AROs for companies in general. The Commission has issued orders allowing the Companies to defer all impacts of establishing an ARO until these costs can be considered in future rate making decisions.¹ In addition, DEP's rates currently include a component for ash remediation costs as a part of Cost of Removal included in depreciation rates; however, only a small balance has been collected for such costs since DEP's last retail rate case in North Carolina.

In April 2015, the Environmental Protection Agency ("EPA") published in the Federal Register a rule to regulate the disposal of Coal Combustion Residuals ("CCRs") from electric utilities as solid waste.² The federal regulation classifies CCR as nonhazardous waste under Subtitle D of the Resource Conservation and Recovery Act and allows beneficial use of CCRs with some restrictions. The federal regulation applies to all new and existing landfills, new and existing surface impoundments, structural fills and CCR piles. The federal regulation establishes requirements regarding landfill design, structural integrity design and assessment criteria for surface impoundments, groundwater monitoring and protection procedures and other operational and reporting procedures to ensure the safe disposal and management of CCR. In addition to the

¹ *In the Matter of Duke Power's Petition for Authority to Place Certain Asset Retirement Obligation Costs in a Deferred Account*, NCUC Docket No. E-7, Sub 723, *Order Granting Motion for Reconsideration and Allowing Deferral of Costs* (August 8, 2003); and *In the Matter of Carolina Power & Light Company's Petition for Authority to Place Certain Asset Retirement Obligation Costs in a Deferred Account*, NCUC Docket No. E-2, Sub 826, *Order Granting Motion for Reconsideration and Allowing Deferral of Costs* (August 12, 2003).

² Hazardous and Solid Waste Management system: Disposal of Coal Combustion Residuals from Electric Utilities promulgated by the United States Environmental Protection Agency ("EPA") and published on April 17, 2015, 80 Fed Reg. 21302 ("CCR rule").

requirements of the federal CCR regulation, CCR landfills and surface impoundments will continue to be independently regulated by most states, including North Carolina.

In September 2014, the North Carolina Coal Ash Management Act (the "Coal Ash Act") 2014 N.C. Sess. Laws 122; 2014 N.C. Ch. 122; 2013 N.C. SB 729, became law and was amended in June 2015, by the Mountain Energy Act. The Coal Ash Act, as amended,

- (i) establishes a Coal Ash Management Commission ("Coal Ash Commission")³ to oversee handling of coal ash within the state;
- (ii) prohibits construction of new and expansion of existing ash impoundments and use of existing impoundments at retired facilities;
- (iii) requires closure of ash impoundments at DEP's Sutton Plant and DEC's Riverbend and Dan River stations no later than August 1, 2019 and DEP's Asheville Plant no later than August 1, 2022;
- (iv) requires dry disposal of fly ash at active plants, excluding the Asheville Plant, not retired by December 31, 2018;
- (v) requires dry disposal of bottom ash at active plants, excluding the Asheville Plant, by December 31, 2019, or retirement of active plants;
- (vi) requires all remaining ash impoundments in North Carolina to be categorized as high-risk, intermediate-risk or low-risk no later than December 31, 2015 by the North Carolina Department of Environment Quality ("DEQ," formally known as the NC Department of Environmental and Natural Resources, or "DENR") with the method of closure and timing to be based upon the assigned risk, with closure no later than December 31, 2029;
- (vii) establishes requirements to deal with groundwater and surface water impacts from impoundments; and
- (viii) enhances the level of regulation for structural fills utilizing coal ash.

³ The structure of the Coal Ash Commission has been challenged as a violation of the constitutional separation of powers between the Executive Branch and the General Assembly. A decision by the N.C. Supreme Court is pending. Depending on the result, the decision could place doubt on previous actions by the Coal Ash Commission.

The Coal Ash Act includes a variance procedure for compliance deadlines and modification of requirements regarding structural fills and compliance boundaries. The Companies have and will periodically submit to DEQ site-specific coal ash impoundment closure plans or excavation plans in advance of closure. These plans and all associated permits must be approved by DEQ before any excavation or closure work can begin.

In 2014 and 2015, DEC executed consent agreements with the South Carolina Department of Health and Environmental Control ("SCDHEC") and conservation groups requiring the excavation of an inactive ash basin and ash fill area at the W.S. Lee Steam Station. In July 2015, DEP executed a consent agreement with the SCDHEC requiring the excavation of an inactive ash fill area at the Robinson Plant within eight years. The W.S. Lee Station site and the Robinson Plant are required to be closed pursuant to the recently issued federal CCR rule and/or the provisions of these consent agreements which are consistent with the federal CCR closure requirements described above.

Accounting for Coal Ash Basin AROs

AROs are legal obligations associated with the retirement of a tangible long-lived asset that results from the acquisition, construction, or development and (or) the normal operation of a long-lived asset and also include environmental remediation liabilities that result from the normal operation of a long-lived asset and that is associated with the retirement of that asset. AROs recorded on the DEC and DEP Balance Sheets at November 30, 2015 are based upon the legal obligation for closure of coal ash basins and the disposal of related ash as a result of the federal and state requirements described above, and total approximately \$1.84 billion for DEC and approximately \$2.13 billion for DEP. These AROs are included in the Companies' financials as allowed by NCUC Docket No. E-7, Sub 723, Order dated August 8, 2003 and

NCUC Docket No. E-2, Sub 826, Order dated August 12, 2003. The actual compliance costs incurred may be materially different from these estimates based on the timing and requirements of the final regulations.

Liabilities Recorded Related to the AROs

The Companies measure and recognize AROs in accordance with ASC 410-20 (previously Statement of Financial Accounting Standards "SFAS" No. 143). ASC 410-20 requires that the fair value of a liability for an ARO be recognized in the period in which it is incurred if a reasonable estimate of fair value can be made. As such, the coal ash ARO liability balance as of November 30, 2015 is based on the initial liability recognized in September 2014 upon the passage of the Coal Ash Act, as adjusted for accretion expense (discussed further below), cash settlements, and remeasurements of the liability. Remeasurements to the liability are due to revisions in either the timing or the amount of the original estimate of undiscounted cash flows. Typically, remeasurements occur when there are significant new events and information (e.g., passage of the federal CCR regulation, changes to closure plans, etc.) used by management in the estimation of future expected cash outflows.

The ARO was initially calculated, along with subsequent remeasurements and additions to the liability, using an expected present value technique of probability weighted discounted cash flows. These cash flows were based on management's best estimate of projected cash flows and legal interpretation of the various federal and state requirements described above. As the obligations can be satisfied by various compliance alternatives selected based on management's site-specific risk assessments over various timeframes, the uncertainty surrounding the obligations was factored into the ARO recognition by assessing the likelihood (probability) that a certain type of compliance method would be required.

These estimated cash flows, along with various other financial assumptions required by ASC 410-20 (including inflation and discount rates, profit margin and risk premium) were used to properly measure the AROs on the balance sheet at fair value, as defined by GAAP.

Because the liability is based on a present value calculation using many assumptions, including a credit-adjusted risk-free discount rate, the liability will grow simply from the passage of time. This increase to the liability is known as accretion. From January 1, 2015 to November 30, 2015, accretion totaled \$59 million and \$65 million for DEC and DEP, respectively.

Assets Associated with the Liability Recorded Related to the AROs

At the time the ARO liability is recorded, a corresponding and equivalent ARO asset is recorded on the books, as part of the cost of the associated coal plant in the property, plant and equipment ("PP&E") accounts, or if associated with a retired coal plant, recorded in regulatory assets. The ARO PP&E balance is depreciated over the remaining estimated plant lives, and such depreciation expenses is deferred into regulatory asset accounts. From January 1, 2015 to November 30, 2015, ARO depreciation totaled \$217 million and \$325 million for DEC and DEP, respectively. Additionally, as discussed above, accretion is added to the ARO liability each reporting period to account for the time value of money, so that at the time of retirement, the recorded ARO liability will be sufficient to provide for the cash outlays necessary to meet the legal obligation. Thus, the ARO expense recorded each year generally includes two components: depreciation expense associated with the ARO asset on active plants and accretion expense measuring the change in the total ARO liability due to the time value of money. Consistent with the requirements of the Commission's Order dated August 8, 2003 in Docket No. E-7, Sub 723 and Order dated August 12, 2003 in Docket No. E-2, Sub 826, all income statement impacts related to AROs ultimately reside in regulatory asset accounts.

The FASB recognized that differences may exist between the requirements of ASC 410-20 and the treatment of ARO cost for regulatory purposes, and accordingly, provided that a regulated entity subject to ASC 980, *Regulated Operations*, (formerly SFAS 71, *Accounting for the Effects of Certain Types of Regulation*), could recognize a regulatory asset or liability for any differences between the two approaches, if the facts and circumstances meet the requirements of ASC 980 for such recognition.

Net Asset Balance Primarily Relates to Cash Expenditures

As of November 30, 2015, PP&E (active plants) and regulatory assets (inactive plants) related to coal ash basin AROs total approximately \$4.19 billion, combined for both categories of assets and DEC and DEP. The related asset retirement obligation liabilities total approximately \$3.97 billion, resulting in a net asset balance of approximately \$220.5 million. Of this amount, \$231.9 million relates to cash expenditures incurred in 2015 associated with ash basin closure, and \$2.7 million relates to carrying costs, partially offset primarily by recoveries through existing DEP cost of removal rates.

As a result of the deferral accounting applied to this ARO liability, actual costs incurred to comply with the federal and state regulations regarding closure of ash basins are being deferred. As coal ash basin closure compliance costs are incurred, the Companies are reducing the ARO liability and the associated ARO regulatory asset described above, while simultaneously creating a corresponding separate regulatory asset that represents actual cash expenditures incurred. As the Companies are excluding all associated coal ash ARO deferrals for earnings surveillance reporting and are funding these expenditures with its debt and equity capitalization, the Companies are recording a debt and equity return ("carrying charge") on the aforementioned net asset for regulatory purposes. GAAP requires the equity return to be

deferred (i.e., not recognized) until rate recovery has begun, and thus the only carrying charge recorded to date for GAAP purposes is the debt return, which totals approximately \$2.7 million combined for the Companies through November 30, 2015. Ultimately, only actual costs resulting in cash outlays by the Companies related to ash basin closure, plus carrying charges, will result in amounts for which the Companies will request accounting and recovery treatment in future filings before this Commission. Coal ash basin costs that relate to activities outside the scope of the aforementioned legally required activities (e.g., Federal CCR rules and the NC CAMA legislation) are being expensed immediately as Operations and Maintenance ("O&M") expense. In addition, capital conversion costs such as those related to conversion to dry or fly ash equipment are recorded in Construction Work in Progress.

The Companies do not seek any further specific accounting approval at present due to the uncertainties in North Carolina regarding the closure costs of coal ash basins. Actual costs to be incurred will be dependent upon factors that vary from site to site. The most significant factors are the method and time frame of closure at the individual sites. Closure methods considered include removing the water from the basins and capping the ash with a synthetic barrier, excavating and relocating the ash to a lined structural fill or lined landfill, or recycling the ash for concrete or some other beneficial use. Under the previously cited Coal Ash Act, DEQ is required to prioritize sites by December 31, 2015. That process has not been completed. Once the DEQ determinations are made, the Companies will need to evaluate the recommendation and develop more specific cost estimates. The ultimate method and timetable for closure will be in compliance with standards set by the EPA rule and any state regulations. The ARO estimates will be adjusted as additional information is gained through the closure process, including acceptance and approval of compliance approaches which may change management

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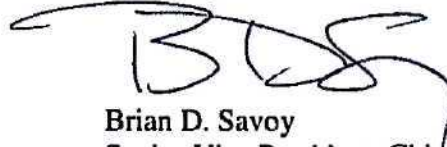
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assumptions, and may result in a material change to the recorded ARO. In addition, on March 5, 2015, Governor McCrory filed a lawsuit challenging the constitutionality of the Coal Ash Commission. That case is currently pending before the North Carolina Supreme Court.⁴ Pending a decision in that case, activity by the Coal Ash Commission has been suspended. Further, if the Court should rule that the actual structure of the Coal Ash Commission violates the constitutional provision of the separation of powers, the lawfulness of previous actions by the Commission could be subject to legal challenge.

The Companies provide this explanation of their accounting for the above-described ash basin closure and compliance costs for the Commission's information at this time. At a later date, when there is sufficient clarity in North Carolina regarding the closure of ash basins, the Companies will bring this matter before the Commission for ultimate disposition.

If you have any questions, please let me know.

Sincerely,



Brian D. Savoy
Senior Vice President, Chief Accounting Officer and Controller

cc: Antoinette R. Wike
Christopher J. Ayers
Chairman Edward S. Finley, Jr
Commissioner Don M. Bailey
Commissioner Bryan E. Beatty
Commissioner ToNola D. Brown-Bland
Commissioner Jerry C. Dockham
Commissioner James G. Patterson
Commissioner Susan Warren Rabon

⁴ *Patrick L. McCrory, et al v. Phillip E. Berer, et al. NC Supreme Court, Case No. 113A15 (2015).*

From: Stowe, Allen
Sent: Friday, April 19, 2013 1:43 PM
To: Watts, Debra
Cc: Toepfer, John; Smith, Eric; Wilcox, Betty
Subject: RE: Ash Pond Closure Draft

Debra,

Attached are our consolidated comments on ash pond closure guidelines and closure letter. We very much appreciate the opportunity to review and provide input. If possible, we would like to review the revised documents before they are finalized as well.

Please let me know if you have any questions or comments regarding these documents.

Thanks

Allen Stowe
Water & Natural Resources
Duke Energy
704-382-4309 (Office)
704-516-5548 (Cell)
Allen.Stowe@duke-energy.com

From: Watts, Debra [<mailto:debra.watts@ncdenr.gov>]
Sent: Tuesday, March 26, 2013 5:55 PM
To: Stowe, Allen
Cc: Toepfer, John; Smith, Eric; Wilcox, Betty; Hickok, Linda; Brown, Kevin; Zarzar, Issa; Sullivan, Ed M; Ed Henriques
Subject: Ash Pond Closure Draft

Allen

As discussed, the APS staff has developed ash pond closure guidelines over the past year. Much of this was based on what you presented during our Weatherspoon closure meetings, so you shouldn't be too surprised as to what we are sending you. The policy letter is titled "Ash Pond Closure Letter 3-26-13 Final Draft..." and the list of requirements (attachment to the policy) is titled "Draft Closure Requirements 3-25-13."

Ted has seen this although he has not signed it. We are looking at receiving feedback from our stakeholders, Duke and the former Progress Energy, before going forward with this. The Environmental Groups will also be asked for feedback, and will receive a copy of this after we incorporate any changes you may have.

We would appreciate you distributing this to whomever it needs to be seen by. Also, we'd like to have your consolidated comments by April 19th (3 weeks), but if you need more time, please let us know.

Thanks for your assistance with this. Let us know if you have any questions.

Debra J. Watts, Supervisor
Groundwater Protection Unit
Aquifer Protection Section

Ash Pond Closure Plan Requirements

The purpose of the following outline is to aid in the development of an ash pond closure plan. These plans must be submitted to the Aquifer Protection Section (APS) Chief for approval.

- 1) Facility and Ash Pond Description. Briefly describe or provide the following:
 - a) Site and history of site operations.
 - b) Ash handling and storage operations.
 - c) Types of flows discharging into the pond (e.g. ash transport water, stormwater runoff, chemical and non-chemical metal cleaning wastewaters, coal pile runoff, miscellaneous equipment cooling and lubricating water, etc.)
 - d) Estimated volume of material contained in the ash pond(s).
 - e) Analysis of the structural integrity of dikes and/or dams associated with ash pond.
 - f) Composition of liner (lined or unlined pond).
 - g) Summarized results of any previous environmental investigations performed at the site.
- 2) Site Map. Provide a site map that illustrates the following:
 - a) All structures associated with operations of the ash ponds within the power plant property boundary.
 - b) All identified current and former ash disposal and storage areas including structural fills.
 - c) All property boundaries and established compliance boundaries.
 - d) All known potential receptors (i.e. water supply wells, surface water bodies (streams, springs, lakes, ponds and other surface drainage features), and wetlands) within 1500 feet of the ash pond boundary.
 - e) Topographic contours of the site (no less than 5 ft. intervals).
 - f) Locations of all on-site active and inactive Division of Waste Management (DWM) permitted solid waste facilities along with their associated compliance boundaries and monitoring wells.
 - g) All existing and proposed groundwater monitoring wells associated with monitoring of the active and inactive ash ponds.
 - h) All existing and proposed sample collection locations associated with the operation or closure of the ash pond(s).
- 3) Hydrogeologic, Geologic, and Geotechnical Investigation. Refer to the Policy for Hydrogeologic Investigation and Reporting dated May 31, 2007. Provide the following:
 - a) A brief description of the hydrogeology and geology of the site.
 - b) A description of the stratigraphy of the geologic units underlying the ash ponds.
 - c) The saturated hydraulic conductivity for the ash, liner (if present), and all identified stratigraphic units underlying the ash pond(s).
 - d) The geotechnical properties for the ash, liner (if present), and the uppermost identified stratigraphic unit underlying the ash pond(s). Analyses should include the following:
 - i) Soil Classification by Unified Soil Classification System
 - ii) In-place moisture content

- iii) Particle size distribution
- iv) Atterberg limits
- v) Specific gravity
- vi) Effective friction angle
- vii) Maximum dry density
- viii) Optimum moisture content
- ix) Permeability
- e) Provide laboratory results for chemical analysis of the ash basin pond water, ash, and ash-affected soil. Identify constituents with concentrations found to be in excess of 15A NCAC 02L.0202 Groundwater Quality Standards.
- f) A map that illustrates the following:
 - i) potentiometric contours and flow directions for all identified aquifers underlying the ash pond(s) (shallow, intermediate, and deep).
 - ii) the known horizontal extent of areas where 15A NCAC 02L.0202 Groundwater Quality Standards are exceeded.
- g) Cross-sections that illustrate the following:
 - i) Vertical and horizontal extent of the ash within the ash pond
 - ii) Stratigraphy of the geologic units underlying the ash pond.
 - iii) the vertical extent of areas where 15A NCAC 02L.0202 Groundwater Quality Standards are exceeded.
- 4) Hydrogeologic Modeling. Please refer to the Groundwater Modeling Policy and Reporting Policy dated May 31, 2007.
 - a) Perform groundwater modeling based on the design of the proposed pond closure method.
 - b) The groundwater modeling should:
 - i) be based on the site hydrogeologic conceptual model developed using the Hydrogeologic Investigation and Reporting Policy.
 - ii) provide predictions on post-closure groundwater elevations, groundwater flow directions and velocities
 - iii) provide predictions at the compliance boundary for constituents identified in part 3 (e) as exceeding 15A NCAC 02L.0202 Groundwater Quality Standards.
 - c) If required, describe the actions necessary to demonstrate compliance with 15A NCAC 02L.0202 Groundwater Quality Standards and 15A NCAC 02L .0106, as applicable.
- 5) Closure Method
 - a) Provide a description of the closure method. Closure methods include:
 - i) Closure-in-Place. This alternative entails placing an engineered cover system such as a composite geomembrane, impermeable clay, and/or a soil cover over the ash pond. No ash or ash-affected soil would leave the ash pond area.
 - ii) Clean Closure. This alternative assumes that all coal ash can be excavated and the ash pond area will be returned to a non-erosive and stable condition.
 - iii) Hybrid Closure. This alternative entails consolidating ash and ash-affected soil into as small area as feasible within the ash pond footprint. An engineered cover system (e.g. composite geomembrane, impermeable

- clay, and/or a soil cover) would be installed over the consolidated ash and ash-affected soil. The remaining ash pond area will be returned to a non-erosive and stable condition.
- iv) Other closure methods as approved by the Aquifer Protection Section Chief. These methods must be demonstrated to be effective at protecting water quality.
 - b) Provide any plans for beneficial reuse of the coal ash under 15A NCAC 02T .1200 (if applicable).
 - c) Identify the closure method for the ash pond(s).
 - d) Provide all engineering drawings, schematics, and specifications for the proposed closure method.
 - i) If required by G.S. 89C, engineering design documents should be prepared, signed, and sealed by a professional engineer.
 - ii) Describe the construction quality assurance and quality control program including:
 - A) responsibilities and authorities;
 - B) monitoring and testing activities; and
 - C) sampling strategies
 - D) reporting requirements
 - e) Describe the provisions for disposal of wastewater through the NPDES permit or any other relevant permit. The facility needs to meet all the requirements of the NPDES wastewater permit during the dewatering of the ash pond.
 - f) Describe the provisions for disposal or removal of ash. Identify the site and the permit number for ash sent to a permitted disposal site. If ash is left in place:
 - i) Describe how the ash will be stabilized during closure and post closure.
 - ii) Estimate the volume of ash left in place.
 - g) Identify all permits that are necessary (i.e. permits that will need to be acquired or modified) to complete closure activities.
- 6) Post-Closure Plan. Post-Closure Plans should be designed for a minimum of 30 years. If required by G.S. 89C, these plans should be signed and sealed by a professional engineer.
- a) Describe the post-closure care and maintenance activities.
 - b) Demonstrate the long-term control of all leachate, affected groundwater, and stormwater
 - c) Describe the Groundwater Monitoring Program, to include:
 - i) Post closure groundwater monitoring including parameters to be sampled and sampling schedules
 - ii) Any additional monitoring well/s installations, including a map with the proposed location/s and well construction details.
 - e) The length of the post-closure care period may be decreased and/or the frequency and parameter list may be modified by the Section if the owner demonstrates that the reduced period and/or modifications are sufficient to protect human health and the environment and this demonstration is approved by the Section.
 - f) Following completion of the post-closure care period, the owner shall notify the Section that a certification, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the file.

- 7) Schedules
 - a) Provide an estimate of the milestone dates for all activities related to closure and post-closure..
- 8) Future Site Use
 - a) Describe the anticipated future site use.
 - b) Determine the necessity for deed restrictions following closure.

DRAFT



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Charles Wakild, P. E.
DirectorPat McCrory
GovernorJohn E. Skvarla, III
Secretary

March XX, 2013

MEMORANDUM

TO: Aquifer Protection Section Staff
Surface Water Protection Section Staff
Interested Parties

THROUGH: Jay Zimmerman, P.G.
Aquifer Protection Section Chief

THROUGH: Matt Matthews
Surface Water Protection Section Chief

FROM: Ted L. Bush, Jr.
Deputy Director

SUBJECT: Guidelines for the Closure of Ash Ponds

Purpose

The purpose of these guidelines is to provide a course of action for the closure of ash ponds at coal-fired power plant facilities permitted by the Division of Water Quality (DWQ). There are fourteen (14) major existing or recently retired coal-fired power plants in North Carolina that are regulated under North Carolina General Statute 143.215.1. These same facilities are further regulated by 15A NCAC 2L, *Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina*, but are not regulated as a solid or hazardous waste.

In order to develop guidelines for ash pond closures, the Aquifer Protection Section (APS) researched and incorporated elements from the North Carolina Division of Waste Management (DWM) Solid Waste Rules, the Environmental Protection Agency (EPA), and other State guidelines and rules. Although corrective action is not the focus of these guidelines, closure of these structures can be considered an important tool if corrective action is required. However, the basis of these guidelines is to assist permittees in obtaining a closure approval from DWQ.

Closure Plan Approval

Each coal ash facility presents a unique set of challenges for closure due to their size, complexity, and location. Therefore, to allow the most flexibility in solutions to these challenges, the attached guidelines only outline the requirements versus spelling out specific

details, thus facilitating the decisions the permittee may need to make to determine the best way to meet these requirements. A closure plan must still be submitted that details all aspects of the closure and post-closure activities at the facility, and should include the following elements:

- Facility and Ash Pond Description
- Site Maps
- Hydrogeologic, Geologic, and Geotechnical Investigation
- Closure Method
- Hydrogeologic Modeling
- Post-closure plan
- Schedules
- Future Site Use

Once the closure plan is developed, the permittee of the facility must submit this plan along with a letter to the APS Section Chief requesting closure.

Optional Pre-Submittal Meeting

Although a complete plan is required before approval can be obtained, a pre-submittal meeting is highly encouraged where the applicant must provide a minimum portion of the application (e.g. facility and ash pond description; site maps; and hydrogeologic, geologic, and geotechnical investigation) in addition to the chosen method of closure. Past DWQ experience has shown that pre-submittal meetings have been very beneficial to improving review timeliness since applications tend to be more complete. In addition, the pre-submittal meeting provides an opportunity to discuss the project in general, the history of the site, design considerations, and any initial questions the reviewers may have. Once the applicant and reviewers have had a chance to meet, the applicant must submit their complete closure request for approval as discussed above.

Submittal Requirements

The requestor should submit five (5) copies of the closure plan to the APS Section Chief and an electronic copy (not via email). The APS Section Chief will then distribute the copies to the appropriate agencies.

Closure Plan Review

The closure plan will be reviewed by a technical review committee selected by the APS Section Chief. The committee will generally consist of engineers, geologists and APS regional and central office representatives, to include the APS Regional Supervisor of the closure site. After thorough review of the closure plan and coordination with the DWQ National Pollutant Discharge Elimination System (NPDES) staff, the committee will present their recommendations to the APS Section Chief. The APS Section Chief will then send a letter recommending approval or denial of the closure request through the Surface Water Protection Section (SWPS) Chief to the DWQ Deputy Director. The Deputy Director will send a letter to the applicant that conveys approval or denial of the closure request. If the letter conveys denial, sufficient justification for the decision will be included. If the letter conveys approval, the requestor may begin the closure activities.

Additional Requirements

While the intent of this policy is to assist permittees in obtaining a closure approval for their permitted ash pond, this does not give them approval for decommissioning the dam. Permittees must apply separately for dam decommissioning with the Division of Energy, Mineral, and Land Resources (DEMLR). Since a number of the technical requirements for ash pond closure and dam decommissioning are the same, it may be acceptable to submit the same closure plan to DEMLR. Due to extensive grading work and potential for sedimentation anticipated during closure, an Erosion and Sedimentation control plan may need to be submitted to DEMLR as well (reference Sedimentation Pollution Control Act of 1973).

Closure Activities

Once the entire closure plan has been accepted by all State entities involved, the applicant may proceed with the proposed closure activities. The APS Regional Office will oversee the ash pond closure activities and perform inspections as needed.

Attachment:

Ash Pond Closure Requirements

cc: DWQ/Surface Water Protection Section (Matt Matthews)
DWQ/ Surface Water Protection Section /NPDES (Tom Belnick)
DEMLR/Land Quality Section (Steve McEvoy)
DWM/Solid Waste Section (Ed Mussler)

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED ARO-RELATED
ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Exhibit I
Schedule 1

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 243,042 1/
2	Years to Amortize	<u>26 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	9,348
4	Annual amortization per Company	<u>76,123 3/</u>
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (66,775)</u>
6	Statutory tax rate	<u>23.35025% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 15,592</u>
	Rate base impact	
8	Coal Ash Balance at May 1, 2018 per Public Staff (L1)	\$ 243,042
9	Less annual amortization (-L3)	<u>(9,348)</u>
10	Annualized Coal Ash Deferral Balance per Public Staff (L8 + L9)	233,694
11	Coal Ash Deferral Balance per Company filings	<u>304,491 5/</u>
12	Public Staff annualization adjustment to coal ash deferral balance (L10 - L11)	(70,797)
13	Adjustment to remove remaining coal ash deferral balance from rate base (-L10)	<u>(233,694)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (304,491)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 71,099</u>

1/ Maness Exhibit I, Schedule 1-1, Line 33, Column (k).

2/ Amortization period recommended by Public Staff to achieve equitable sharing.

3/ NCUC E-1, Item 10, NC-1101, Page 1 of 1, ARO column, Line 7.

4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).

5/ NCUC E-1, Item 10, NC-1101, Page 1 of 1, ARO column, Line 18.

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
AMORTIZATION SCHEDULE FOR DEFERRED
ARO-RELATED ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Exhibit I
Schedule 1-1

Duke Energy Carolinas Coal Ash Spend				Duke Energy Carolinas Coal Ash Deferral (North Carolina)									
Line No.	Description	System Spend per Company 1/	Public Staff Adjustments 2/	System Spend per Public Staff 3/	% to NC for Spend 4/	Beginning Balance 5/	NC Spend 6/	Ending Balance 7/	Deferred Cost of Debt 8/	Deferred Cost of Equity 9/	Total Return 10/	Ending Balance 11/	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	
1	Dec-17							\$ -					
2	Jan-18	\$ 17,379	\$ (5,172)	\$ 12,207	66.6244%	\$ -	\$ 8,133	8,133	\$ 6	\$ 18	\$ 25	\$ 8,157	
3	Feb-18	14,580	(4,584)	9,996	66.6244%	8,133	6,660	14,793	18	52	70	\$ 14,887	
4	Mar-18	22,410	(6,511)	15,899	66.6244%	14,793	10,592	25,385	32	91	122	\$ 25,602	
5	Apr-18	19,654	(6,485)	13,169	66.6244%	25,385	8,774	34,159	47	134	181	\$ 34,557	
6	May-18	15,699	(4,987)	10,712	66.6244%	34,159	7,137	41,296	59	170	229	\$ 41,923	
7	Jun-18	23,765	(8,132)	15,634	65.9759%	41,296	10,314	51,610	73	209	282	\$ 52,519	
8	Jul-18	15,741	(5,455)	10,286	65.9759%	51,610	6,786	58,396	87	248	334	\$ 59,640	
9	Aug-18	20,091	(4,218)	15,872	65.9759%	58,396	10,472	68,868	89	273	362	\$ 70,474	
10	Sep-18	23,461	(5,011)	18,450	65.9759%	68,868	12,173	81,041	105	322	427	\$ 83,074	
11	Oct-18	22,328	(5,311)	17,017	65.9759%	81,041	11,227	92,268	122	372	493	\$ 94,794	
12	Nov-18	22,193	(4,804)	17,389	65.9759%	92,268	11,472	103,741	137	420	558	\$ 106,824	
13	Dec-18	11,608	(2,503)	9,104	65.9759%	103,741	6,007	109,747	150	458	608	\$ 113,438	
14	Jan-19	16,290	(3,255)	13,035	65.9759%	113,438	8,600	122,038	166	505	671	\$ 122,709	
15	Feb-19	24,409	(4,870)	19,538	65.9759%	122,038	12,890	134,929	181	551	732	\$ 136,332	
16	Mar-19	24,062	(4,812)	19,250	65.9759%	134,929	12,701	147,629	199	606	805	\$ 149,837	
17	Apr-19	20,018	(3,995)	16,023	65.9759%	147,629	10,571	158,200	215	656	871	\$ 161,279	
18	May-19	27,202	(5,422)	21,779	65.9759%	158,200	14,369	172,569	233	710	942	\$ 176,591	
19	Jun-19	18,738	(3,535)	15,203	65.8832%	172,569	10,016	182,586	250	762	1,012	\$ 187,619	
20	Jul-19	16,267	(3,261)	13,006	65.8832%	182,586	8,569	191,155	263	802	1,065	\$ 197,252	
21	Aug-19	58,647	(11,651)	46,997	65.8832%	191,155	30,963	222,118	291	886	1,177	\$ 229,392	
22	Sep-19	28,293	(51,757)	(23,464)	65.8832%	222,118	(15,459)	206,659	302	920	1,221	\$ 215,155	
23	Oct-19	15,789	(3,152)	12,637	65.8832%	206,659	8,326	214,984	297	904	1,201	\$ 224,682	
24	Nov-19	12,379	(2,462)	9,917	65.8832%	214,984	6,533	221,518	307	936	1,243	\$ 232,459	
25	Dec-19	-	-	-	65.8832%	221,518	-	221,518	312	950	1,262	\$ 233,721	
26	Jan-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 235,052	
27	Feb-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 236,384	
28	Mar-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 237,715	
29	Apr-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 239,047	
30	May-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 240,378	
31	Jun-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 241,710	
32	Jul-20	-	-	-	65.8832%	233,721	-	233,721	329	1,003	1,332	\$ 243,042	
33	Total	\$ 491,002	\$ (161,346)	\$ 329,656			\$ 217,827		\$ 6,242	\$ 18,973	\$ 25,215		

1/ Provided by the Company at the Public Staff's request - actual expenditures through November 2019.

2/ Maness Exhibit I, Schedule 1-2, Column (f).

3/ Column (a) plus Column (b).

4/ NCUC E-1, tem 10, NC-1102, Page 1 of 1, Column (b).

5/ Amount in Column (g) of previous line, plus return for prior 12 months at beginning of each year.

6/ Column (c) times Column (d).

7/ Column (e) plus Column (f).

8/ Column (e) plus Column (g), divided by 2, times after tax cost of debt for applicable time period per NC-1107, divided by 12.

9/ Column (e) plus Column (g), divided by 2, times after tax cost of equity for applicable time period per NC-1107, divided by 12, unless footnoted otherwise.

10/ Column (h) plus Column (i).

11/ Column (g) plus total return for year to date from Column (j).

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO
TOTAL SYSTEM ARO-RELATED COAL ASH COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Exhibit I
Schedule 1-2

Line No.	Month	Charah Fulfillment Fee Adjustment (a)	1/ Dan River Excavation (b)	2/ Buck Beneficiation Units (c)	3/ Remove Costs of Extraction and Treatment of Contaminated Groundwater (d)	4/ Permanent Alternative Water Supplies and Treatment Systems (e)	5/ Total Public Staff Adjustment (f)
1	Jan-18	\$ -	\$ (1,035)	\$ (2,400)	\$ (11)	\$ (1,726)	\$ (5,172)
2	Feb-18	-	(869)	(2,014)	(9)	(1,693)	(4,584)
3	Mar-18	-	(1,335)	(3,095)	(14)	(2,068)	(6,511)
4	Apr-18	-	(1,171)	(2,714)	(12)	(2,588)	(6,485)
5	May-18	-	(935)	(2,168)	(10)	(1,874)	(4,987)
6	Jun-18	-	(1,416)	(3,282)	(14)	(3,420)	(8,132)
7	Jul-18	-	(938)	(2,174)	(10)	(2,334)	(5,455)
8	Aug-18	-	(1,197)	(2,775)	(12)	(235)	(4,218)
9	Sep-18	-	(1,398)	(3,240)	(14)	(359)	(5,011)
10	Oct-18	-	(1,330)	(3,084)	(14)	(884)	(5,311)
11	Nov-18	-	(1,322)	(3,065)	(13)	(403)	(4,804)
12	Dec-18	-	(692)	(1,603)	(7)	(202)	(2,503)
13	Jan-19	-	(970)	(2,250)	(10)	(25)	(3,255)
14	Feb-19	-	(1,454)	(3,371)	(15)	(31)	(4,870)
15	Mar-19	-	(1,433)	(3,323)	(15)	(41)	(4,812)
16	Apr-19	-	(1,193)	(2,765)	(12)	(26)	(3,995)
17	May-19	-	(1,621)	(3,757)	(17)	(29)	(5,422)
18	Jun-19	-	(1,116)	(2,588)	(11)	180	(3,535)
19	Jul-19	-	(969)	(2,246)	(10)	(35)	(3,261)
20	Aug-19	-	(3,494)	(8,099)	(36)	(22)	(11,651)
21	Sep-19	(46,143)	(1,686)	(3,907)	(17)	(4)	(51,757)
22	Oct-19	-	(941)	(2,181)	(10)	(21)	(3,152)
23	Nov-19	-	(737)	(1,710)	(8)	(8)	(2,462)
24	Total	<u>\$ (46,143)</u>	<u>\$ (29,251)</u>	<u>\$ (67,809)</u>	<u>\$ (298)</u>	<u>\$ (17,845)</u>	<u>\$ (161,346)</u>

1/ Based on recommendation of Public Staff witness Garrett.

2/ Based on recommendation of Public Staff witness Garrett, allocated to individual months proportionately to total NC Spend.

3/ Based on recommendation of Public Staff witness Moore, allocated to individual months proportionately to total NC Spend.

4/ Per Public Staff witness Junis. Column (d) amounts allocated proportionately.

Column (e) amounts provided by Public Staff witness Junis.

5/ Sum of Columns (a) thru (e).

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1213 AND 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED NON_ARO
ENVIRONMENTAL COST AMORTIZATION
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Exhibit II

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 98,513 1/
2	Years to Amortize	<u>10 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	9,851
4	Annual amortization per Company	<u>19,791 3/</u>
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	<u>\$ (9,940)</u>
6	Statutory tax rate	<u>23.35025% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 2,321</u>
	Rate base impact	
8	Deferred balance of non-ARO environmental costs (L1)	\$ 98,513
9	Annual amortization (-L3)	<u>(9,851)</u>
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	88,662
11	Deferred non-ARO regulatory asset per Company	<u>79,162 5/</u>
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	<u>\$ 9,500</u>
13	Adjustment to ADIT (-L12 x L6)	<u>\$ (2,218)</u>

- 1/ Updated spend provided by the Company at the Public Staff's request; no spending after 11/30/19 is included. Depreciation and carrying costs included through July 2020.
- 2/ Amortization period recommended by Public Staff.
- 3/ NCUC E-1, Item 10, NC-1101, Page 1 of 1, non-ARO column, Line 7.
- 4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).
- 5/ NCUC E-1, Item 10, NC-1101, Page 1 of 1, non-ARO column, Line 18.

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1187, 1213, and 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED ARO-RELATED
ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Second Revised and Second Stipulation Exhibit I
Schedule 1

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 261,242 1/
2	Years to Amortize	<u>25 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	10,450
4	Annual amortization per Company	<u>75,693 3/</u>
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (65,243)</u>
6	Statutory tax rate	<u>23.35025% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 15,234</u>
	Rate base impact	
8	Coal Ash Balance at July 31, 2020 per Public Staff (L1)	\$ 261,242
9	Less annual amortization (-L3)	<u>(10,450)</u>
10	Annualized Coal Ash Deferral Balance per Public Staff (L8 + L9)	250,792
11	Coal Ash Deferral Balance per Company filings	<u>302,772 5/</u>
12	Public Staff annualization adjustment to coal ash deferral balance (L10 - L11)	(51,980)
13	Adjustment to remove remaining coal ash deferral balance from rate base (-L10)	<u>(250,792)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (302,772)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 70,698</u>

1/ Maness Second Revised and Second Stipulation Exhibit I, Schedule 1-1, Line 32, Column (k).

2/ Amortization period recommended by Public Staff to achieve equitable sharing.

3/ McManeus Second Settlement Exhibit 1, NC-1101, Page 1 of 1, ARO column, Line 7.

4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).

5/ McManeus Second Settlement Exhibit 1, NC-1101, Page 1 of 1, ARO column, Line 18.

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1187, 1213, and 1214
North Carolina Retail Operations

Public Staff
Maness Second Revised and Second Stipulation Exhibit I
Schedule 1-1

AMORTIZATION SCHEDULE FOR DEFERRED
ARO-RELATED ENVIRONMENTAL COSTS

For the Test Year Ended December 31, 2018
(in Thousands)

		Duke Energy Carolinas Coal Ash Spend			Duke Energy Carolinas Coal Ash Deferral (North Carolina)								
Line No.	Description	System Spend per Company 1/	Public Staff Adjustments 2/	System Spend per Public Staff 3/	% to NC for Spend 4/	Beginning Balance 5/	NC Spend 6/	Ending Balance 7/	Deferred Cost of Debt 8/	Deferred Cost of Equity 9/	Total Return 10/	Ending Balance 11/	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	
1	Dec-17							\$ -					
2	Jan-18	\$ 17,379	\$ (5,161)	\$ 12,218	66.6244%	\$ -	\$ 8,140	8,140	\$ 6	\$ 18	\$ 25	\$ 8,165	
3	Feb-18	14,580	(4,431)	10,149	66.6244%	8,140	6,762	14,902	18	52	70	\$ 14,997	
4	Mar-18	22,410	(6,276)	16,134	66.6244%	14,902	10,749	25,651	32	91	123	\$ 25,869	
5	Apr-18	19,654	(6,294)	13,360	66.6244%	25,651	8,901	34,552	47	136	183	\$ 34,953	
6	May-18	15,699	(4,839)	10,860	66.6244%	34,552	7,235	41,787	60	172	232	\$ 42,420	
7	Jun-18	23,765	(7,879)	15,886	65.9759%	41,787	10,481	52,268	74	212	286	\$ 53,187	
8	Jul-18	15,741	(5,288)	10,453	65.9759%	52,268	6,897	59,165	88	251	339	\$ 60,422	
9	Aug-18	20,091	(4,005)	16,086	65.9759%	59,165	10,613	69,777	90	277	367	\$ 71,402	
10	Sep-18	23,461	(4,766)	18,696	65.9759%	69,777	12,335	82,112	107	326	432	\$ 84,169	
11	Oct-18	22,328	(5,074)	17,254	65.9759%	82,112	11,384	93,496	123	377	500	\$ 96,052	
12	Nov-18	22,193	(4,568)	17,625	65.9759%	93,496	11,628	105,124	139	426	565	\$ 108,246	
13	Dec-18	11,608	(2,458)	9,150	65.9759%	105,124	6,037	111,160	152	464	616	\$ 114,898	
14	Jan-19	16,290	(3,082)	13,208	65.9759%	114,898	8,714	123,612	168	512	679	\$ 124,291	
15	Feb-19	24,409	(4,611)	19,797	65.9759%	123,612	13,062	136,674	183	558	741	\$ 138,094	
16	Mar-19	24,062	(4,556)	19,506	65.9759%	136,674	12,869	149,543	201	614	815	\$ 151,779	
17	Apr-19	20,018	(3,783)	16,235	65.9759%	149,543	10,711	160,254	218	665	883	\$ 163,373	
18	May-19	27,202	(5,133)	22,068	65.9759%	160,254	14,560	174,814	236	719	954	\$ 178,887	
19	Jun-19	18,738	(3,336)	15,403	65.8832%	174,814	10,148	184,962	253	772	1,025	\$ 190,060	
20	Jul-19	16,267	(3,088)	13,179	65.8832%	184,962	8,683	193,644	266	812	1,079	\$ 199,821	
21	Aug-19	58,647	(11,027)	47,620	65.8832%	193,644	31,374	225,018	295	898	1,193	\$ 232,387	
22	Sep-19	28,293	(51,456)	(23,163)	65.8832%	225,018	(15,261)	209,757	306	933	1,239	\$ 218,365	
23	Oct-19	15,789	(2,984)	12,805	65.8832%	209,757	8,436	218,193	301	918	1,219	\$ 228,020	
24	Nov-19	12,379	(2,331)	10,048	65.8832%	218,193	6,620	224,813	312	950	1,262	\$ 235,902	
25	Dec-19	15,830	(2,971)	12,860	65.8832%	224,813	8,472	233,286	322	983	1,305	\$ 245,679	
26	Jan-20	10,386	(1,949)	8,437	65.8832%	245,679	5,559	251,238	350	1,066	1,416	\$ 252,654	
27	Feb-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 254,085	
28	Mar-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 255,516	
29	Apr-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 256,948	
30	May-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 258,379	
31	Jun-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 259,811	
32	Jul-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	\$ 261,242	
33	Total	\$ 517,219	\$ (161,346)	\$ 355,873			\$ 235,107		\$ 6,469	\$ 19,666	\$ 26,135		

1/ McManeus Second Settlement Exhibit 1, NC-1102, Page 1 of 1, Column (a).

2/ Maness Second Revised and Second Stipulation Exhibit I, Schedule 1-2, Column (f).

3/ Column (a) plus Column (b).

4/ NCUC E-1, Item 10, NC-1102, Page 1 of 1, Column (b).

5/ Amount in Column (g) of previous line, plus return for prior 12 months at beginning of each year.

6/ Column (c) times Column (d).

7/ Column (e) plus Column (f).

8/ Column (e) plus Column (g), divided by 2, times after tax cost of debt for applicable time period per NC-1107, divided by 12.

9/ Column (e) plus Column (g), divided by 2, times after tax cost of equity for applicable time period per NC-1107, divided by 12.

10/ Column (h) plus Column (i).

11/ Column (g) plus total return for year to date from Column (j).

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1187, 1213, and 1214
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO
TOTAL SYSTEM ARO-RELATED COAL ASH COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Second Revised and Second Stipulation Exhibit I
Schedule 1-2

Line No.	Month	Charah Fulfillment Fee Adjustment 1/ (a)	Dan River Excavation 2/ (b)	Buck Beneficiation Units 3/ (c)	Remove Costs of Extraction and Treatment of Contaminated Groundwater 4/ (d)	Permanent Alternative Water Supplies and Treatment Systems 4/ (e)	Total Public Staff Adjustment 5/ (f)
1	Jan-18	\$ -	\$ (983)	\$ (2,278)	\$ (174)	\$ (1,726)	\$ (5,161)
2	Feb-18	-	(825)	(1,912)	(2)	(1,693)	(4,431)
3	Mar-18	-	(1,267)	(2,938)	(3)	(2,068)	(6,276)
4	Apr-18	-	(1,112)	(2,577)	(18)	(2,588)	(6,294)
5	May-18	-	(888)	(2,058)	(19)	(1,874)	(4,839)
6	Jun-18	-	(1,344)	(3,116)	-	(3,420)	(7,879)
7	Jul-18	-	(890)	(2,064)	-	(2,334)	(5,288)
8	Aug-18	-	(1,136)	(2,634)	-	(235)	(4,005)
9	Sep-18	-	(1,327)	(3,076)	(4)	(359)	(4,766)
10	Oct-18	-	(1,263)	(2,927)	-	(884)	(5,074)
11	Nov-18	-	(1,255)	(2,910)	-	(403)	(4,568)
12	Dec-18	-	(656)	(1,522)	(78)	(202)	(2,458)
13	Jan-19	-	(921)	(2,136)	-	(25)	(3,082)
14	Feb-19	-	(1,380)	(3,200)	-	(31)	(4,611)
15	Mar-19	-	(1,361)	(3,155)	-	(41)	(4,556)
16	Apr-19	-	(1,132)	(2,624)	-	(26)	(3,783)
17	May-19	-	(1,538)	(3,566)	-	(29)	(5,133)
18	Jun-19	-	(1,060)	(2,457)	-	180	(3,336)
19	Jul-19	-	(920)	(2,133)	-	(35)	(3,088)
20	Aug-19	-	(3,317)	(7,689)	-	(22)	(11,027)
21	Sep-19	(46,143)	(1,600)	(3,709)	-	(4)	(51,456)
22	Oct-19	-	(893)	(2,070)	-	(21)	(2,984)
23	Nov-19	-	(700)	(1,623)	-	(8)	(2,331)
24	Dec-19	-	(895)	(2,075)	-	-	(2,971)
25	Jan-20	-	(587)	(1,362)	-	-	(1,949)
26	Total	<u>\$ (46,143)</u>	<u>\$ (29,251)</u>	<u>\$ (67,809)</u>	<u>\$ (298)</u>	<u>\$ (17,845)</u>	<u>\$ (161,346)</u>

1/ Based on recommendation of Public Staff witness Garrett.

2/ Based on recommendation of Public Staff witness Garrett, allocated to individual months proportionately to total NC Spend.

3/ Based on recommendation of Public Staff witness Moore, allocated to individual months proportionately to total NC Spend.

4/ Per Public Staff witness Junis..

5/ Sum of Columns (a) thru (e).

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1187, 1213, and 1214
North Carolina Retail Operations
CALCULATION OF SHARING PERCENTAGE
AT SETTLED RATE OF RETURN
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Second Revised and Second Stipulation Exhibit I
Schedule 1-3

NET-OF-TAX RATE OF RETURN

Line No.	Item	Capital Structure 1/ (a)	Embedded Costs 1/ (b)	Weighted Cost Rates 2/ (c)	Income Tax Factors (d)	Net-of-Tax Weighted Cost Rates 4/ (e)
1	Long-term debt	48.00%	4.270%	2.050%	0.7664975 3/	0.01571
2	Common equity	52.00%	9.600%	4.992%	1.000000	0.04992
3	Total (L1 + L2)	100.00%		7.042%		0.06563

NET-OF-TAX PRESENT VALUE OF COSTS TO BE AMORTIZED AND AMORTIZATION PERIOD

Line No.	Item	Amount
4	Present value of costs to be recovered at 11/01/19	\$ 261,242 5/
5	Present value of ADIT (L4 x Schedule 1, Line 6).	(61,001) 6/
6	Net-of-tax Present value (L4 + L5)	\$ 200,241
7	Amortization period	25.00 7/

SHARING CALCULATION

	Amortization Year	8/ Annual Amortization 9/ (a)	Income Tax Expense 10/ (b)	Net-of-Tax Expense 11/ (c)	Discount factor 12/ (d)	Discounted Net-of-Tax Expense 13/ (e)
8	1	\$ 10,450	\$ (2,440)	\$ 8,010	0.9692060	\$ 7,763
9	2	10,450	(2,440)	8,010	0.9095144	7,285
10	3	10,450	(2,440)	8,010	0.8534991	6,836
11	4	10,450	(2,440)	8,010	0.8009338	6,415
12	5	10,450	(2,440)	8,010	0.7516058	6,020
13	6	10,450	(2,440)	8,010	0.7053158	5,649
14	7	10,450	(2,440)	8,010	0.6618767	5,301
15	8	10,450	(2,440)	8,010	0.6211130	4,975
16	9	10,450	(2,440)	8,010	0.5828598	4,669
17	10	10,450	(2,440)	8,010	0.5469626	4,381
18	11	10,450	(2,440)	8,010	0.5132762	4,111
19	12	10,450	(2,440)	8,010	0.4816645	3,858
20	13	10,450	(2,440)	8,010	0.4519997	3,620
21	14	10,450	(2,440)	8,010	0.4241619	3,397
22	15	10,450	(2,440)	8,010	0.3980386	3,188
23	16	10,450	(2,440)	8,010	0.3735241	2,992
24	17	10,450	(2,440)	8,010	0.3505195	2,808
25	18	10,450	(2,440)	8,010	0.3289317	2,635
26	19	10,450	(2,440)	8,010	0.3086734	2,472
27	20	10,450	(2,440)	8,010	0.2896628	2,320
28	21	10,450	(2,440)	8,010	0.2718230	2,177
29	22	10,450	(2,440)	8,010	0.2550820	2,043
30	23	10,450	(2,440)	8,010	0.2393719	1,917
31	24	10,450	(2,440)	8,010	0.2246295	1,799
32	25	10,450	(2,440)	8,010	0.2107950	1,688
33	26	-	-	-	0.1978125	-
34	27	-	-	-	0.1856296	-
35	28	-	-	-	0.1741970	-
36	29	-	-	-	0.1634686	-
37	30	-	-	-	0.1534009	-
38	Total	\$ 261,242	\$ (61,001)	\$ 200,241		\$ 100,321
39	Ratepayer-borne percentage of net-of-tax present value cost					50.100% 14/
40	Shareholder-borne percentage of net-of-tax present value cost (1 - L14)					49.900%

1/ Boswell Second Supplemental and Stipulation Exhibit 1, Schedule 4.

2/ Column (a) x Column (b).

3/ 1 - Schedule 1, Line 6.

4/ Column (c) x Column (d).

5/ Schedule 1, Line 1.

6/ Line 4 x Schedule 1, Line 6.

7/ Schedule 1, Line 2.

8/ Based on amortization period.

9/ Schedule 1, Line 3.

10/ Column (a) x Schedule 1, Line 6.

11/ Column (a) + Column (b).

12/ Based on net-of-tax overall rate of return and mid-year cash flow assumption.

13/ Column (c) x Column (d).

14/ Line 38, Column (e) divided by Line 6.

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1187, 1213 AND 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED NON-ARO
ENVIRONMENTAL COST AMORTIZATION
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Second Revised and Second Stipulation Exhibit II

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 91,254 ^{1/}
2	Years to Amortize	8 ^{2/}
3	Annual amortization per Public Staff (L1 / L2)	11,407
4	Annual amortization per Company	11,407 ^{3/}
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	-
6	Statutory tax rate	23.35025% ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	\$ -
	Rate base impact	
8	Deferred balance of non-ARO environmental costs (L1)	\$ 91,254
9	Annual amortization (-L3)	(11,407)
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	79,847
11	Deferred non-ARO regulatory asset per Company	79,847 ^{5/}
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	\$ -
13	Adjustment to ADIT (-L12 x L6)	\$ -

- 1/ McManeus Second Settlement Exhibit 1, NC-1101, Page 1 of 1, Non-ARO column, Line 2.
2/ Amortization period stipulated to by Public Staff and Company, in settlement.
3/ McManeus Second Settlement Exhibit 1, NC-1101, Page 1 of 1, Non-ARO column, Line 7.
4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).
5/ McManeus Second Settlement Exhibit 1, NC-1101, Page 1 of 1, Non-ARO column, Line 18.

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED ARO-RELATED
ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Exhibit I
Schedule 1
Revised

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 261,242 1/
2	Years to Amortize	<u>27 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	9,676
4	Annual amortization per Company	<u>75,693 3/</u>
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (66,017)</u>
6	Statutory tax rate	<u>23.35025% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 15,415</u>
	Rate base impact	
8	Coal Ash Balance at May 1, 2018 per Public Staff (L1)	\$ 261,242
9	Less annual amortization (-L3)	<u>(9,676)</u>
10	Annualized Coal Ash Deferral Balance per Public Staff (L8 + L9)	251,566
11	Coal Ash Deferral Balance per Company filings	<u>302,772 5/</u>
12	Public Staff annualization adjustment to coal ash deferral balance (L10 - L11)	(51,206)
13	Adjustment to remove remaining coal ash deferral balance from rate base (-L10)	<u>(251,566)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (302,772)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 70,698</u>

1/ Revised Maness Exhibit I, Schedule 1-1, Line 32, Column (k).

2/ Amortization period recommended by Public Staff to achieve equitable sharing.

3/ McManeus Supplemental Exhibit 1, Page 57 (NC-1101 - January, Page 1 of 1), ARO column, Line 7.

4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).

5/ McManeus Supplemental Exhibit 1, Page 57 (NC-1101 - January, Page 1 of 1), ARO column, Line 18.

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
AMORTIZATION SCHEDULE FOR DEFERRED
ARO-RELATED ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Exhibit I
Schedule 1-1
Revised

Line No.	Description	Duke Energy Carolinas Coal Ash Spend			Duke Energy Carolinas Coal Ash Deferral (North Carolina)							
		System Spend per Company 1/	Public Staff Adjustments 2/	System Spend per Public Staff 3/	% to NC for Spend 4/	Beginning Balance 5/	NC Spend 6/	Ending Balance 7/	Deferred Cost of Debt 8/	Deferred Cost of Equity 9/	Total Return 10/	Ending Balance 11/
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	Dec-17							\$ -				
2	Jan-18	\$ 17,379	\$ (5,161)	\$ 12,218	66.6244%	\$ -	\$ 8,140	\$ 8,140	\$ 6	\$ 18	\$ 25	\$ 8,165
3	Feb-18	14,580	(4,431)	10,149	66.6244%	8,140	6,762	14,902	18	52	70	14,997
4	Mar-18	22,410	(6,276)	16,134	66.6244%	14,902	10,749	25,651	32	91	123	25,869
5	Apr-18	19,654	(6,294)	13,360	66.6244%	25,651	8,901	34,552	47	136	183	34,953
6	May-18	15,699	(4,839)	10,860	66.6244%	34,552	7,235	41,787	60	172	232	42,420
7	Jun-18	23,765	(7,879)	15,886	65.9759%	41,787	10,481	52,268	74	212	286	53,187
8	Jul-18	15,741	(5,288)	10,453	65.9759%	52,268	6,897	59,165	88	251	339	60,422
9	Aug-18	20,091	(4,005)	16,086	65.9759%	59,165	10,613	69,777	90	277	367	71,402
10	Sep-18	23,461	(4,766)	18,696	65.9759%	69,777	12,335	82,112	107	326	432	84,169
11	Oct-18	22,328	(5,074)	17,254	65.9759%	82,112	11,384	93,496	123	377	500	96,052
12	Nov-18	22,193	(4,568)	17,625	65.9759%	93,496	11,628	105,124	139	426	565	108,246
13	Dec-18	11,608	(2,458)	9,150	65.9759%	105,124	6,037	111,160	152	464	616	114,898
14	Jan-19	16,290	(3,082)	13,208	65.9759%	114,898	8,714	123,612	168	512	679	124,291
15	Feb-19	24,409	(4,611)	19,797	65.9759%	123,612	13,062	136,674	183	558	741	138,094
16	Mar-19	24,062	(4,556)	19,506	65.9759%	136,674	12,869	149,543	201	614	815	151,779
17	Apr-19	20,018	(3,783)	16,235	65.9759%	149,543	10,711	160,254	218	665	883	163,373
18	May-19	27,202	(5,133)	22,068	65.9759%	160,254	14,560	174,814	236	719	954	178,887
19	Jun-19	18,738	(3,336)	15,403	65.8832%	174,814	10,148	184,962	253	772	1,025	190,060
20	Jul-19	16,267	(3,088)	13,179	65.8832%	184,962	8,683	193,644	266	812	1,079	199,821
21	Aug-19	58,647	(11,027)	47,620	65.8832%	193,644	31,374	225,018	295	898	1,193	232,387
22	Sep-19	28,293	(51,456)	(23,163)	65.8832%	225,018	(15,261)	209,757	306	933	1,239	218,365
23	Oct-19	15,789	(2,984)	12,805	65.8832%	209,757	8,436	218,193	301	918	1,219	228,020
24	Nov-19	12,379	(2,331)	10,048	65.8832%	218,193	6,620	224,813	312	950	1,262	235,902
25	Dec-19	15,830	(2,971)	12,860	65.8832%	224,813	8,472	233,286	322	983	1,305	245,679
26	Jan-20	10,386	(1,949)	8,437	65.8832%	245,679	5,559	251,238	350	1,066	1,416	252,654
27	Feb-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	254,085
28	Mar-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	255,516
29	Apr-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	256,948
30	May-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	258,379
31	Jun-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	259,811
32	Jul-20	-	-	-	65.8832%	251,238	-	251,238	354	1,078	1,431	261,242
33	Total	<u>\$ 517,219</u>	<u>\$ (161,346)</u>	<u>\$ 355,873</u>			<u>\$ 235,107</u>		<u>\$ 6,469</u>	<u>\$ 19,666</u>	<u>\$ 26,135</u>	

1/ McManeus Supplemental Exhibit 1, Page 58 (NC-1102 - January, Page 1 of 1), Column (a).

2/ Revised Maness Exhibit I, Schedule 1-2, Column (f).

3/ Column (a) plus Column (b).

4/ NCUC E-1, Item 10, NC-1102, Page 1 of 1, Column (b).

5/ Amount in Column (g) of previous line, plus return for prior 12 months at beginning of each year.

6/ Column (c) times Column (d).

7/ Column (e) plus Column (f).

8/ Column (e) plus Column (g), divided by 2, times after tax cost of debt for applicable time period per NC-1107, divided by 12.

9/ Column (e) plus Column (g), divided by 2, times after tax cost of equity for applicable time period per NC-1107, divided by 12.

10/ Column (h) plus Column (i).

11/ Column (g) plus total return for year to date from Column (j).

DUKE ENERGY CAROLINAS
Docket No. E-7, Sub 1214
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO
TOTAL SYSTEM ARO-RELATED COAL ASH COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Exhibit I
Schedule 1-2
Revised

Line No.	Month	Charah Fulfillment Fee Adjustment (a)	1/ Dan River Excavation (b)	2/ Buck Beneficiation Units (c)	3/ Remove Costs of Extraction and Treatment of Contaminated Groundwater (d)	4/ Permanent Alternative Water Supplies and Treatment Systems (e)	4/ Total Public Staff Adjustment (f)	5/
1	Jan-18	\$ -	\$ (983)	\$ (2,278)	\$ (174)	\$ (1,726)	\$ (5,161)	
2	Feb-18	-	(825)	(1,912)	(2)	(1,693)	(4,431)	
3	Mar-18	-	(1,267)	(2,938)	(3)	(2,068)	(6,276)	
4	Apr-18	-	(1,112)	(2,577)	(18)	(2,588)	(6,294)	
5	May-18	-	(888)	(2,058)	(19)	(1,874)	(4,839)	
6	Jun-18	-	(1,344)	(3,116)	-	(3,420)	(7,879)	
7	Jul-18	-	(890)	(2,064)	-	(2,334)	(5,288)	
8	Aug-18	-	(1,136)	(2,634)	-	(235)	(4,005)	
9	Sep-18	-	(1,327)	(3,076)	(4)	(359)	(4,766)	
10	Oct-18	-	(1,263)	(2,927)	-	(884)	(5,074)	
11	Nov-18	-	(1,255)	(2,910)	-	(403)	(4,568)	
12	Dec-18	-	(656)	(1,522)	(78)	(202)	(2,458)	
13	Jan-19	-	(921)	(2,136)	-	(25)	(3,082)	
14	Feb-19	-	(1,380)	(3,200)	-	(31)	(4,611)	
15	Mar-19	-	(1,361)	(3,155)	-	(41)	(4,556)	
16	Apr-19	-	(1,132)	(2,624)	-	(26)	(3,783)	
17	May-19	-	(1,538)	(3,566)	-	(29)	(5,133)	
18	Jun-19	-	(1,060)	(2,457)	-	180	(3,336)	
19	Jul-19	-	(920)	(2,133)	-	(35)	(3,088)	
20	Aug-19	-	(3,317)	(7,689)	-	(22)	(11,027)	
21	Sep-19	(46,143)	(1,600)	(3,709)	-	(4)	(51,456)	
22	Oct-19	-	(893)	(2,070)	-	(21)	(2,984)	
23	Nov-19	-	(700)	(1,623)	-	(8)	(2,331)	
24	Dec-19	-	(895)	(2,075)	-	-	(2,971)	
25	Jan-20	-	(587)	(1,362)	-	-	(1,949)	
26	Total	<u>\$ (46,143)</u>	<u>\$ (29,251)</u>	<u>\$ (67,809)</u>	<u>\$ (298)</u>	<u>\$ (17,845)</u>	<u>\$ (161,346)</u>	

1/ Based on recommendation of Public Staff witness Garrett.

2/ Based on recommendation of Public Staff witness Garrett, allocated to individual months proportionately to total NC Spend.

3/ Based on recommendation of Public Staff witness Moore, allocated to individual months proportionately to total NC Spend.

4/ Per Public Staff witness Junis..

5/ Sum of Columns (a) thru (e).

DUKE ENERGY CAROLINAS
Docket No. E-7, Subs 1213 AND 1214
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED NON_ARO
ENVIRONMENTAL COST AMORTIZATION
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Exhibit II
Revised

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 90,265 ^{1/}
2	Years to Amortize	<u>10</u> ^{2/}
3	Annual amortization per Public Staff (L1 / L2)	9,027
4	Annual amortization per Company	<u>18,053</u> ^{3/}
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	<u>\$ (9,027)</u>
6	Statutory tax rate	<u>23.35025%</u> ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 2,108</u>
	Rate base impact	
8	Deferred balance of non-ARO environmental costs (L1)	\$ 90,265
9	Annual amortization (-L3)	<u>(9,027)</u>
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	81,239
11	Deferred non-ARO regulatory asset per Company	<u>72,212</u> ^{5/}
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	<u>\$ 9,027</u>
13	Adjustment to ADIT (-L12 x L6)	<u>\$ (2,108)</u>

- 1/ McManeus Supplemental Exhibit 1, Page 61 (NC-1104 - January, Page 2 of 2), Ending Balance column, Line 64, except allocated by SWPA factors.
- 2/ Amortization period recommended by Public Staff.
- 3/ McManeus Supplemental Exhibit 1, Page 57 (NC-1101 - January, Page 1 of 1), non-ARO column, Line 7, except allocated by SWPA factors.
- 4/ NCUC E-1, Item 10, NC-0104 - 2019 Calculation of Tax Rates - Statutory Tax Rate, Line 10 (unrounded).
- 5/ McManeus Supplemental Exhibit 1, Page 57 (NC-1101 - January, Page 1 of 1), non-ARO column, Line 18, except allocated by SWPA factors.

DUKE ENERGY CAROLINAS, LLC
Docket No. E-7, Subs 1213 and 1214
North Carolina Retail Operations
Basis Point Impact of Grid Improvement Projects
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Exhibit III

Line No.	Item	Capitalization Ratio (a)	NC Retail Rate Base (b)	Embedded Cost or Return (c)	Weighted Cost or Return (d)	Net Operating Income (e)	Basis Point Impact (f)
1	Long-term debt	50.000% ^{1/}	\$8,129,749 ^{2/}	4.510% ^{1/}	2.26% ^{4/}	\$366,652 ^{5/}	
2	Common equity	50.000% ^{1/}	8,129,749 ^{2/}	9.00% ^{1/}	4.50% ^{4/}	731,677 ^{6/}	
3	Total (L1 + L2)	100.000%	\$16,259,498 ^{3/}		6.76%	\$1,098,329 ^{7/}	
2020							
Line No.	Item	Capitalization Ratio (a)	NC Retail Rate Base (b)	Embedded Cost or Return (c)	Weighted Cost or Return (d)	Net Operating Income (e)	
4	Long-term debt	50.000% ^{1/}	\$8,142,875 ^{2/}	4.510% ^{1/}	2.26% ^{4/}	\$367,244 ^{5/}	
5	Common equity	50.000% ^{1/}	8,142,875 ^{2/}	8.96% ^{9/}	4.48% ^{4/}	729,567 ^{6/}	(4) ^{11/}
6	Total (L4 + L5)	100.000%	\$16,285,750 ^{8/}		6.74%	\$1,096,811 ^{10/}	
2021							
Line No.	Item	Capitalization Ratio (a)	NC Retail Rate Base (b)	Embedded Cost or Return (c)	Weighted Cost or Return (d)	Net Operating Income (e)	
7	Long-term debt	50.000% ^{1/}	\$8,204,198 ^{2/}	4.510% ^{1/}	2.26% ^{4/}	\$370,009 ^{5/}	
8	Common equity	50.000% ^{1/}	8,204,198 ^{2/}	8.81% ^{9/}	4.41% ^{4/}	722,860 ^{6/}	(19) ^{14/}
9	Total (L7 + L8)	100.000%	\$16,408,395 ^{12/}		6.67%	\$1,092,869 ^{13/}	
2022							
Line No.	Item	Capitalization Ratio (a)	NC Retail Rate Base (b)	Embedded Cost or Return (c)	Weighted Cost or Return (d)	Net Operating Income (e)	
10	Long-term debt	50.000% ^{1/}	\$8,294,297 ^{2/}	4.510% ^{1/}	2.26% ^{4/}	\$374,073 ^{5/}	
11	Common equity	50.000% ^{1/}	8,294,297 ^{2/}	8.62% ^{9/}	4.31% ^{4/}	714,613 ^{6/}	(38) ^{17/}
12	Total (L10 + L11)	100.000%	\$16,588,593 ^{15/}		6.57%	\$1,088,686 ^{16/}	

1/ Per Public Staff witness Woolridge.

2/ For the first year, Column (b), Line 3 times Column (a); for each year thereafter, calculation based on Line 6, Line 9 and Line 12.

3/ Boswell Exhibit 1, Schedule 2, Line 12, Column (c).

4/ Column (a) times Column (c).

5/ Column (b) times Column (c).

6/ For the first year, Line 3, Column (e) minus Line 1, Column (e); for each year thereafter, calculation based on Line 6 minus Line 4; Line 9 minus Line 7; and, Line 12 minus Line 10.

7/ Boswell Exhibit 1, Schedule 3, Line 16, Column (c).

8/ Reflects the average change to rate base for selected GIP programs for 2020, based on information provided by the Company.

9/ Column (e) divided by Column (b).

10/ Reflects the change in O&M, depreciation, and property taxes for 2020 for selected GIP programs, based on information provided by the Company.

11/ Line 5, Column (c), minus Line 2, Column (c), times 10,000 for conversion to basis points.

12/ Reflects the average change to rate base for selected GIP programs for 2021, based on information provided by the Company.

13/ Reflects the change in O&M, depreciation, and property taxes for 2021 for selected GIP programs, based on information provided by the Company.

14/ Line 8, Column (c), minus Line 2, Column (c) times 10,000.

15/ Reflects the average change to rate base for selected GIP programs for 2022, based on information provided by the Company.

16/ Reflects the change in O&M, depreciation, and property taxes for 2022 for selected GIP programs, based on information provided by the Company.

17/ Line 11, Column (c), minus Line 2, Column (c), times 10,000.

NCDEQ Settlement Agreement on Coal Ash

Plant	Tons to be Excavated	Tons to Remain in Place ¹	Any cap-in-place?	Any stability walls?	Excavation Complete No Later Than:
Allen ²	19,363,000	40,000	No	No	Dec. 31, 2037 ³
Belews Creek	11,870,000	100,000	Yes	Yes	Dec. 31, 2034
Cliffside	7,590,000	-	No	No	Dec. 31, 2029
Marshall	17,426,000	13,079,000	Yes	Yes	Dec. 31, 2035 ⁴
Mayo	6,630,000	-	No	No	Dec. 31, 2029
Roxboro ⁵	16,860,000	10,845,000	Yes	Yes	Dec. 31, 2036
TOTAL	79,739,000	24,064,000			

¹ Tons to remain in place does not include on-site lined landfills.

² Between 30,000 and 50,000 tons will remain in place for structural support of transmission towers.

³ The Feb. 5, 2020 Consent Order (Wake County Superior Court, No. 13-CVS-11032 and Mecklenburg County Superior Court, No. 13-CVS-14661) allowed for excavation to be completed no later than Dec. 31, 2038.

⁴ The Marshall 1804 Phase I Landfill (Old Ash Fill) must be excavated by Dec. 31, 2024.

⁵ In addition, Duke Energy will remove all coal ash fill from the Gypsum Pad area following retirement of the coal-fired generating units at Roxboro.

<p>DUKE ENERGY CAROLINAS, LLC, AND DUKE ENERGY PROGRESS, LLC,</p> <p>Petitioners,</p> <p>v.</p> <p>NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY,</p> <p>Respondent,</p> <p>APPALACHIAN VOICES, THE STOKES COUNTY BRANCH OF THE NAACP, MOUNTAINTRUE, THE CATAWBA RIVERKEEPER FOUNDATION, THE SIERRA CLUB, THE WATERKEEPER ALLIANCE, and THE ROANOKE RIVER BASIN ASSOCIATION,</p> <p>Respondent-Intervenors.</p>	<p>SETTLEMENT AGREEMENT</p>
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THIS SETTLEMENT AGREEMENT (the “Agreement”) is entered into on December 31st, 2019 (“Effective Date”) between the Parties, defined as follows:

- “Duke Energy”: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC
- “DEQ”: The North Carolina Department of Environmental Quality
- “Community Groups”: Appalachian Voices, Stokes County Branch of the NAACP, MountainTrue, The Catawaba Riverkeeper Foundation, Waterkeeper Alliance, Sierra Club, Roanoke River Basin Association, Cape Fear River Watch, Inc., Neuse River Foundation/Sound Rivers, Inc., and NC State Conference of the NAACP.¹

The Parties enter into this Settlement Agreement in order to resolve the matters referenced herein.

Background

¹ To the extent some of these Community Groups are not party to this litigation but rather to prior litigation addressing other Duke Energy coal ash facilities, they have been consulted by their counsel and agree to the terms and conditions herein only to the extent applied to the facility or facilities about which they have previously been involved in litigation related to the disposition of coal ash or alleged violations related to coal ash.

1. On April 1, 2019, DEQ issued Coal Combustion Residuals Surface Impoundment Closure Determinations (the “Closure Determinations”) pursuant to the Coal Ash Management Act (“CAMA”) for Duke Energy’s Allen, Belews Creek, Cliffside, Marshall, Mayo, and Roxboro Steam Stations (singular, “Facility”; collectively, the “Facilities”). These Closure Determinations ordered excavation of all coal combustion residuals (“CCR”) impoundments at the Facilities.
2. On April 26, 2019, Duke Energy filed Petitions for Contested Case Hearing in the North Carolina Office of Administrative Hearings (“OAH”) in 19 EHR 2398, 19 EHR 2399, 19 EHR 2401, 19 EHR 2403, 19 EHR 2404, and 19 EHR 2406 challenging DEQ’s Closure Determination for each of the Facilities (“OAH Proceedings”).
3. On May 9, 2019, DEQ issued a letter adjusting certain dates and making certain clarifications related to the Closure Determinations.
4. On May 24, 2019, Duke Energy filed Amended Petitions for each Facility in 19 EHR 2398, 19 EHR 2399, 19 EHR 2401, 19 EHR 2403, 19 EHR 2404, and 19 EHR 2406 challenging DEQ’s May 9, 2019 letter in addition to DEQ’s April 1, 2019 Closure Determinations.
5. In addition to the OAH Proceedings, the Parties are involved in the following litigation relating to the Facilities: the State Enforcement Actions (“State of North Carolina *ex rel.* North Carolina Department of Environmental Quality and Roanoke River Basin Association, Sierra Club, Waterkeeper Alliance, Cape Fear River Watch, Inc., Sound Rivers, Inc. and Winyah Rivers v. Duke Energy Progress, LLC 13 CvS 11032 (Wake County)” and “State of North Carolina *ex rel.* North Carolina Department of Environmental Quality and Catawba Riverkeeper Foundation, Inc., Waterkeeper Alliance, MountainTrue, Appalachian Voices, Yadkin Riverkeeper, Inc., Dan River Basin Association, and

Southern Alliance for Clean Energy v. Duke Energy Carolinas, LLC” 13 CvS 14461 (Mecklenburg County); three federal Clean Water Act lawsuits (“Roanoke River Basin Association v. Duke Energy Progress, LLC” No. 1:16-cv-607 (MDNC) (Mayo), “Roanoke River Basin Association v. Duke Energy Progress, LLC” No. 1:17-cv-452 (MDNC) (Roxboro), and “Appalachian Voices et al v. Duke Energy Carolinas, LLC” No. 1:17-cv-1097 (MDNC) (Belews Creek)); and twelve petitions for judicial review (“PJR”) in North Carolina Superior Court petitioning two Orders issued in the OAH Proceedings (Case Nos. 19 CvS 19908, 19 CvS 19909, 19 CvS 19910, 19 CvS 19911, 19 CvS 19912, 19 CvS 19913, 19 CvS 22714, 19 CvS 22715, 19 CvS 22716, 19 CvS 22717, 19 CvS 22718, and 19 CvS 22719).

6. The Parties desire to resolve and settle any disputes between them in connection with the OAH proceedings, the State Enforcement Actions, the federal Clean Water Act lawsuits, and the PJRs in order to ensure that the impoundments are excavated on an expedited basis and to remove the uncertainty associated with litigation. The Community Groups and Duke Energy further agree that the actions to be taken by DEQ and Duke Energy under this Agreement and related Consent Order will resolve the pending issues in the Clean Water Act lawsuits.

The Facilities

7. This Agreement addresses the following impoundments at the Facilities regulated under CAMA.
 - a. At the Allen Steam Station, there are two CCR impoundments, the Retired Ash Basin and the Active Ash Basin. The Retired Ash Basin is approximately 123 acres

and contains approximately 6,100,000 tons of coal ash and the Active Ash Basin is approximately 170 acres and contains approximately 10,480,000 tons of coal ash.²

- b. At the Belews Creek Steam Station, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 270 acres and contains approximately 11,970,000 tons of coal ash.
- c. At the Cliffside Steam Station/Rogers Energy Complex, there are two CCR impoundments, the Units 1-5 Inactive Ash Basin and the Active Ash Basin. The Units 1-5 Inactive Ash Basin is approximately 46 acres and contains approximately 2,350,000 tons of coal ash and the Active Ash Basin is approximately 86 acres and contains approximately 5,240,000 tons of coal ash.
- d. At the Marshall Steam Station, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 360 acres and contains approximately 17,650,000 tons of coal ash.³

² Note that the tonnage of coal ash includes only the coal ash contained within the impoundments and not coal ash in landfills or structural fills. Duke Energy on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. At Allen, the Retired Ash Basin Landfill and subgrade is 25 acres and contains approximately 1,740,000 tons of coal ash. There is approximately 1,392,000 tons of coal ash beneath the Retired Ash Basin Landfill, and approximately 991,000 tons of coal ash in the area designated as the “DORS” area.

³ Note that the tonnage of coal ash includes only the coal ash contained within the impoundments and not coal ash in landfills or structural fills. Duke Energy on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. At Marshall, the Structural Fill beneath solar panels contains approximately 6,490,000 tons of coal ash. The subgrade fill beneath Industrial Landfill (“ILF”) Cells 1 and 2 contains approximately 460,000 tons of coal ash. The subgrade fill beneath ILF Cells 3 and 4, contains approximately 409,000 tons of coals ash. The Old Ash Fill (1804 Phase I Landfill) contains approximately 626,000 tons of coal ash. The Retired Landfill (1804 Phase II Landfill) contains approximately 4,870,000 tons of coal ash. The ILF (Permit 18-12) contains approximately 2,050,000 tons of coal ash. The Marshall ILF continues to receive production ash and these tonnages represent the approximate tonnages as of the Effective Date.

- e. At the Mayo Steam Station, there is one CCR impoundment, the Ash Basin. The Ash Basin is approximately 153 acres and contains approximately 6,630,000 tons of coal ash.
 - f. At the Roxboro Steam Station, there are two CCR impoundments, the East Ash Basin and the West Ash Basin. The West Ash Basin is approximately 225 acres and contains approximately 12,970,000 tons of coal ash and the East Ash Basin is approximately 71 acres and contains approximately 7,100,000 tons of coal ash.⁴
8. Each of these impoundments is a CCR impoundment as defined by CAMA, N. C. Gen. Stat. § 130A-309.201(6), and the Federal CCR Rule 40 CFR Parts 257 and 261.
 9. The total approximate amount of the coal ash set forth in paragraph 7 is estimated to be 80.5 million tons.

Facility-Specific Obligations of Duke Energy.

Allen

10. **Closure of Coal Ash Impoundments.** At the Allen Steam Station, Duke Energy will excavate and remove all coal ash from the Retired Ash Basin and Active Ash Basin, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious

⁴ Note that the tonnage of coal ash includes only the coal ash contained within the impoundments and not coal ash in landfills or structural fills. Duke Energy on the one hand, and DEQ and the Community Groups on the other, have a dispute as to whether coal ash under a lawfully permitted landfill is regulated by CAMA. For Roxboro, the Roxboro Monofill contains approximately 6,818,000 tons of coal ash one portion of the landfill and an additional 7,635,000 tons of coal ash in a separate portion of that landfill. The Roxboro Monofill continues to receive production ash and these tonnages represent the approximate tonnages as of the Effective Date.

process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Duke Energy shall remove or permanently close all pipes currently running through or beneath the Retired Ash Basin and Active Ash Basin. Duke Energy will thereafter stabilize and close the area where the Retired Ash Basin and Active Ash Basin are located pursuant to applicable law. The total impoundment ash that will be excavated is estimated to be approximately 16,632,000 tons of coal ash.

11. **Disposition of Other Coal Ash.** Additionally, Duke Energy will excavate and remove coal ash from the Storage Areas, Structural Fills, and Landfill from the top of the Retired Ash Basin, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. The total non-impoundment ash that will be excavated is estimated to be approximately 2,731,000 tons of coal ash. The closure plan will provide that ash shall remain for structural stability around the footers for the transmission towers, and that all ash that remains will be covered with a geomembrane layer. The amount of coal ash referred to in this paragraph that shall remain is estimated to be between 30,000 and 50,000 tons and is unsaturated.

12. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2037, to complete all excavation as required in Paragraphs 10 and 11 and the Parties understand that Duke Energy will request variances to meet the deadline imposed by this Agreement. Duke Energy shall complete all excavation required in Paragraphs 10 and 11 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be

amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2037. For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time. The parties are aware that the Closure Plan submitted to DEQ for Allen on December 31, 2019, will not contain complete information reflecting the details of this Agreement. Pursuant to its statutory authority under N.C. Gen. Stat. § 130A-309.214(c), DEQ directs that such information shall be submitted no later than 30 days after the Effective Date.

13. **Groundwater Corrective Action Plan.** No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will include active remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, 15A NCAC Subchapter 2L (the “2L groundwater rules”), and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 51 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52.

Belews Creek

14. **Closure of Coal Ash Impoundments.** At Belews Creek, Duke Energy will excavate and remove all coal ash from the Ash Basin except the impoundment coal ash under or within the waste boundary of the Pine Hall Road Landfill either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as

environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Duke Energy shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy will thereafter stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total impoundment ash that will be excavated is estimated to be approximately 11,870,000 tons of coal ash. The closure plan will provide that ash shall remain underneath the Pine Hall Road Landfill, which is capped with a geosynthetic cap and has been closed pursuant to permit 8503-INDUS-1984 and stopped receiving coal ash in 2014. The amount of coal ash underneath the Pine Hall Road Landfill is estimated to be no more than 100,000 tons. Provided that, if Duke Energy is not able to demonstrate on or before February 1, 2020, that it is able to meet the requirements of paragraph 17, Duke shall submit an addendum to the closure plan on or before February 15, 2020, providing for the full excavation of this ash.

15. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2031, to complete all excavation as required in Paragraph 14, and the Parties understand that Duke Energy will request variances to meet the deadline imposed by this Agreement. Duke Energy shall complete all excavation required in Paragraph 14 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2034. For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

16. Structural Stability, Monitoring, and Sampling. The coal ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin shall be stabilized with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate, so as to prevent lateral movement of the coal ash pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former Ash Basin and downgradient of the Pine Hall Road Landfill, Duke Energy shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. Consistent with the provisions of Paragraph 51, the plan shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater concentrations in excess of the standards set forth in 15A NCAC 2L. 0202 (“2L groundwater standards”) for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 52, and (2) surface water treatment if the data shows impact from coal ash constituents above the 2B standards to waters of the State notwithstanding the provisions of Paragraph 52. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs. This paragraph shall not apply if the coal

ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin is excavated.

17. **Groundwater Corrective Action Plan.** No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will include active remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52. If the coal ash under and within the waste boundary of the Pine Hall Road Landfill and within the waste boundary of the Ash Basin is not excavated, then at a minimum, Duke Energy shall remedy violations that DEQ determines are material violations of the 2L groundwater standards attributable to the Ash Basin at or beyond the geographic limitation as described in Paragraph 52 by December 31, 2029, subject to the provisions of Paragraph 51.

Cliffside/Rogers

18. **Closure of Coal Ash Impoundments.** At Cliffside Steam Station/Rogers Energy Complex, Duke Energy will excavate and remove all coal ash from the Unit 5 Inactive Ash Basin and Active Ash Basin, either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Duke Energy shall remove or

permanently close all pipes currently running through or beneath the Unit 5 Inactive Ash Basin and Active Ash Basin. Duke Energy will thereafter stabilize and close the area where the Unit 5 Inactive Ash Basin and Active Ash Basin are located pursuant to applicable law. The total impoundment ash that will be excavated is estimated to be approximately 7,590,000 tons of coal ash.

19. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2028, to complete all excavation as required in Paragraph 18. Duke Energy shall complete all excavation required in Paragraph 18 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2029.

20. **Groundwater Corrective Action Plan.** No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will include active remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 50 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52.

Marshall

21. **Closure of Coal Ash Impoundments.** At the Marshall Steam Station, Duke Energy will excavate and remove all coal ash from the Ash Basin, except the coal ash under or within the waste boundaries of the PV Structural Fill and the 1804 Phase II Landfill, either (1) to

lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Duke Energy shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy will thereafter stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total ash that will be excavated is estimated to be approximately 16,800,000 tons of coal ash.

22. **Disposition of Other Coal Ash.** Additionally, as part of its groundwater Corrective Action Plan for the Marshall site, Duke Energy will excavate and remove approximately 626,000 tons of coal ash from the 1804 Phase I Landfill (sometimes referred to as the “old ash fill”) adjacent to the Ash Basin either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Such excavation shall be complete no later than December 31, 2024. An approximate depiction of this excavation is attached as **Exhibit A**. The total ash that will be excavated from the 1804 Phase I Landfill is approximately 626,000 tons of coal ash.

23. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2034, to complete all excavation as required in Paragraph 21, and the Parties understand that Duke Energy will request variances to meet the deadline imposed by this Agreement. Duke Energy shall complete all excavation required Paragraph 21 by the statutory deadline set

forth in the CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2035. For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

24. **Structural Stability, Monitoring, and Sampling.** The coal ash under and within the waste boundary of the PV Structural Fill and the 1804 Phase II Landfill and within the waste boundary of the Ash Basin shall be stabilized with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate, so as to prevent lateral movement of the coal ash pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former Ash Basin and downgradient of the PV Structural Fill and the 1804 Phase II Landfill, Duke Energy shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. Consistent with the provisions of Paragraph 51, the plan shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater concentrations in excess of the 2L groundwater standards for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 52, and (2) surface water treatment if the data shows impact from coal ash constituents above the 2B standards to waters of the

State notwithstanding the provisions of Paragraph 52. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs.

25. **Groundwater Corrective Action Plan.** No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. As part of the Corrective Action Plan, Duke Energy shall install a geosynthetic cap over the PV Structural Fill and 1804 Phase II Landfill by December 31, 2024. The Corrective Action Plan will include active remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 51 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52. At a minimum, Duke Energy shall remedy any material violations of the 2L groundwater standards as determined by DEQ that is attributable to the Ash Basin at or beyond the geographic limitation as described in Paragraph 52 by December 31, 2029, subject to the provisions of Paragraph 50.

Mayo

26. **Closure of Coal Ash Impoundments.** At the Mayo Steam Station, Duke Energy will excavate and remove all coal ash from the Ash Basin either (1) to lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) for beneficial use for cementitious purposes or another industrial process at least as

environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. Duke Energy shall remove or permanently close all pipes currently running through or beneath the Ash Basin. Duke Energy will stabilize and close the area where the Ash Basin is located pursuant to applicable law. The total ash that will be excavated is estimated to be approximately 6,630,000 tons of coal ash.

27. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2028, to complete all excavation as required in Paragraph 26. Duke Energy may request variances to meet the deadline imposed by this Agreement. Duke Energy shall complete all excavation required in Paragraph 26 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2029.
28. **Groundwater Corrective Action Plan.** No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will include remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 50 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52.

Roxboro

29. **Closure of Coal Ash Impoundments.** At the Roxboro Steam Station, Duke Energy will excavate and remove all coal ash from the West Ash Basin (and its extension impoundment area, sometimes referred to as the “Southern Extension Impoundment”) and all coal ash from the East Ash Basin (and its extension impoundment area, sometimes referred to as the “Eastern Extension Impoundment”) except the coal ash under or within the waste boundary of the Roxboro Monofill, Permit No. 7302-INDUS-1988. The excavated ash will be either (1) disposed of at lined onsite locations for disposal in a CCR landfill, industrial landfill, or municipal solid waste landfill or (2) used for beneficial use for cementitious purposes or another industrial process at least as environmentally protective. If a process other than a cementitious process is to be used, Duke Energy will provide reasonable notice to the Community Groups and DEQ. The scope of excavation is approximately depicted on **Exhibit B** to this agreement. Duke Energy shall remove or permanently close all pipes currently running through or beneath the West Ash Basin and East Ash Basin except those associated with the Roxboro Monofill. Duke Energy will thereafter stabilize and close the area where the West Ash Basin and East Ash Basins are located pursuant to applicable law. The total ash that will be excavated is estimated to be approximately 16,860,000 tons of coal ash. Additionally, Duke Energy will remove all coal ash fill from the Gypsum Pad area following retirement of the coal-fired generating units at Roxboro.

30. **Disposition of Other Coal Ash.** No later than 2 years and 6 months after the retirement of the coal-fired units at Roxboro, the remaining coal ash at the site will be closed and covered with a cap system that meets the requirements of North Carolina and federal law.

31. **Deadline for Closure.** Duke Energy projects that it will require until December 31, 2035, to complete all excavation as required in Paragraph 29, and that the Parties understand that Duke Energy will request variances to meet the deadline imposed by this Agreement. Duke Energy shall complete all excavation required in Paragraph 29 by the statutory deadline set forth in CAMA, as amended by House Bill 630, or as may further be amended from time to time, and subject to any variances granted pursuant to N.C. Gen. Stat. § 130A-309.215, but in any event not later than December 31, 2036. For clarity, this paragraph does not constitute a variance of the CAMA deadline for completion of closure. DEQ will approve or disapprove a request for variance at the appropriate time.

32. **Structural Stability, Monitoring, and Sampling.** The coal ash under and within the waste boundary of the Roxboro Monofill and within the waste boundary of the East Ash Basin shall be stabilized with a permanent structure (“stability feature”) for purposes of preserving the structural stability through the use of a wall unless a slope is shown to be as appropriate so as to prevent lateral movement of the coal ash pursuant to a plan to be submitted for DEQ approval no later than June 30, 2020. Within seven (7) days of completing the stability feature, Duke Energy shall notify DEQ. Additionally, pursuant to a plan approved by DEQ, following excavation in the footprint of the former East Ash Basin and downgradient of the Roxboro Monofill, Duke Energy shall conduct groundwater monitoring (including the installation of new wells if reasonably necessary) and, upon re-formation of surface water features that demonstrate DEQ-confirmed intermittent or perennial flows (not merely precipitation), surface water sampling. Consistent with the provisions of Paragraph 51, the plan shall propose (1) additional groundwater remedial measures for any coal ash constituent if the data indicate an increasing trend in groundwater

concentrations in excess of the 2L groundwater standards for four (4) consecutive semi-annual sampling events for that constituent, subject to the provisions of Paragraph 52, and (2) surface water treatment if the data shows impact from coal ash constituents above the 2B standards to waters of the State notwithstanding the provisions of Paragraph 52. This plan shall be submitted to DEQ no later than 120 days following completion of the stability feature. If appropriate, the additional monitoring plan will be integrated into the existing site monitoring plan to avoid redundant or conflicting monitoring programs.

33. Groundwater Corrective Action Plan. No later than December 31, 2019, Duke Energy shall submit a proposed Groundwater Corrective Action Plan to DEQ for its review and approval. The Corrective Action Plan will include active remedial measures designed to address any groundwater contamination as required by N.C. Gen. Stat. § 130A-309.211, the 2L groundwater rules, and any other applicable laws, statutes, or regulations, subject to the provisions of Paragraph 51 and provided that active remedial measures shall not be required to remediate areas within the geographic limitation as specified in Paragraph 52. At a minimum, Duke Energy shall remedy any material violations of the 2L groundwater standards as determined by DEQ that is attributable to the East Ash Basin at or beyond the geographical limitation described in Paragraph 52 by December 31, 2029, subject to the provisions of Paragraph 51.

34. Progress Towards Groundwater Remediation. Subject to the provisions of this Agreement regarding substantial compliance in Paragraph 51, no later than June 30, 2020, Duke Energy shall submit a report for approval by DEQ analyzing the progress required by June 30, 2023 and by June 30, 2026 to achieve such compliance with 2L groundwater standards by December 31, 2029. Subject to the provisions of this Agreement regarding

substantial compliance in Paragraph 50, no later than September 30, 2023 and September 30, 2026, Duke Energy shall submit reports demonstrating sufficient progress toward the goal of achieving compliance with the 2L groundwater standards. If DEQ determines that sufficient progress has not been made towards achieving this goal, Duke Energy shall implement additional remedial measures as required by DEQ.

Additional Obligations of Duke Energy

35. **Submission of Closure Plans.** Duke Energy will submit to DEQ one Closure Plan for each impoundment pursuant to N.C. Gen. Stat. § 130A-309.214(a) for each of the above-referenced Facilities in accord with the provisions of this Agreement on or before December 31, 2019. Within 30 days thereafter, Duke Energy shall submit the supplemental information requested by DEQ in Paragraph 12.
36. **Notice to Community Groups.** During the implementation of the groundwater corrective action plans and any monitoring required by the terms of this Agreement, Duke Energy will provide concurrent copies to the Community Groups of coal ash excavation reports and groundwater monitoring data (including spreadsheets) for the Facilities as these are provided to DEQ. This may occur through U.S. Mail or electronic means to the person designated in Paragraph 67.

Obligations of DEQ

37. **Review of Closure Plans.** DEQ will review these proposed Closure Plans and provide for public participation consistent with N.C. Gen. Stat. § 130A-309.214(b). The parties recognize that DEQ may request the submittal of additional information pursuant to N.C. Gen. Stat. § 130A-309.214(c). After receiving public comment, DEQ will approve or disapprove the proposed closure plans pursuant to N.C. Gen. Stat. § 130A-309.214(c).

DEQ will not disapprove a proposed closure plan on the basis of the closure methodology employed, to the extent that such methodology is consistent with this Agreement.

38. **Timely Review.** In accordance with applicable law, DEQ agrees to conduct an expeditious review and act expeditiously on all applications by Duke Energy for permits necessary for Duke Energy to undertake the actions required under this Agreement as required by N.C. Gen. Stat. § 130A-309.203.
39. **Review of Variance Requests.** DEQ acknowledges that the deadline for closure is a deadline for which the Secretary is authorized to grant a variance provided that the requirements of N.C. Gen. Stat. § 130A-309.215 are satisfied. DEQ acknowledges that an extension of time required to complete excavation ordered by DEQ and mandated by the terms of this Settlement Agreement may be a valid basis for seeking a variance from CAMA deadlines, including requests for variance under Paragraph 45 below for purposes of beneficiation. DEQ will approve or disapprove a request for variance at the appropriate time.
40. **CCR Rule Deadlines.** DEQ agrees to cooperate with (including as appropriate to support) and not oppose Duke Energy's efforts to extend the deadlines imposed by the federal CCR rule in court or before an administrative body to the extent that such an extension is necessary for Duke Energy to meet its obligations under this Agreement.
41. **Further Excavation.** For impoundments, structural fills, and landfills identified in this Agreement, DEQ shall not require additional excavation for CCR-impacted groundwater at Allen, Belews Creek, Cliffside, Marshall, Mayo, and Roxboro unless DEQ determines (1) there are material violations of the 2L groundwater standards or this Agreement within

the meaning of Paragraph 51 and (2) these material violations cannot reasonably be remedied by active remediation.

Obligations of the Community Groups

42. **CAMA Variance Requests.** The Community Groups will not oppose Duke Energy's requests for variances on the closure deadlines set forth in CAMA in court or before an administrative body, provided Duke Energy does not request to extend such deadlines past December 31, 2034 for basins at Belews Creek, December 31, 2035 for basins at Marshall, December 31, 2036 for basins Roxboro, and December 31, 2037 for basins at Allen.
43. **Closure Plans and CAPs.** The Community Groups agree that they will not challenge in court or before an administrative body DEQ's approval of Duke Energy's Closure Plans, CAPs (including application of a Restricted Designation), CAP implementation, landfill construction or operation permits, components or terms of NPDES permits or modifications to NPDES permits to the extent these components or terms are reasonably necessary for the obligations imposed by this Agreement (including, for example, NPDES permits or modifications relating to decanting and dewatering), stormwater permits, dam removal authorizations, or post-closure monitoring plans for Allen, Belews Creek, Cliffside, Marshall, Mayo, and Roxboro, or such other permits as required by this Agreement, provided those Closure Plans and CAPs conform with the terms of this Agreement.
44. **CCR Rule Deadlines.** The Community Groups agree not to oppose Duke Energy's efforts in court or in an administrative proceeding to extend the deadlines imposed by the federal CCR rule to the extent that such an extension is necessary for Duke Energy to meet its

obligations under this Agreement. If appropriate, the Community Groups will support such requests.

45. **Deadlines for Coal Ash Recycling.** The Community Groups agree not to oppose in court or before an administrative body, extensions to the CAMA closure dates as requested by Duke Energy, for the purposes of completing and beneficiation at Buck, Cape Fear, and HF Lee, through December 31, 2035.

Further Obligations

46. **Superior Court Consent Order.** The Parties will work together to submit a consent order for injunctive relief incorporating the terms of this Agreement for filing in Wake County and Mecklenburg County Superior Court in Case Nos. 13-CVS-11032 and 13-CVS-14461 (“Consent Order”) on or before January 31, 2020. In order to meet this deadline, the Parties will cooperate in the formation of the Consent Order, including periods for Notices. In the event the Superior Court refuses to enter the Consent Order, the parties agree that all parties shall retain the legal rights and positions that existed as of December 30, 2019 (including as applicable court rulings that constitute the law of the case). This paragraph shall be interpreted and enforced in order to fully effectuate the intent of the parties. To effectuate the intent of this paragraph, the Parties shall not object to the timeliness of any closure plan filed under the provisions of this paragraph and DEQ shall not approve any closure plan submitted under this Agreement prior to the entry of the Consent Order by the Superior Court, provided that DEQ may approve any closure plan on the last day for such approval under CAMA regardless of whether the Consent Order has been entered. It is expressly understood that in the event the Consent Order is not entered, and before the approval of

any closure plan by DEQ, Duke Energy intends to file alternative closure plans. It is further expressly understood that DEQ may not accept or approve these alternative closure plans.

47. Survival of Terms. The Parties intend and agree that the rights and obligations imposed by this Agreement shall be fully incorporated into the Consent Order contemplated by this Settlement Agreement, except for the obligations set forth in Paragraphs 48, 49 and 53. With the exception of the obligations set forth in Paragraph 48 (Dismissal of Related Litigation), Paragraph 49 (Compliance with CAMA), Paragraph 50 (DEQ Only State Entity Bound by this Agreement and Consent Order), and Paragraph 53 (Stipulations Between Only the Parties to this Agreement Regarding Rate Recovery Proceedings) this Settlement Agreement shall expire 90 days after entry of the Consent Order.

48. Dismissal of Related Litigation. Upon entry of the Consent Order by the North Carolina Superior Court and provided that there are no substantive modifications made by the Superior Court to the Consent Order, the Parties agree that Case Nos. 13 CvS 11032 and 13 CvS 14461 would be resolved. Within 15 days of entry of the Consent Order, Duke Energy shall dismiss with prejudice the following cases in the Office of Administrative Hearings: 19 EHR 2398, 19 EHR 2399, 19 EHR 2401, 19 EHR 2403, 19 EHR 2404, and 19 EHR 2406, and the following cases in North Carolina Superior Court: 19 CvS 19908, 19 CvS 19909, 19 CvS 19910, 19 CvS 19911, 19 CvS 19912, 19 CvS 19913, 19 CvS 22714, 19 CvS 22715, 19 CvS 22716, 19 CvS 22717, 19 CvS 22718, and 19 CvS 22719. Duke Energy and the Community Groups agree that the actions to be taken by Duke Energy and DEQ under this Agreement resolve and render moot the issues raised in the Clean Water Act lawsuits and will work cooperatively to prepare a joint motion dismissing those

claims with prejudice to be filed within 30 days of entry of the Consent Order in Superior Court. Each party shall bear its own costs and attorneys' fees in all litigation.

49. **Compliance with CAMA.** DEQ finds that the provisions of this Agreement satisfy the closure requirements of N.C. Gen. Stat. § 130A-309.214 for Duke Energy's obligations to close the CCR impoundments at the Facilities. In the event of inconsistency between this Agreement and DEQ's April 1 Closure Determinations, the terms of this Agreement shall control.

50. **DEQ Only State Entity Bound by this Agreement and Consent Order.** The Parties expressly acknowledge and agree to each of the following:

- a. The only State entity bound by this Agreement and any related Consent Order is DEQ.
- b. Nothing in this Agreement or any related Consent Order shall limit the arguments that may be made or conclusions that may be drawn by other State entities in any matter or proceeding concerning recovery through rates of costs incurred by Duke Energy.
- c. Neither resolution of cases or issues pursuant to this Agreement, nor the related Consent Orders, shall have any preclusive or *res judicata* effect against other State entities.

The Parties shall work together to ensure that the Consent Order effectuates the intent of this paragraph.

51. **Substantial Compliance.** For any term of this Agreement that requires compliance with the 2L groundwater standards, Duke Energy will not be deemed to be in violation of any such term and shall not be subject to civil penalties or enforcement action by DEQ so long as Duke Energy has used best efforts (as described in Paragraph 55) to implement the corrective action plan and post-closure monitoring and care plan unless DEQ determines

that there are multiple and material deviations from such standards at or beyond the geographic limitation set forth in paragraph 52 .

52. Geographic Limitation. Active remediation will not be required in the area within 500 feet of the waste boundary of each impoundments as shown on the most recent NPDES permit for each of the Facilities (except that if a property boundary or body of water is located closer than 500 feet to the waste boundary, that property boundary or body of water shall define the geographic limits for active remediation) (“geographic limitation”), provided that, subject to the provisions of Paragraph 51, coal ash constituents outside the geographic limitation described in this paragraph do not increase beyond the 2L groundwater standards post-closure. It is expressly understood and agreed that DEQ will not assess a civil penalty or pursue an enforcement action for any exceedances of the 2L groundwater standards within the geographical limitation so long as Duke Energy is making best efforts (as defined by paragraph 55) to implement the approved corrective action plan and closure plan as determined by DEQ. The corrective action plans may be periodically updated as required by DEQ if the groundwater cleanup fails to meet projected targets.

53. Stipulations Between Only the Parties to this Agreement Regarding Rate Recovery Proceedings.

- a. DEQ and the Community Groups agree that closing the CCR impoundments at the Allen, Belews Creek, Cliffside, Marshall, Mayo, and Roxboro Steam Stations in accord with this Agreement (including the obligations imposed by the Consent Order contemplated by this Agreement) is reasonable, prudent, in the public interest, and consistent with law. This subparagraph applies only to the actions of

Duke Energy in entering into this Agreement and assuming the obligations under this Agreement. For example, and without limitation, the agreement in this subparagraph does not extend, nor shall it be construed to apply, to the issues of (i) whether Duke Energy acted prudently and reasonably in the past, or (ii) whether Duke Energy prudently and reasonably performs its obligations under this Agreement. Nothing in this Agreement shall be taken as an admission of any imprudent or unreasonable actions by Duke Energy.

- b. Nothing in this Agreement, including but not limited to subparagraph (a) above, shall be taken as an endorsement or opposition by DEQ or the Community Groups of recovery through rates of the costs incurred by Duke Energy implementing the terms of this Agreement or related Consent Order.
- c. DEQ and the Community Groups shall not challenge or otherwise object in court or before an administrative body to the reasonableness, prudence, public interest, or legal requirement for Duke Energy to comply with the obligations imposed by this Agreement, related Consent Order, or as to the Agreement itself.
- d. The Parties state and agree that the issue of recovery through rates of the costs imposed by this Agreement and related Consent Order is to be determined by the North Carolina Utilities Commission upon proper application and related legal proceedings. DEQ has no role in making the determination of the issue of recovery through rates of the costs imposed by this Agreement and related Consent Order. DEQ neither endorses nor opposes such recovery.
- e. Nothing in this Agreement shall prevent DEQ from providing factual non-confidential information relating to the matters covered in this Agreement,

provided that it is expressly understood that Duke Energy does not waive any objection to the admissibility of this information based on evidentiary, administrative, statutory, or equitable grounds before any court or administrative body. If DEQ intends to file testimony or amicus briefs or provides discovery concerning the matters that are the subject of this Agreement in connection with ongoing judicial or administrative proceedings, it shall provide reasonable notice of the subject-matter of such testimony or brief or discovery before submitting it to the administrative agency or court.

- f. Nothing in this Agreement shall prevent the Community Groups from participating as permitted by law or agency ruling in rate recovery proceedings or objecting to Duke Energy's rate recovery on grounds not inconsistent with the terms of this Agreement.
- g. The Parties understand and agree that this Agreement and related Consent Order may be presented to the North Carolina Utilities Commission.

54. **No Admission.** By entering into this Agreement, no Party to this Agreement admits wrongdoing or liability related to matters covered in this Agreement.

55. **Force Majeure.** The Parties agree that it will not be a violation of this Agreement if performance of any of the obligations set forth is delayed by an extraordinary event that is beyond the control of Duke Energy, or any entity controlled by Duke Energy or its contractors, despite best efforts to fulfill the obligation. Such causes are war, civil unrest, act of God, or act of a governmental or regulatory body delaying performance or making performance impossible including any appeal or decision remanding, overturning, modifying or otherwise acting (or failing to act) on a permit or similar permission or action

that prevents or delays an action needed for the performance of any of the work contemplated under this Agreement such that it prevents or substantially interferes with Duke Energy's performance within the time frames specified herein. Duke Energy shall bear the burden of proving by a preponderance of the evidence the existence of such circumstances. Such circumstances do not include the financial inability to complete the work, increased cost of performance, or changes in business or economic circumstances.

- a. To qualify as a force majeure under this Agreement, the failure of a permitting authority to issue a necessary permit in a timely fashion which prevents Duke Energy from meeting the requirements in this Agreement must be beyond the control of Duke Energy, and Duke Energy must have taken all steps available to it to obtain the necessary permit, including but not limited to submitting a complete permit application, responding to requests for additional information by the permitting authority in a timely fashion, and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal those terms and conditions imposed by the permitting authority.
- b. The requirement that Duke Energy use "best efforts" in this Agreement includes using commercially reasonable efforts to anticipate any event that delays its obligations and to address the event in a commercially reasonable manner as it is occurring or following the event such that delay is minimized to the greatest extent possible.

56. Stay of Pending Proceedings. Within 15 days of execution of this Agreement, the Parties shall take all actions necessary to stay further proceedings before the Office of Administrative Hearings in matters 19 EHR 02401 (regarding Allen), 19 EHR 02398

(regarding Belews Creek), 19 EHR 02399 (regarding Rogers/Cliffside), 19 EHR 02403 (regarding Marshall), 19 EHR 02404 (regarding Mayo), and 19 EHR 02406 (regarding Roxboro), and all petitions for judicial review related thereto. All stays shall remain in existence until an agreed-upon Consent Order is entered in Superior Court and no further discovery or other proceedings shall occur.

57. Obligations of Duke Energy. Upon entry of the Consent Order, Duke Energy Progress, LLC and Duke Energy Carolinas, LLC shall be responsible for carrying out the obligations of the Consent Order until relieved by the Court.

58. Limitation on Remedy. Notwithstanding the foregoing, the Parties' sole and exclusive remedy for breach of this Agreement shall be an action for specific performance or injunction. In no event shall any Party be entitled to monetary damages for breach of this Agreement. In addition, no legal action for specific performance or injunction shall be brought or maintained until: (a) the non-breaching Party provides written notice to the breaching Party which explains with particularity the nature of the claimed breach, and (b) within thirty (30) days after receipt of said notice, the breaching Party fails to cure the claimed breach or, in the case of a claimed breach which cannot be reasonably remedied within a thirty (30) day period, the breaching Party fails to commence to cure the claimed breach within such thirty (30) day period, and thereafter diligently complete the activities reasonably necessary to remedy the claimed breach.

59. Binding Agreement. This Agreement shall apply to, and be binding on, the Parties and their respective agents, successors, and assigns.

60. **Modification of this Agreement.** This Agreement may not be modified, altered or changed except by written agreement of all Parties, specifically referring to this Agreement.
61. **Counterpart Originals.** This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.
62. **Authorization to Sign.** The undersigned representatives of the Parties certify that they are fully authorized by the respective Parties whom they represent to enter into the terms and conditions of this Agreement and to legally bind such Parties to it.
63. **No Limitation on Administrative Process and Judgment.** The Parties recognize that DEQ is a governmental agency with statutory rights or obligations, and must abide by all applicable procedural and substantive laws and regulations in the exercise of such authority during the implementation of this Agreement. No provision in this Agreement shall diminish, modify, or otherwise affect the statutory or regulatory authorities of DEQ. Nothing in this Agreement shall limit the opportunity for the Community Groups to participate in any administrative process to the extent consistent with their commitments in this Agreement.
64. **No Limitation of Administrative and Contractual Rights.** For any provision in this Agreement where DEQ makes a determination on a matter, nothing in this Agreement waives any rights of a Party under the North Carolina Administrative Procedure Act (including the right to appeal, if any), nor does a determination by DEQ on a matter prohibit a challenge to that determination under the terms of this Agreement, where appropriate.

65. **Other Corrective Action.** Nothing in this Agreement supersedes or negates Duke Energy's obligation to conduct groundwater assessment and, if needed, corrective action for sources of groundwater contamination other than coal ash impoundments governed by this Agreement or CAMA at any of the Facilities.

66. **Governing Law.** The Parties agree that this Agreement shall be governed under and controlled by the law of the State of North Carolina.

67. **Notice.** Whenever notice is required to be given or a document is required to be sent by one Party to another under the terms of this Agreement, it shall be provided to all Parties, directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. Notice or submission by electronic mail is acceptable.

a. As to DEQ:

Sheila Holman
Assistant Secretary for the Environment
1601 Mail Service Center
Raleigh, NC 27699-1601
sheila.holman@ncdenr.gov

Cc: William F. Lane
General Counsel
1601 Mail Service Center
Raleigh, NC 27699-1601
Bill.Lane@ncdenr.gov

b. As to Duke Energy:

Kodwo Ghartey-Tagoe
Executive Vice-President and Chief Legal Officer
Duke Energy Corp.
Mail Code DEC48H
550 South Tryon Street
Charlotte, NC 28202

Kodwo.Ghartey-Tagoe@duke-energy.com

c. As to the Community Groups:

Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for Community Groups
601 West Rosemary Street, Suite 220
Chapel Hill, NC 27516-2356
fholleman@selcnc.org

[signatures on separate pages]

SETTLEMENT AGREEMENT**DUKE ENERGY CAROLINAS, LLC**

By: Kodwo Ghartey-Tagoe
Kodwo Ghartey-Tagoe
Executive Vice-President, Chief Legal Officer
DUKE ENERGY CAROLINAS, LLC and Authorized
Designated Official for DUKE ENERGY CAROLINAS, LLC

Date: December 31, 2019

DUKE ENERGY PROGRESS, LLC

By: Kodwo Ghartey-Tagoe
Kodwo Ghartey-Tagoe
Executive Vice-President, Chief Legal Officer
DUKE ENERGY PROGRESS, LLC and Authorized
Designated Official for DUKE ENERGY PROGRESS, LLC

Date: December 31, 2019

SETTLEMENT AGREEMENT

THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

By: Michael S. Regan
Michael Regan
Secretary

Date: Dec 31, 2019

SETTLEMENT AGREEMENT**THE COMMUNITY GROUPS:****APPALACHIAN VOICES**

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

THE STOKES COUNTY BRANCH OF THE NAACP

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

MOUNTAINTRUE

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

THE CATAWBA RIVERKEEPER FOUNDATION

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

THE SIERRA CLUB

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

SETTLEMENT AGREEMENT**THE COMMUNITY GROUPS:****THE WATERKEEPER ALLIANCE**

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

THE ROANOKE RIVER BASIN ASSOCIATION

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

CAPE FEAR RIVER WATCH, INC.

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

NEUSE RIVER FOUNDATION/SOUND RIVERS, INC.

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

NORTH CAROLINA STATE CONFERENCE OF THE NAACP

By: Frank S. Holleman III
Frank S. Holleman III
Senior Attorney
Southern Environmental Law Center
Counsel for the Community Groups

Date: December 31, 2019

LEGEND

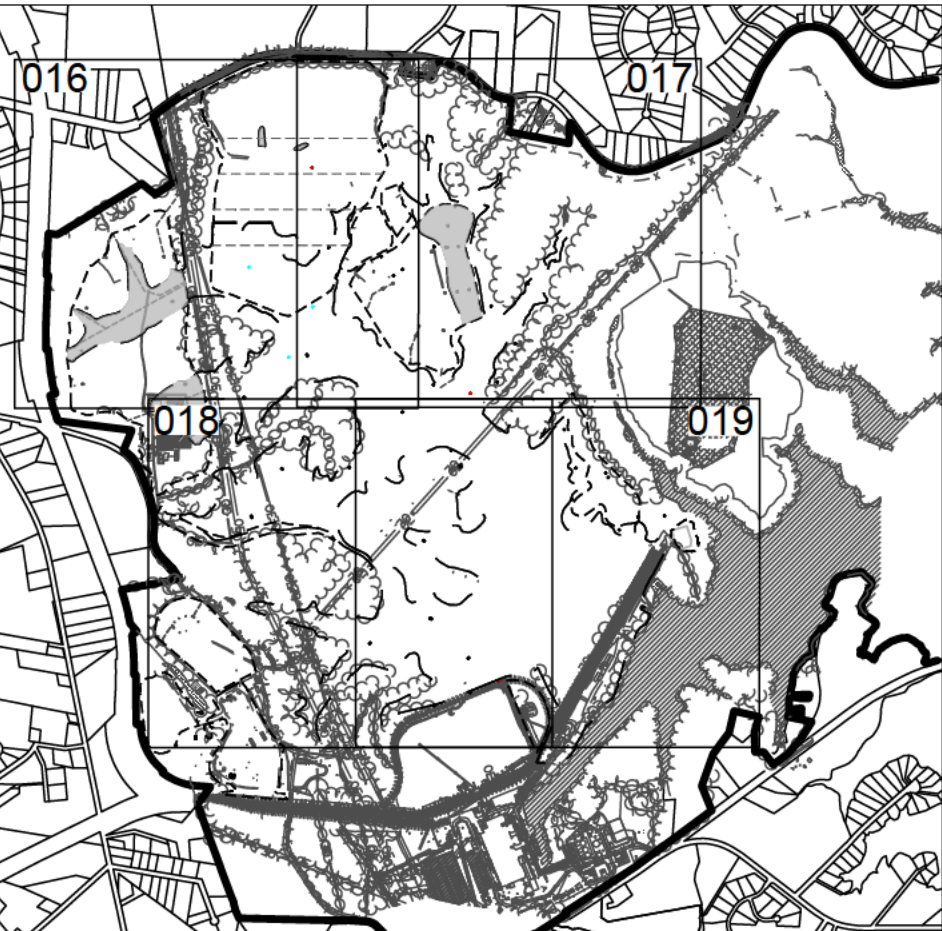
- EXISTING MAJOR TOPOGRAPHIC CONTOUR
- EXISTING MINOR TOPOGRAPHIC CONTOUR
- ESTIMATED BOTTOM OF CCR MAJOR TOPOGRAPHIC CONTOUR
- ESTIMATED BOTTOM OF CCR MINOR TOPOGRAPHIC CONTOUR
- ASH BASIN WASTE BOUNDARY (APPROXIMATE)
- MAR-145 UPDATED ASH BASIN WASTE BOUNDARY (APPROXIMATE)
- EXISTING SITE FEATURE (APPROXIMATE)
- INDUSTRIAL LANDFILL (ILF) PHASE BOUNDARY (APPROXIMATE)
- PROPERTY BOUNDARY

NOTES

- BASIS OF BEARINGS: NC GRID NAD83/2011. ELEVATIONS ARE BASED ON NAVD88.
 - HORIZONTAL LIMITS OF ASH BASIN BASED UPON HISTORICAL TOPOGRAPHIC SURVEYS AND AVAILABLE DESIGN DRAWINGS FROM DUKE ENERGY. ACTUAL LIMITS TO BE ESTABLISHED DURING CLOSURE.
 - VERTICAL EXTENTS OF CCR WITHIN ASH BASIN BASED UPON AVAILABLE PRE-DEVELOPMENT TOPOGRAPHY SURVEY AND 2014 BATHYMETRIC SURVEY. ACTUAL DEPTH OF CCR TO BE DETERMINED DURING ASH BASIN CLOSURE.
 - PHASE I OF THE 1804 LANDFILL AND THE STRUCTURAL FILL ACCESS ROAD TO BE EXCAVATED AND REMOVED AS PART OF ASH BASIN CLOSURE. EXCAVATION GRADES SHOWN ARE APPROXIMATE.
 - CCR EXCAVATION GRADES ADJACENT TO CCR TO REMAIN IN PLACE INSIDE HISTORICAL ASH BASIN LIMITS TO BE ESTABLISHED AFTER ENGINEERING ANALYSES BASED UPON CONDITIONS AT THE TIME OF CLOSURE ARE COMPLETED. SLOPES SHOWN NOT TO EXCEED 5-HORIZONTAL TO 1-VERTICAL FOR PLANNING PURPOSES.
- Rev. E 6. CCR WITHIN THESE AREAS TO REMAIN IN-PLACE AFTER CLOSURE.

REFERENCES

1. SEE SHEET MAR_C999.002.002 FOR DRAWING REFERENCES.



DRAWING KEY

DRAFT

NOT FOR CONSTRUCTION

AECOM

N.C. ENGINEERING LICENSE NO. F-0342

SEAL

DRAFT

ESTIMATED BOTTOM OF ASH CONTOUR MAP (OVERALL)

MARSHALL STEAM STATION
CLOSURE PLAN (DRAFT 100%)
CATAWBA COUNTY, NORTH CAROLINA

ISSUED FOR APPROVAL (DRAFT 100%)



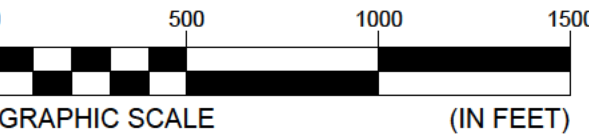
SCALE: AS SHOWN
DWG TYPE: .DWG
JOB NO: 60603377
DATE: 11/6/2019
DES: JMW
DFTR: MAW
CHKD: RJB
ENGR: RJB

FILENAME: EXPECTED BOTTOM OF ASH.DWG

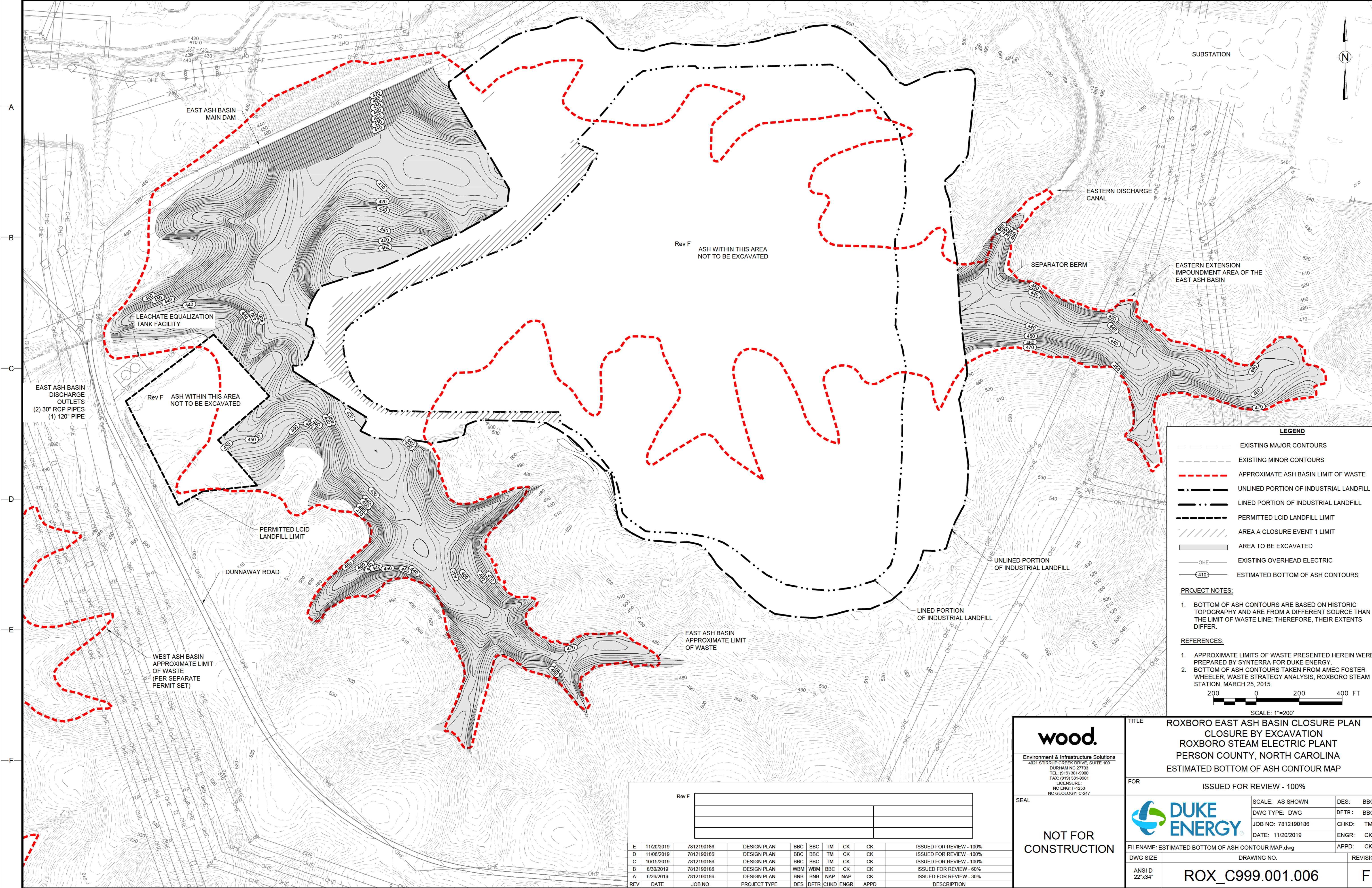
DWG SIZE: ANSI D 22.0"x34.0"

MAR_C999.002.015

E



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENG	APPD	DESCRIPTION
A	06/21/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR REVIEW (DRAFT 30%)
B	08/30/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR REVIEW (DRAFT 60%)
C	10/11/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR APPROVAL (DRAFT 100%)
D	11/6/19	60603377		JMW	MAW	RJB	RJB	JAB	ISSUED FOR APPROVAL (DRAFT 100%)



LEGEND

EXISTING MAJOR CONTOURS

EXISTING MINOR CONTOURS

APPROXIMATE ASH BASIN LIMIT OF WASTE

UNLINED PORTION OF INDUSTRIAL LANDFILL

LINED PORTION OF INDUSTRIAL LANDFILL

PERMITTED LCID LANDFILL LIMIT

AREA A CLOSURE EVENT 1 LIMIT

AREA TO BE EXCAVATED

OHE

EXISTING OVERHEAD ELECTRIC

(410)

ESTIMATED BOTTOM OF ASH CONTOURS

PROJECT NOTES:

1. BOTTOM OF ASH CONTOURS ARE BASED ON HISTORIC TOPOGRAPHY AND ARE FROM A DIFFERENT SOURCE THAN THE LIMIT OF WASTE LINE; THEREFORE, THEIR EXTENTS DIFFER.

REFERENCES:

1. APPROXIMATE LIMITS OF WASTE PRESENTED HEREIN WERE PREPARED BY SYNTERRA FOR DUKE ENERGY.

2. BOTTOM OF ASH CONTOURS TAKEN FROM AMEC FOSTER WHEELER, WASTE STRATEGY ANALYSIS, ROXBORO STEAM STATION, MARCH 25, 2015.

200 0 200 400

FT

SCALE: 1"=200'

wood.

Environment & Infrastructure Solutions
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM NC 27703
TEL: (919) 381-9900
FAX: (919) 381-9901
LICENSEURE:
NC ENG: F-1253
NC GEOLOGY: C-247

SEAL

NOT FOR CONSTRUCTION

TITLE

ROXBORO EAST ASH BASIN CLOSURE PLAN
CLOSURE BY EXCAVATION
ROXBORO STEAM ELECTRIC PLANT
PERSON COUNTY, NORTH CAROLINA
ESTIMATED BOTTOM OF ASH CONTOUR MAP

FOR

ISSUED FOR REVIEW - 100%

DUKE ENERGY

SCALE: AS SHOWN
DWG TYPE: DWG
JOB NO: 7812190186
DATE: 11/20/2019

DES: BBC
DFTR: BBC
CHKD: TM
ENGR: CK
APPD: CK

FILENAME: ESTIMATED BOTTOM OF ASH CONTOUR MAP.dwg

DWG SIZE

ANSI D 22"x34"

DRAWING NO.

ROX_C999.001.006

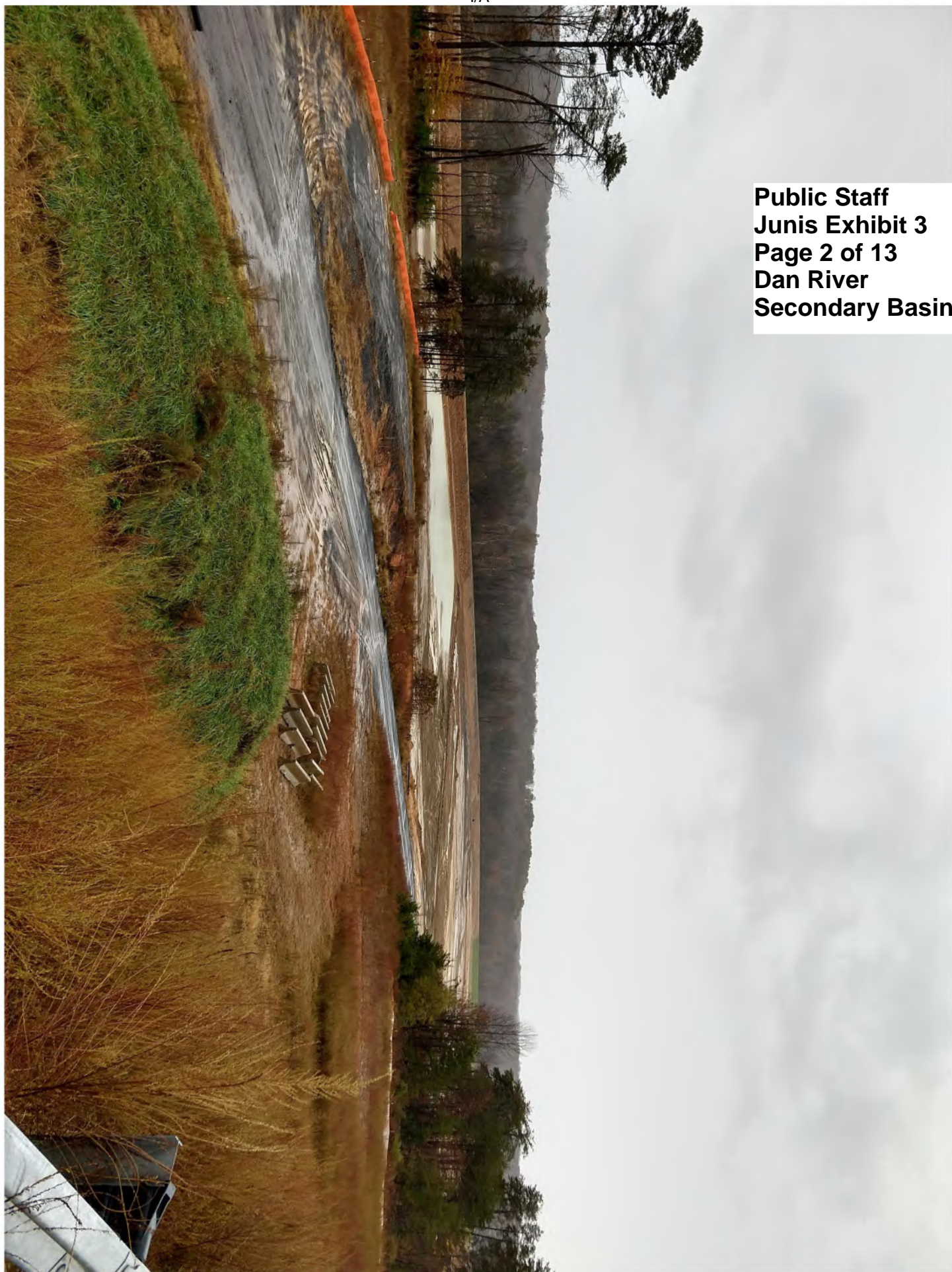
REVISION

F

Rev F									
E	11/20/2019	7812190186	DESIGN PLAN	BBC	BBC	TM	CK	CK	ISSUED FOR REVIEW - 100%
D	11/06/2019	7812190186	DESIGN PLAN	BBC	BBC	TM	CK	CK	ISSUED FOR REVIEW - 100%
C	10/15/2019	7812190186	DESIGN PLAN	BBC	BBC	TM	CK	CK	ISSUED FOR REVIEW - 100%
B	8/30/2019	7812190186	DESIGN PLAN	WBM	WBM	BBC	CK	CK	ISSUED FOR REVIEW - 60%
A	6/26/2019	7812190186	DESIGN PLAN	BNB	BNB	NAP	NAP	CK	ISSUED FOR REVIEW - 30%
REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION



**Public Staff
Junis Exhibit 3
Page 2 of 13
Dan River
Secondary Basin**



**Public Staff
Junis Exhibit 3
Page 3 of 13
Dan River
Landfill**



**Public Staff
Junis Exhibit 3
Page 4 of 13
Belews Creek
Active Ash Basin**



**Public Staff
Junis Exhibit 3
Page 5 of 13
Belews Creek
Lined Retention Basins**



**Public Staff
Junis Exhibit 3
Page 6 of 13
Belews Creek
Constructed Seep**





I/A

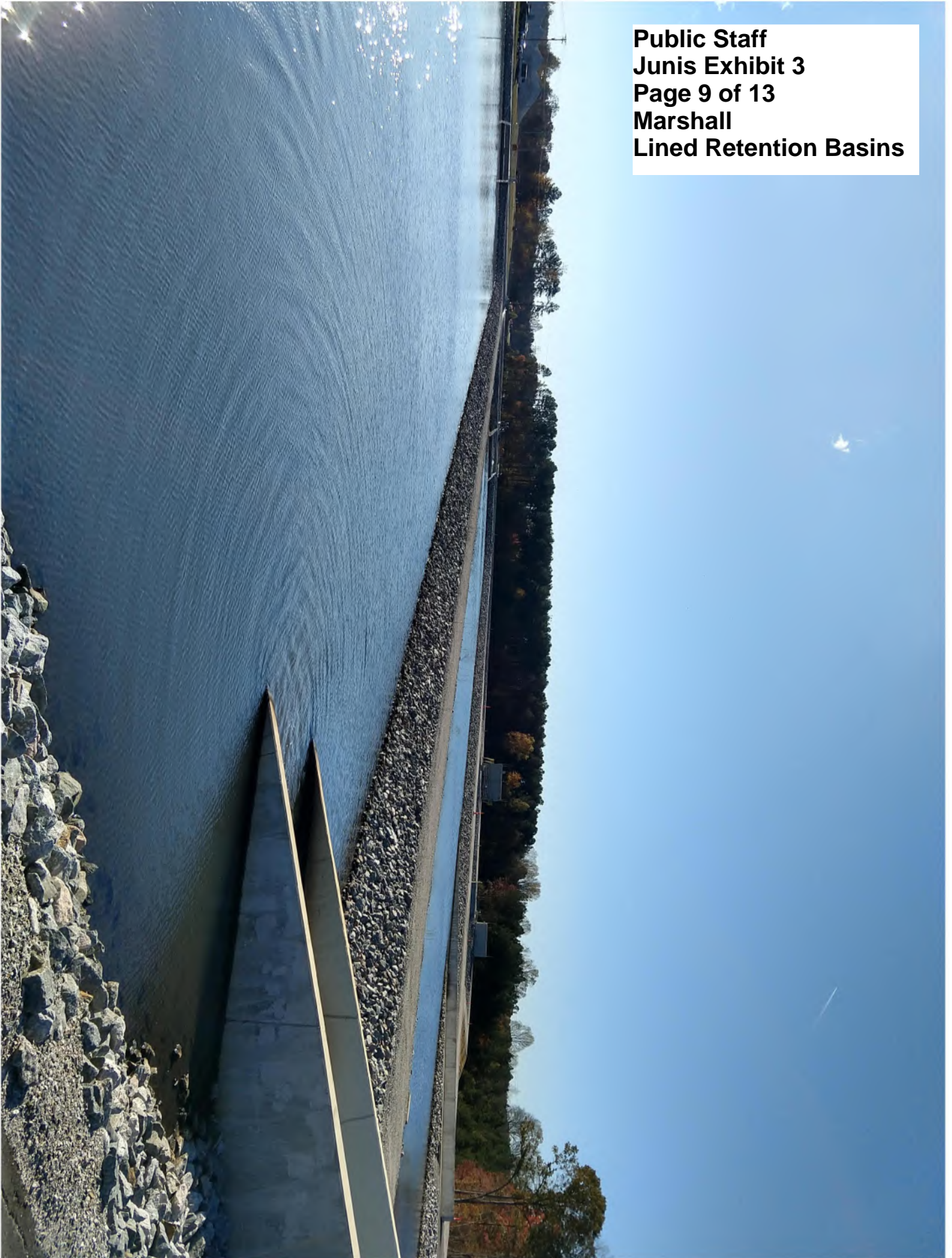
**Public Staff
Junis Exhibit 3
Page 8 of 13
Marshall
Bottom Ash Submerged
Flight Conveyor System**



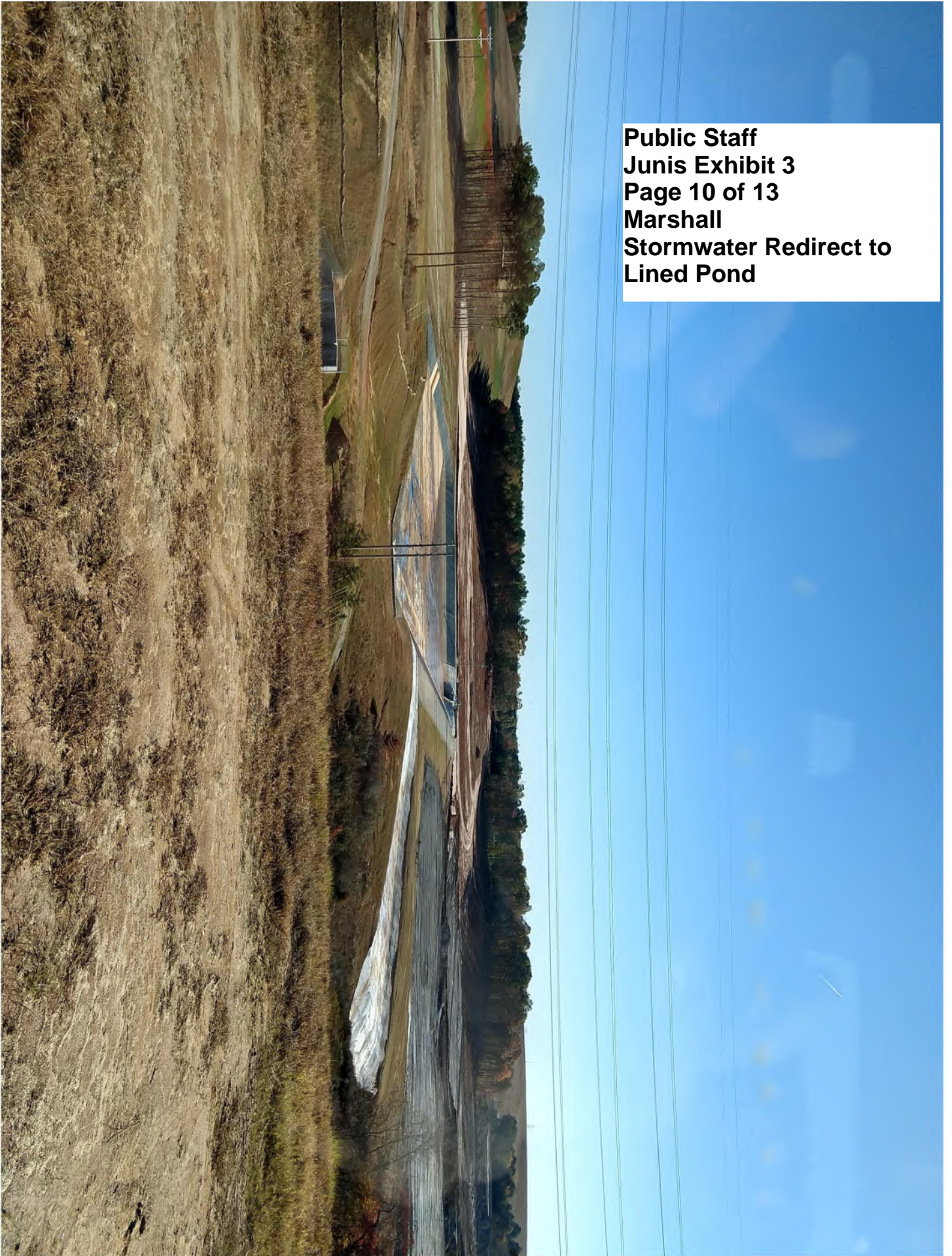
Feb 18 2020

OFFICIAL COPY

**Public Staff
Junis Exhibit 3
Page 9 of 13
Marshall
Lined Retention Basins**



**Public Staff
Junis Exhibit 3
Page 10 of 13
Marshall
Stormwater Redirect to
Lined Pond**



**Public Staff
Junis Exhibit 3
Page 11 of 13
Buck
Ash Stack, Ash Basin 1,
Beneficiation Unit**



**Public Staff
Junis Exhibit 3
Page 12 of 13
Buck
Beneficiation Unit**





Public Staff
Junis Exhibits 4 and 20

Part 3 of 3

Feb 18 2020

DEC NCPS DR 2-22

Public Staff
Junis Exhibit 5**Active Stations:**

Station/Unit	FGD	SNCR	SCR	Precipitators	Dry Fly Ash	Dry Bottom Ash Handling	Low Nox Burners	MATS Control Systems	FGD Waste Water Treatment
Allen 1	2009	2003	N/A	1970	2009	2019	1994	2016	Physchem & Bioreactor - 2009
Allen 2	2009	2008		1970			1994		
Allen 3	2009	2005		1958			1994		
Allen 4	2009	2006		1958			1996		
Allen 5	2009	2008		1959			1996		
Belews Creek 1	2008	N/A	2003	1972	1985	2018	2000	N/A	Physchem & Bioreactor - 2008
Belews Creek 2	2008		2004	1972	1985		2000		
Cliffside 5	2010	N/A	2002	1969	2017	2018	1995	2015	Solids Removal System: 2010; Expansion to Include Bioreactor in Progress
Cliffside 6***	2012		2012	2012	2012	2017	2012	2012	N/A
Marshall 1	2007	2006	N/A	1970	2005	2018	1995	N/A	Phychem & Bioreactor - 2019
Marshall 2	2007	2007	N/A	1970			1996	N/A	
Marshall 3	2007	N/A	2008	1968			1995	N/A	
Marshall 4	2006	2006	N/A	1968			1994	2015	

Retired Stations:

Station/Unit	Retired	FGD	SNCR	SCR	Precipitators/Baghouse*	Dry Ash Handling	Low Nox Burners	MATS Control Systems	FGD Waste Water Treatment
Buck 3	2011	N/A	N/A	N/A	1970	N/A	N/A	N/A	N/A
Buck 4	2011				1970		N/A		
Buck 5	2013				1971		N/A		
Buck 6	2013				1971		N/A		
Cliffside 1	2011				1970		N/A		
Cliffside 2	2011				1970		N/A		
Cliffside 3	2011				1972		1997		
Cliffside 4	2011				1972		1996		
Dan River 1	2012				1970		N/A		
Dan River 2	2012				1970		N/A		
Dan River 3	2012				1970		1996		
Riverbend 4	2013				1971		1994		
Riverbend 5	2013				1972		1995		
Riverbend 6	2013				1971		1995		
Riverbend 7	2013				1971		1995		
WS Lee 1	2014				1972		1994		
WS Lee 2	2014				1972		1995		
WS Lee 3	2014**				1971		1997		

* Precipitators dates from design drawings.

** Converted to natural gas

*** Cliffside 6 also has a baghouse

**Duke Energy Carolinas
Response to
NC Public Staff Data Request
Data Request No. NCPS 2
Coal Ash Specific**

Docket No. E-7, Sub 1214

**Date of Request: September 10, 2019
Date of Response: October 9, 2019**

☐

CONFIDENTIAL

☒

NOT CONFIDENTIAL

Confidential Responses are provided pursuant to Confidentiality Agreement

The attached response to NC Public Staff Data Request No. 2-15, was provided to me by the following individual(s): Trudy H. Morris, Project Manager II, and was provided to NC Public Staff under my supervision.

Camal O. Robinson
Senior Counsel
Duke Energy Carolinas

North Carolina Public Staff
Data Request No. 2
DEC Docket No. E-7, Sub 1214
Item No. 2-15
Page 1 of 2

Request:

15. Please identify, by plant and CCR location (e.g., lay of land area, cinder pile, impoundment, and landfill), all permitted and unpermitted discharges from CCR impoundments, including all seeps. For each, please include the following:

- Whether the discharge or seep is authorized in the facility's NPDES permit.
- For discharges and seeps not authorized by NPDES permits (including those for which permit applications are pending), please explain whether Duke Energy contends they were or were not violations of NPDES permit requirements.
- Whether the discharge or seep is engineered.
- The date the discharge or seep was first identified and, if applicable, the year the discharge or seep was eliminated.

Response:

DEC objects to Request No. 2-15, including all subparts, on the following grounds: the request is overly broad and unduly burdensome as it is not limited to any identifiable or reasonable timeframe; the request is not reasonably calculated to lead to the discovery of admissible evidence and it seeks information irrelevant to and unrelated to the CCR costs that the Company is seeking to recover in this case, which are costs incurred between January 1, 2018 and January 31, 2020. Subject to and without waiving these objections, DEC will provide responsive information from January 1, 2018 through present. Response provided by: Chris Hallman (Principal Environmental Specialist), Matt Hanchey (Assoc. General Counsel) and Bryson Allison (Engineer III) (a) Since January 1, 2018, Duke Energy Carolinas has new NPDES permits for five active or retired North Carolina coal plants (Allen, Belews Creek, Buck, Marshall, and Rogers). Each of these permits identifies new outfalls permitting discharges from constructed seeps. Also during this period, DEC entered into a series of Special Orders by Consent (SOCs) with the North Carolina Environmental Management Commission regarding non-constructed seeps. The SOCs provide compliance schedules for the companies to address non-engineered seeps by decommissioning and decanting the surface impoundments. SOCs are now in place for Allen, Belews Creek, Buck, Marshall, and Rogers. Riverbend entered an SOC in 2016, and Dan River has no unpermitted seeps. In addition to showing which of the seeps are covered by NPDES permits, the attachment included with this response also shows which seeps are included within the scope of the SOCs. (b) Duke Energy continues to maintain that seeps are not violations of NPDES permit requirements. The Company believes that unpermitted seeps are best characterized by language from the SOCs that "[n]on-constructed seeps create conditions such that certain surface water quality standards may not consistently be met at all Duke Energy monitoring sites." (See, for example, Special Order by Consent EMC SOC WQ S17-009, para. 1.1.) (c) The status of seeps as "constructed" or "non-constructed" is included in the attachment included with this response. Although "constructed" means essentially the same thing as "engineered" in this context, Duke Energy and NCDEQ changed terminology to avoid the implication that these features were necessarily designed by an engineer. (d) For the purpose of this response, Duke Energy considers a seep to have been eliminated if it is no longer considered to be a discharge

North Carolina Public Staff
Data Request No. 2
DEC Docket No. E-7, Sub 1214
Item No. 2-15
Page 2 of 2

associated with a surface impoundment. In the process of developing the SOC's, Duke Energy Carolinas worked with the North Carolina Department of Environmental Quality to "disposition" certain areas previously identified as potential seeps. Dispositioning a potential seep involved an evaluation of whether the seep had been eliminated through an engineering solution, had ceased to flow due to site changes, or could be ruled out due to a lack of impact from coal ash-related constituents. The attachment included with this response indicates which seeps have been dispositioned and the basis for dispositioning.

Please see the following excel file: DEC NCPS 2-15 (Seep Summary).xlsx



DEC NCPS 2-15
(Seep Summary).xlsx

April 25, 2018

Mr. Paul Draovitch, Senior Vice President EHS
Duke Energy
526 S. Church Street
Mail Code EC3XP
Charlotte, NC 28202

Subject: **SPECIAL ORDER BY CONSENT**
SOC No. S17-009
Duke Energy Carolinas, LLC
Allen Steam Station, Marshall Steam Station & Rogers Energy Complex
NPDES Permits NC0004979, NC0004987 & NC0005088
Gaston, Catawba & Rutherford Counties

Dear Mr. Draovitch:

Attached for your records is a copy of the Special Order by Consent (SOC) approved by the Environmental Management Commission on April 12, 2018, and signed by the Chairman of the Commission on April 18, 2018.

The terms and conditions of the SOC are in full effect, including those requiring submittal of written notice of compliance or non-compliance with any schedule date. The following items are brought to your attention as they pertain to the terms and conditions of the SOC:

- Payment of the upfront penalty is due no later than May 25, 2018.
- Monitoring performed per the terms of the SOC shall commence during the current calendar quarter (April – June), with results submitted to the Division of Water Resources (DWR) no later than July 30, 2018. Subsequent monitoring and reporting shall occur as specified in the SOC.
- DWR acknowledges receipt of Duke Energy's letter dated April 23, 2018, confirming the implementation of dry fly ash handling at the Rogers Energy Complex.
- With regard to concerns for the safety of personnel collecting samples, the following locations are deemed to be acceptable for the purposes of water quality monitoring required by the SOC near the Rogers Energy Complex:
 - ▶ Upstream in the Broad River – at the U.S. Highway 221A bridge.
 - ▶ Downstream in the Broad River – at a point along the bank approximately 1,800 feet downstream from seep S-07.
 - ▶ Upstream in Suck Creek – at the S.R. 1002 (McCraw Road) bridge.

Pursuant to North Carolina General Statute 143-215.3D, water quality fees have been revised to include an annual fee for activities covered under a Special Order by Consent. Duke Energy will be subject to a fee of \$500.00 on a yearly basis while under the Order. The initial fee payment will be invoiced at a later date, with future fee invoicing done on an annual basis.

If you have any questions concerning this matter, please contact Bob Sledge at (919) 807-6398.

Sincerely,



for Linda Culpepper

Attachment

cc: Central Files
NPDES Unit – SOC File
ec: Asheville Regional Office – DWR/Water Quality
Mooreville Regional Office – DWR/Water Quality
Shannon Langley – Duke Energy
Laurie Jones – EPA Region 4
Jeff Poupart – DWR/WQPS

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTIES OF GASTON, CATAWBA,
AND RUTHERFORD

IN THE MATTER OF)	
NORTH CAROLINA)	SPECIAL ORDER BY CONSENT
NPDES PERMITS NC0004979, NC0004987)	EMC SOC WQ S17-009
& NC0005088)	
)	
HELD BY)	
DUKE ENERGY CAROLINAS, LLC)	

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent is entered into by Duke Energy Carolinas, LLC, hereinafter referred to as Duke Energy, and the North Carolina Environmental Management Commission, an agency of the State of North Carolina created by G.S. 143B-282, and hereinafter referred to as the Commission. Duke Energy and the Commission are referred to hereafter collectively as the "Parties."

1. **Stipulations:** Duke Energy and the Commission hereby stipulate the following:
 - a. This Special Order by Consent ("Special Order") addresses issues related to the elimination of seeps (as defined in subparagraphs e, f, and g below) from Duke Energy's coal ash basins during the separate and independent process of basin closure under the Coal Ash Management Act, G.S. 130A-309.200 through 130A-309.231 ("CAMA") and the Federal Coal Combustion Residuals Rule, 40 CFR Parts 257 and 261. The Environmental Protection Agency first directed permitting authorities to consider potential impacts on surface water of seeps from earthen impoundments in 2010. At that time, Duke Energy began discussions with the North Carolina Department of Environmental Quality ("the Department") regarding seeps at multiple Duke Energy facilities, including identifying certain seeps in permit applications and providing data to the Department regarding seeps. In 2014, Duke Energy provided a comprehensive evaluation of all areas of wetness and formally applied for NPDES permit coverage of all seeps. Since 2014, Duke Energy has performed periodic inspections and promptly notified the Department of new seeps and sought NPDES permit coverage where appropriate. On March 4, 2016, the Department issued Notices of Violation ("NOVs") to Duke Energy related to seeps.

Decanting (i.e., removal of the free water on the surface of the coal ash basins), which is required before ash basins can be closed, is expected to substantially reduce or eliminate the seeps. In order to accomplish this goal of substantially reducing or eliminating seeps, this Special Order affords certain relief to Duke Energy related to the non-constructed seeps (as defined in subparagraphs f and g below), while requiring Duke Energy to accelerate the schedule for decanting as specified more fully below. Constructed seeps (as defined in subparagraphs e and f below) will be addressed in the NPDES permits. After completion of decanting, for any remaining seeps, whether constructed or non-constructed, Duke Energy must take appropriate corrective action as specified more fully below.

- b. Duke Energy has been issued North Carolina NPDES permits for operation of an existing wastewater treatment works at each of the following coal fired, electric generation facilities ("Duke Energy Facilities," or in the singular, "Facility"):

Facility	Permit Number	County	Issuance Date	Receiving Water for Primary Outfall
Allen	NC0004979	Gaston	1/18/2011	Catawba River
Marshall	NC0004987	Catawba	9/9/2016	Catawba River
Rogers	NC0005088	Rutherford	2/20/2012	Broad River

- c. The Duke Energy Facilities listed above will continue to operate and generate coal ash, and each is subject to the provisions of this Special Order.
- d. Wastewater treated at coal-fired electric stations includes water mixed with ash produced through the combustion of coal for the steam generation process. Ash is controlled and collected through the use of water, creating a slurry that is conveyed to impoundments or basins with earthen dike walls. In the ash basin, the solids separate from the liquid portion, with the resulting supernatant discharged under the terms of the NPDES permit.

- e. The coal ash basins at the Duke Energy Facilities are unlined, having no impermeable barrier installed along their floors or sides. Earthen basins and dike walls are prone to the movement of liquid through porous features within those structures through a process known as seepage. Each of the Duke Energy Facilities covered by this Special Order exhibits locations adjacent to, but beyond the confines of, the coal ash basins where seepage of coal ash wastewater from the coal ash basins may intermix with groundwater, reach the land surface (or “daylight”), and may flow from that area. Once such seepage reaches the land surface, it is referred to as a “seep.” Each of the seeps identified at the Duke Energy Facilities and addressed in this Special Order exhibit some indication of the presence of coal ash wastewater. Both (a) confirmed seeps and (b) areas identified as potential seeps that were later dispositioned, are identified in Attachment A.
- f. Some of Duke Energy’s coal ash impoundments contain constructed features on or within the dam structures (such as toe drains or filter blankets) to collect seepage. This wastewater is conveyed via a pipe or a constructed channel directly to a receiving water. These discrete, identifiable, point source discharges are or will be covered and regulated by the respective NPDES permits and designated as outfalls therein. The characteristics of these wastewater flows are similar to those discharging from other permitted outfalls for ash basin effluent. In this Special Order, seeps that are (1) on or within the dam structures and (2) convey wastewater via a pipe or constructed channel directly to a receiving water are referred to as “constructed seeps.” Seeps that are not on or within the dam structures or that do not convey wastewater via a pipe or constructed channel directly to a receiving stream are referred to as “non-constructed seeps.”
- g. Non-constructed seeps at the Duke Energy Facilities often exhibit low flow volume and may be both transient and seasonal in nature, and may, for example, manifest as an area of wetness that does not flow to surface waters, a point of origin of a stream feature, or flow to an existing stream feature. These circumstances of the non-constructed seeps make them difficult to discern, characterize, quantify and/or monitor as discrete point source discharges. This creates challenges in permit development and compliance monitoring because it is difficult to accurately monitor for flow and discharge characterization. Non-constructed seeps at the Duke Energy Facilities present significant challenges to their inclusion in NPDES permits as point source discharges, but they do cause or contribute to pollution of classified waters of the State. Therefore, these non-constructed seeps are addressed in this Special Order rather than in an NPDES permit.

- h. Investigations and observations conducted by the Department and U. S. Army Corps of Engineers staff have concluded that some seeps emanating from Duke Energy's coal ash ponds create and/or flow into features delineated as classified waters of the State or Waters of the United States.
- i. Collectively, the volume of non-constructed seeps is generally low compared to the volume of permitted wastewater discharges at the Duke Energy Facilities.
- j. In 2014, Duke Energy conducted a survey of each coal-fired electric generation station to identify potential seeps from the coal ash surface impoundments. Duke Energy included all areas of wetness identified around the impoundments as seeps, and submitted applications to include those seeps in NPDES permits. Beginning in 2015, Duke Energy has implemented semi-annual surveys to identify new seeps in the vicinities of the coal ash basins. Additional seeps have been observed and documented during these surveys and reported to the Department pursuant to a Discharge Identification Plan mandated by CAMA. Additional investigation has determined that not all of areas identified in 2014 are seeps, but each Duke Energy facility does have multiple seeps.
- k. The Department issued NOVs to Duke Energy on March 4, 2016 for the seeps that emanate from the unlined coal ash surface impoundments at the Duke Energy Facilities.
- l. Non-constructed seeps create conditions such that certain surface water quality standards may not consistently be met at all Duke Energy monitoring sites.
- m. The presence of coal ash influenced water in the non-constructed seeps causes or contributes to pollution of the waters of this State, and Duke Energy is within the jurisdiction of the Commission as set forth in G.S. Chapter 143, Article 21.
- n. A list of seeps identified in the vicinities of the coal ash surface impoundments at the Allen, Marshall and Rogers plants, as well as their locations, and the bodies of water those seeps may flow into (if applicable), can be found in Attachment A to this Special Order.
- o. Duke Energy must close the coal ash surface impoundments at all North Carolina coal-fired electric generating stations in accordance with applicable requirements set out in CAMA and the Federal Coal Combustion Residuals Rule, requirements of which are independent of the resolution of seeps addressed in this Special Order.
- p. Decanting of wastewater performed at Duke Energy's coal ash basins is expected to eliminate or substantially reduce the seeps from the ash basins at the Duke Energy Facilities.

- q. Since this Special Order is by consent, the Parties acknowledge that review of the same is not available to the Parties in the N.C. Office of Administrative Hearings. Furthermore, neither party shall file a petition for judicial review concerning the terms of this Special Order.
2. Duke Energy, desiring to resolve the matters causing or contributing to pollution of the waters of the State described above, hereby agrees to do the following:
- a. **Penalties**
- 1) **Upfront Penalty.** As settlement of all alleged violations due to seepage at these Duke Energy Facilities, pay the Department, by check payable to the North Carolina Department of Environmental Quality, a penalty in the amount of \$156,000, calculated based upon \$12,000 each for five constructed seeps identified prior to January 1, 2015 and \$6,000 each for sixteen non-constructed seeps identified prior to January 1, 2015.
- A certified check in the amount of \$156,000.00 must be made payable to the Department of Environmental Quality and sent to the Director of the Division of Water Resources (DWR) at 1617 Mail Service Center, Raleigh, North Carolina 27699-1617 by no later than thirty (30) days following the date on which this Special Order is approved and executed by the Commission, and received by Duke Energy.
- No penalty shall be assessed for seeps identified after December 31, 2014, given Duke Energy's inclusion of seeps in permit applications and compliance with the Discharge Identification Plan required under CAMA. By entering into this Special Order, Duke Energy makes no admission of liability, violation or wrongdoing. Except as otherwise provided herein,¹ payment of the upfront penalty does not absolve Duke Energy of its responsibility for the occurrence or impacts of any unauthorized discharges in the area of the Duke Energy Facilities that may be discovered in the future, nor does the payment preclude DWR from taking enforcement action for additional violations of the State's environmental laws.
- 2) **Stipulated Penalties.** Duke Energy agrees that unless excused under paragraph 5, Duke Energy will pay the Department, by check payable to the North Carolina Department of Environmental Quality, stipulated penalties according to the following schedule for failure to perform activities described in paragraphs 2(b, c, and d), or for failure to comply with interim action levels listed in Attachment A.

¹ See especially paragraph 2(a)(2) excepting newly identified seeps from future penalties under certain conditions.

Failure to meet a deadline in the Compliance Schedule in 2(b) of this Special Order	\$1,000.00/day for the first seven days; \$2,000.00/day thereafter
Failure to meet any other deadline in this Special Order	\$1,000.00/day for the first seven days; \$2,000.00/day thereafter
Exceedance of an interim action level listed in Attachment A	\$4,500.00 per monitored exceedance
Monitoring frequency violations	\$1,000.00 per violation
Failure to submit, within 210 days of the completion of decanting at each Facility, adequate amendments to groundwater Corrective Action Plans or Closure Plans to address all remaining seeps, whether constructed or non-constructed, through corrective action as applicable under paragraph 2(d) of this Special Order. ²	\$5,000.00 per day, to a maximum of \$1,000,000.00 per electric generating facility.

As long as Duke Energy remains in compliance with the terms of this Special Order, as well as CAMA and conditions of any approvals issued thereunder, the Department shall not assess civil penalties for newly identified seeps.

- b. **Compliance Schedule.** Duke Energy shall undertake the following activities in accordance with the indicated time schedule. No later than fourteen (14) calendar days after any date identified for accomplishment of any activity, Duke Energy shall submit to the Director of DWR written notice of compliance or noncompliance therewith. In the case of compliance, the notice shall include the date compliance was achieved along with supporting documentation if applicable. In the case of noncompliance, the notice shall include a statement of the reason(s) for noncompliance, remedial action(s) taken, and a statement identifying the extent to which subsequent dates or times for accomplishment of listed activities may be affected.

Duke Energy shall accelerate compliance with the requirements of G.S. 130A-309.210(d) and (f) such that all projects necessary to eliminate discharges of stormwater into the surface impoundments at the Duke Energy Facilities and to convert to dry bottom ash handling shall be complete prior to the deadline for initiating decanting set out below.

² Failure to adequately implement any amended Corrective Action Plan or Closure Plan will be handled in the normal course.

1) **Complete dry ash handling projects in accordance with the following schedule**

<u>Facility</u>	<u>Fly Ash</u>	<u>Bottom Ash</u>
Allen	Complete	3/31/2019
Marshall	Complete	1/31/2019
Rogers	3/31/2018	8/31/2018

2) **Initiation of Decanting**

Allen	6/30/2019
Marshall	9/30/2019
Rogers	3/31/2019

3) **Completion of Decanting**

Allen	6/30/2020
Marshall	3/31/2021
Rogers	3/31/2020

This schedule is premised upon timely issuance of necessary permits or approvals, and no requirement imposed by DWR to implement physical/chemical treatment during decanting except as required by an NPDES permit. Should any of these assumptions prove to be incorrect, the Parties shall renegotiate these deadlines, provided that the final expiration date of this Special Order will not be affected by such renegotiation.

4) **Termination of Special Order**

This Special Order shall terminate on a facility-by-facility basis on the later of the following dates:

- 180 days following completion of decanting; or
- 30 days following the approval of an amended groundwater Corrective Action Plan and/or Closure Plan as appropriate (if an amendment is submitted in compliance with subparagraph d. below).

- c. **Additional Compliance Measures.** Duke Energy shall undertake the following additional compliance measures:
- 1) If the monitoring of any classified water of the State receiving flow from seeps regulated by this Special Order indicates exceedance of any interim action level established by the Special Order, Duke Energy shall increase monitoring at that location from quarterly to monthly until concentrations of monitored characteristics return to those observed at the initiation of the Special Order. If any interim action level established by the Special Order is exceeded by more than 20% in a single sampling event, or exceeded for two (2) consecutive monitoring events, in addition to paying the associated stipulated penalty, Duke Energy shall conduct a re-assessment of the contributing seep(s), including, but not limited to, evaluation of proposed remedial actions for treatment and/or control of the seep such that impacts to the receiving waters are quickly mitigated. A report compiling the findings of the re-assessment, including proposed remedial actions, shall be provided to the Director of DWR within 60 days of any applicable exceedance. Following its review, DWR shall notify Duke Energy of its concurrence or disapproval of Duke Energy's proposed remedial actions.
 - 2) Once the decanting process is initiated, within thirty (30) days after the end of each quarter, Duke Energy shall provide reports on the status of decanting work and other activities undertaken with respect to closure of each coal ash surface impoundment to DWR. The quarterly reports are due by April 30, July 30, October 30 and January 30 while this Special Order is in effect. The reports are to be submitted as follows: one copy must be mailed to the appropriate Regional Office Supervisor for each facility and one copy must be mailed to the Water Quality Permitting Program, Division of Water Resources, 1617 Mail Service Center, Raleigh, NC 27699-1617.

- 3) Duke Energy shall conduct annual comprehensive surveys of areas down gradient of ash basins identifying new seeps, and documenting the physical characteristics of previously documented seeps. All examinations of seeps must include identification of seeps by approximate latitude and longitude and date-stamped digital photographs of their appearance. A report summarizing the findings of the surveys, including a section analyzing the effect decanting of the basin(s) has on seep flows, accompanied by copies of the photographs noted above ("Annual Seep Report"), shall be submitted to DWR in conjunction with submittal of the April 30 quarterly report noted in 2(c)(2) above. This Annual Seep Report must list any seep that has been dispositioned (as described below) during the previous year, including an analysis of the manner of disposition. For purposes of this Special Order, "dispositioned" includes the following: (1) the seep is dry for at least three consecutive quarters; (2) the seep does not constitute, and does not flow to, waters of the State or Waters of the United States for three consecutive quarters; (3) the seep is no longer impacted by flow from any coal ash basin such that concentrations of all pollutants listed in Attachment B meet State criteria for four consecutive sampling events with at least seven days separating each event; or (4) the seep has been otherwise eliminated (e.g., through an engineering solution). If a seep that has been dispositioned through drying up reappears in any subsequent survey, such a seep will no longer be deemed dispositioned and can be subsequently re-dispositioned as specified above.
- 4) No later than 90 days following the completion of decanting at each Facility, and in the same manner as in the annual surveys, Duke Energy shall conduct a comprehensive survey of areas down gradient of ash basins identifying new seeps, and documenting the physical characteristics of previously documented seeps. All examinations of seeps must include identification of seeps by approximate latitude and longitude and date-stamped digital photographs of their appearance. A report summarizing the findings of this survey, including a section analyzing the effect decanting of the basin(s) has had on seep flows, accompanied by copies of the photographs noted above, shall be submitted to the Director of DWR ("Final Seep Report"). This Final Seep Report must list any seep that has been dispositioned (as described in subparagraph (3) above) during decanting process, including an analysis of the manner of disposition. The determination of whether a seep is dispositioned rests with the Director of DWR. At, or at any time prior to, submission of the Final Seep Report, Duke Energy shall seek formal certification from the Director of DWR, certifying the disposition of any seep that Duke Energy has characterized as dispositioned. Any seeps not certified as dispositioned by the Director of DWR shall not be deemed as dispositioned.

- d. **Further Corrective Action.** Following completion of decanting, if any seeps (including both constructed and non-constructed seeps) have not been certified by the Director of DWR as dispositioned (as described in subparagraph c. above), Duke Energy shall conduct a characterization of those seeps.³ Duke Energy shall submit a report on the findings of these characterizations ("Seep Characterization Report") to the Director of DWR within 150 days of completion of decanting at each Facility (i.e., within 60 days of the submittal of the Final Seep Report). The Seep Characterization Report must include all sampling data for each remaining seep as well as Duke Energy's evaluation of the jurisdictional status of all seeps at the relevant Facility. The determination regarding whether a surface water feature is a classified water of the State rests with DWR.

Within 60 days of the submittal of the Seep Characterization Report, Duke Energy shall submit a complete and adequate proposed amendment to the groundwater Corrective Action Plan and/or Closure Plan as appropriate for the Facility describing how any seeps identified in the Seep Characterization Report will be managed in a manner that will be sufficient to protect public health, safety, and welfare, the environment, and natural resources. This proposed amendment will go to public comment. Duke Energy shall submit documentation that the proposed modification has been submitted to the appropriate division within the Department that has authority for approving modification of the groundwater Corrective Action Plan and/or Closure Plan. The content of, and DEQ's review of, an amendment to a groundwater Corrective Action Plan shall be consistent with Title 15A, Chapter 2L of the N.C. Administrative Code (specifically including 2L.0106(h)-(o)). The amendment to the Corrective Action Plan and/or Closure Plans shall be implemented by Duke Energy in accordance with the deadlines contained therein, as approved or conditioned by the Department. Failure by Duke Energy to implement the amendment will be handled in the normal course by the Department in accordance with its enforcement procedures (i.e., outside this Special Order).

³ If any seep is dispositioned between the time that the Final Seep Report is submitted and the time the Seep Characterization Report is submitted, an analysis of the manner of disposition must be included in the Seep Characterization Report, and Duke Energy must seek certification of such a disposition from the Director of DWR. Only if such certification is received prior to the due date of the proposed amendment described in paragraph 2(d) may such a seep, certified as dispositioned, be omitted from the proposed amendment.

For clarity, listed below is a summary of the timetable for the documents due after completion of decanting (as described in 2(c)(4) and 2(d) above):

<u>Document</u>	<u>Due Date</u>
Final Seep Report	90 days after completion of decanting
Seep Characterization Report	150 days after completion of decanting (i.e., 60 days after submission of Final Seep Report)
Proposed amendment to groundwater Corrective Action Plan and/or Closure Plan	210 days after completion of decanting (i.e., 60 days after submission of Seep Characterization Report)

e. **Interim Action Levels.**

- 1) Duke Energy shall perform monitoring of waters receiving flow from non-constructed seeps in accordance with the schedules listed in Attachments A and B, except as noted in paragraph 2(c)(1) above.
 - 2) Upon the complete execution of this Special Order, with regard to non-constructed seeps, interim action levels for the receiving waters (which are minor tributaries) are hereby established as noted in Attachment A. The interim action levels are site-specific. Duke Energy shall monitor at approved sampling sites to ensure interim action levels are met. Interim action levels shall remain effective in the designated surface waters until the applicable termination date in paragraph 2(b)(4) is reached.
 - 3) Monitoring associated with seeps covered by this Special Order is exempt from the electronic reporting requirements associated with NPDES permits. Results of monitoring required exclusively per the terms of this Special Order shall be reported to the Director of DWR in a spreadsheet/worksheet format agreed to by Duke Energy and DWR. Monitoring data shall be submitted to the Director of DWR in a digital format no later than 30 days following the end of each calendar quarter for as long as the Special Order is in effect. Monitoring data shall be sent to the following email address: desocdata@ncdenr.gov. Data from those sites with monitoring required exclusively per the terms of the Special Order will be posted on DWR's website to provide the public with the opportunity for viewing.
3. Duke Energy will continue to operate its coal ash surface impoundments in such a manner that their performance is optimized, and potential for surface waters to be affected by seeps is minimized.

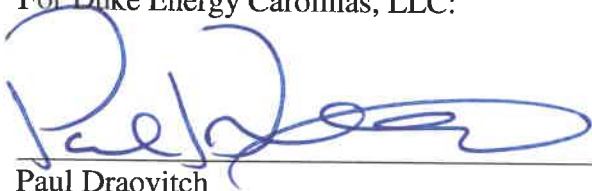
4. Duke Energy shall make available on its external website the NPDES permits, this Special Order and all reports required under this Special Order for each of the Duke Energy Facilities no later than thirty (30) days following their effective or submittal dates.
5. Duke Energy and the Commission agree that the stipulated penalties specified in paragraph 2(a)(2) are not due if Duke Energy satisfies DWR that noncompliance was caused solely by:
 - a. An act of God;
 - b. An act of war;
 - c. An intentional act or omission of a third party, but this defense shall not be available if the act or omission is that of an employee or agent of Duke Energy or if the act or omission occurs in connection with a contractual relationship with Duke Energy;
 - d. An extraordinary event beyond the Duke Energy's control, specifically including any court order staying the effectiveness of any necessary permit or approval. Contractor delays or failure to obtain funding will not be considered as events beyond Duke Energy's control; or
 - e. Any combination of the above causes.
6. Failure within thirty (30) days of receipt of written demand by DWR to pay the stipulated penalties, or challenge them by a contested case petition pursuant to G.S. 150B-23, will be grounds for a collection action, which the Attorney General is hereby authorized to initiate. The only issue in such an action will be whether the thirty (30) days has elapsed.
7. Any non-constructed seeps causing or contributing to pollution of waters of the State associated with the coal ash impoundments at Duke Energy's Allen, Marshall and Rogers electric generation stations, and listed in Attachment A to this Special Order, are hereby deemed covered by this Special Order. Any newly-identified non-constructed seeps discovered during the annual investigations for seeps referenced in paragraph 2(c)(3) above, or at any other time while this Special Order is in effect, and timely reported to the Department per the terms of CAMA and this Special Order, shall be deemed covered by the terms of the Special Order, retroactive to the time of their discovery. Newly-identified non-constructed seeps must be sampled for the presence of those characteristics listed in Attachment B to this Order. Newly-identified non-constructed seeps found to be causing or contributing to pollution of the waters of the State, with the effect of causing a violation of water quality standards in surface waters not already referenced in the Special Order, may require modification of the Special Order to address those circumstances.

8. Noncompliance with the terms of this Special Order is subject to enforcement action in addition to the above stipulated penalties, including, but not limited to injunctive relief pursuant to G.S. 143-215.6C or termination of this Special Order by the Director of DWR upon ten (10) days' notice to Duke Energy. Noncompliance with the terms of this Special Order will not be subject to civil penalties in addition to the above stipulated penalties.
9. This Special Order and any terms or conditions contained herein, hereby supersede any and all previous Special Orders, Enforcement Compliance Schedule Letters, terms, conditions, and limits contained therein issued in connection with NPDES permits NC0004979, NC0004987 and NC0005088.
10. This Special Order may be modified at the Commission's discretion, provided the Commission is satisfied that Duke Energy has made good faith efforts to secure funding, complete all construction, and achieve compliance within the dates specified. In accordance with applicable law, modification of this Special Order will go to public notice prior to becoming effective.
11. Failure to pay the up-front penalty within thirty (30) days of execution of this Special Order will terminate this Special Order.
12. In addition to any other applicable requirement, each report required to be submitted by Duke Energy under this Special Order shall be signed by a plant manager or a corporate official responsible for environmental management and compliance, and shall include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
13. This Special Order shall become effective in accordance with state law, and once effective, Duke Energy shall comply with all schedule dates, terms, and conditions herein.

This Special Order by Consent shall expire no later than June 30, 2022.

For Duke Energy Carolinas, LLC:



Paul Draovitch
Senior Vice President, Environmental, Health & Safety

3/29/18
Date

For the North Carolina Environmental Management Commission:



J. D. Solomon, P.E.
Chair of the Commission

4/18/18
Date

Attachment A
S17-009
Duke Energy Carolinas, LLC – Allen Steam Station

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-1*	35.170632	-81.010093	Located south of active ash basin. Flow is in approximately 3 foot wide channel flowing southeast to Lake Wylie. Via sampling - No CCR impacts	Catawba River (Lake Wylie)	WS-V; B	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-2	35.173761	-81.00578	Located south of the active ash basin at toe of dike. Flows to approximately 3 foot wide channel that flows to Lake Wylie.	Catawba River (Lake Wylie)	WS-V; B	Monitoring at point prior to entering Lake Wylie	pH 5-10 s. u. Hardness 400 mg/L
S-5	35.17698	-81.006087	Located east of active ash basin, between dike and river bank. Intermittent, unconfined diffuse flow towards Lake Wylie.	Catawba River (Lake Wylie)	WS-V; B	Instream Monitoring of Lake Wylie	N/A - 2B Standards Apply
S-6	35.177049	-81.006128	Located east of active ash basin, between dike and river bank. Intermittent, unconfined diffuse flow towards Lake Wylie.	Catawba River (Lake Wylie)	WS-V; B	Instream Monitoring of Lake Wylie	N/A – 2B Standards Apply
S-7	35.177736	-81.006334	Located east of active ash basin, between dike and river bank. Intermittent, unconfined diffuse flow towards Lake Wylie.	Catawba River (Lake Wylie)	WS-V; B	Instream Monitoring of Lake Wylie	N/A – 2B Standards Apply
S-9**	35.185838	-81.00585	Former seep with flow through 24" corrugated metal pipe. Pipe has been grouted; discharge eliminated.	Catawba River (Lake Wylie)	WS-V; B	N/A – Seep Dispositioned	N/A – Seep Dispositioned

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Allen Steam Station – Water Quality Monitoring Locations



I/A

- ★ Upstream in Lake Wylie
- ★ Downstream in Lake Wylie

- ★ Stream Monitoring

Feb 18 2020

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Attachment A
S17-009
Duke Energy Carolinas, LLC - Marshall Steam Station

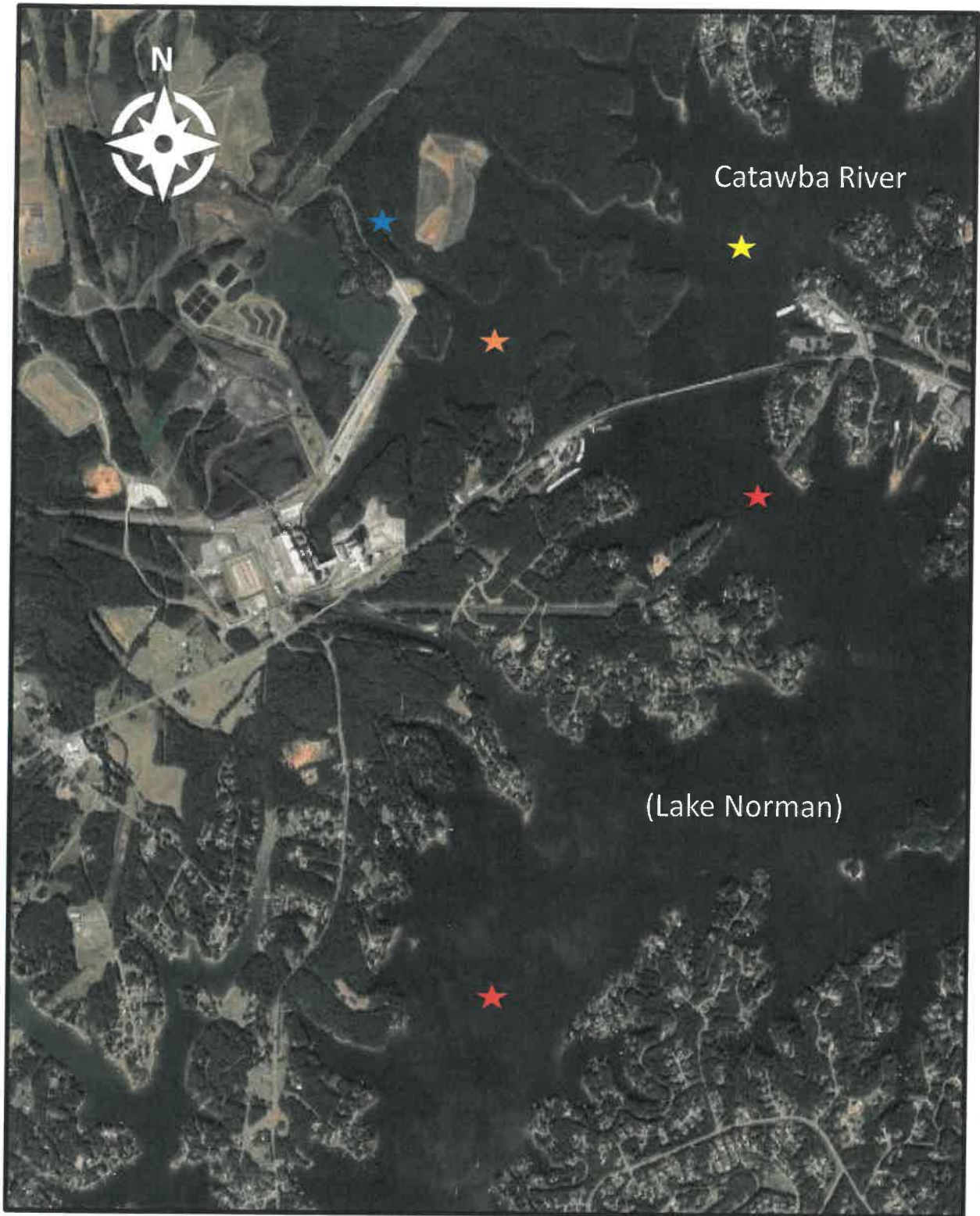
I/A

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-01	35.611722	-80.960389	General groundwater seepage forming a wet area that flows to an approximately 2 foot wide natural channel, located northeast of the active ash basin, then flows to Lake Norman.	Unnamed Tributary to Catawba River (Lake Norman)	WS-IV; B; CA	Monitoring at point prior to entering Lake Norman	pH 5-10 s. u. Hardness 200 mg/L
S-02	35.606642	-80.958931	Located east of active ash basin, minor area of wetness (AOW) between basin dike and river bank. Intermittent flow from culvert directs seasonal flow to Lake Norman.	Catawba River (Lake Norman)	WS-IV; B; CA	Instream Monitoring of Lake Norman	N/A - 2B Standards Apply
S-03**	35.606714	-80.959059	Located east of active ash basin, minor area of wetness between basin dike and river bank. AOW was determined to be same area of wetness as AOW S-02 above.	Catawba River (Lake Norman)	WS-IV; B; CA	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-04	35.6064	-80.959	Located east of active ash basin, non-flowing AOW in wetland area between basin dike and river bank. Potential sheet flow towards Lake Norman primarily during wet season.	Catawba River (Lake Norman)	WS-IV; B; CA	Instream Monitoring of Lake Norman	N/A - 2B Standards Apply

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Marshall Steam Station – Water Quality Monitoring Locations



- ★ Upstream: Catawba River (Lake Norman)
- ★ Instream: Lake Norman – Holdsclaw Creek Arm
- ★ Downstream: Catawba River (Lake Norman)
- ★ Stream Monitoring

Attachment A
S17-009

Duke Energy Carolinas, LLC – Rogers Energy Complex (Cliffside Steam Station), p.1

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-01*	35.215639	-81.775344	Steady flow within three foot wide stream located northwest of inactive Unit 5 Ash Basin	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-02	35.217217	-81.768678	Seep drainage in wetland area via 1-2 foot wide stream channel, located north of the inactive Unit 5 ash basin. Drainage collects seep flows from S-18, S-19 and S-19A. Flows north to the Broad River at a point approximately 50 feet downstream of the Inactive Unit 5 Ash Basin discharge outfall.	Unnamed Tributary (UT) to Broad River	WS-IV	Monitoring at established Duke Energy S-02 monitoring site	pH 5-10 s. u. Hardness 800 mg/L Mercury 0.1 µg/L Sulfates 500 mg/L TDS 1000 mg/L Thallium 0.5 µg/L
S-03	35.22001	-81.7577	Minor seepage and groundwater influence from closed Units 1-4 ash basin area to sample point within former condenser circulating water (CCW) discharge canal for retired units 1-4.	Broad River	WS-IV	Broad River Instream Monitoring	N/A - 2B Standards Apply
S-05*	35.218147	-81.749844	Diffuse flow emerging from a small area along the bank of the Broad River and base of the active ash basin.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-07	35.218642	-81.745975	Steady, clear and braided stream that flows in a relatively level area northeast of the active ash basin at edge of property line. Flow is north to Broad River.	UT to Broad River	WS-IV	Monitoring at established Duke Energy S-07 monitoring site	pH 5-10 s. u.
S-08*	35.208547	-81.755781	Natural conveyance tributary to Suck Creek	Suck Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-09*	35.217122	-81.754244	Minor, diffuse flow to Suck Creek near confluence with Broad River.	Suck Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A
S17-009

Duke Energy Carolinas, LLC – Rogers Energy Complex (Cliffside Steam Station), p.2

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-10**	35.219472	-81.756731	Seep was located near bank of Broad River, from past toe drains adjacent to Unit 1-4 Inactive Ash Basin. Following ash basin excavation and toe drain removals, seep has disappeared	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-11**	35.2194	-81.756617	Seep was located near bank of Broad River, from past toe drains adjacent to Unit 1-4 Inactive Ash Basin. Following ash basin excavation and toe drain removals, seep has disappeared	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-12*	35.217658	-81.751783	Diffuse seepage to area of wetness (AOW) with no defined channel on bank of Broad River below ash storage area. AOW does not reach surface waters.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-13**	35.218353	-81.754942	Minor flow was located at bank of Broad River, adjacent to Unit 1-4 Inactive Ash Basin. Following ash basin excavation, seep has disappeared.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-14	35.214511	-81.755844	Seepage located along toe of dike (west side) of the active ash basin. Area of wetness - no flowing water observed. Any flow would move toward Suck Creek.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-15	35.214297	-81.756117	Second seepage area located along toe of dike (west side) of the active ash basin. Area of wetness - no flowing water observed. Any flow could move via poorly incised channel toward Suck Creek.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-16	35.2141	-81.756208	Third seepage area located along toe of dike (west side) of the active ash basin. Any minor flow could move via channelized area toward Suck Creek.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted. Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A
S17-009

Duke Energy Carolinas, LLC – Rogers Energy Complex (Cliffside Steam Station), p.3

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-17**	35.217192	-81.769272	Minor seep at river edge and below the ordinary high water level of Broad River, west (upstream) of S-2.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-18	35.216439	-81.768564	Seepage from riprap at toe of inactive Unit 5 Ash Basin. Flows north into wetland area draining to sampling site S-2.	UT to Broad River	WS-IV	Monitoring at S-02 monitoring site.	See S-02
S-19	35.216361	-81.768681	Seepage from wooded area at toe of inactive Unit 5 Ash Basin. Flows north into wetland area draining to sampling site S-2.	UT to Broad River	WS-IV	Monitoring at S-02 monitoring site.	See S-02
S-19A	35.216581	-81.769217	Seepage from wooded area at toe of inactive Unit 5 Ash Basin. Flows north into wetland area draining to sampling site S-2.	Broad River	WS-IV	Monitoring at S-02 monitoring site.	See S-02
S-20**	35.215856	-81.765217	Stagnant AOW at toe of northeast side of Inactive Unit 5 Ash Basin. AOW dispositioned via repair.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-21	35.214625	-81.755953	Seep located along dike of the active ash basin (west side). Area of wetness - no flowing water observed. Any flow would move toward Suck Creek.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-22**	35.218278	-81.748258	Pipe has been plugged; discharge eliminated.		WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-23	35.217994	-81.750208	Seep to pooled area adjacent to the Broad River, located north of the active ash basin. Minor seepage from pool emerges with any flow draining north to the Broad River.	Broad River	WS-IV	Broad River Instream Monitoring	N/A - 2B Standards Apply
S-24*	35.218139	-81.749428	Minor seepage to AOW near bank of Broad River and north of active basin.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned

* Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A
S17-009

Duke Energy Carolinas, LLC – Rogers Energy Complex (Cliffside Steam Station), p.4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-25**	35.217689	-81.751894	Minor seepage to AOW below ash storage area. No measurable flow has been observed throughout site history.	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-26*	35.217425	-81.753931	Natural conveyance near bank of Suck Creek near confluence with the Broad River.	Suck Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-27	35.21383	-81.756478	Seep located along dike of the active ash basin (west side). Area of wetness - no flowing water observed. Any flow would move toward Suck Creek.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-28	35.211677	-81.753876	Minor diffuse groundwater seepage along steep bank of Suck Creek, west of the active ash basin dike.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-29	35.211542	-81.753993	Minor diffuse groundwater seepage along steep bank of Suck Creek, west of the active ash basin dike.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-30	35.211496	-81.75391	Minor diffuse groundwater seepage along steep bank of Suck Creek, west of the active ash basin dike.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-31	35.211482	-81.753887	Minor diffuse groundwater seepage along steep bank of Suck Creek, west of the active ash basin dike.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-32	35.211258	-81.753646	Minor diffuse groundwater seepage along steep bank of Suck Creek, west of the active ash basin dike.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply
S-33**	35.218272	-81.754754	Seep was located at bank of Broad River, adjacent to Unit 1-4 Inactive Ash Basin. Following ash basin excavation, seep has disappeared	Broad River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-34*	35.217556	-81.753725	Natural conveyance near bank of Suck Creek	Suck Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-35*	35.208203	-81.755703	Natural conveyance tributary to Suck Creek	Suck Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A

S17-009

Duke Energy Carolinas, LLC – Rogers Energy Complex (Cliffside Steam Station), p.5

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring Requirements	Interim Action Level
	Latitude	Longitude					
S-36	35.210258	-81.753983	Minor diffuse groundwater seepage along bank of Suck Creek, west of the active ash basin dike. New area identified with no current data. Area to be monitored to determine status.	Suck Creek	WS-IV	Suck Creek Instream Monitoring	N/A - 2B Standards Apply

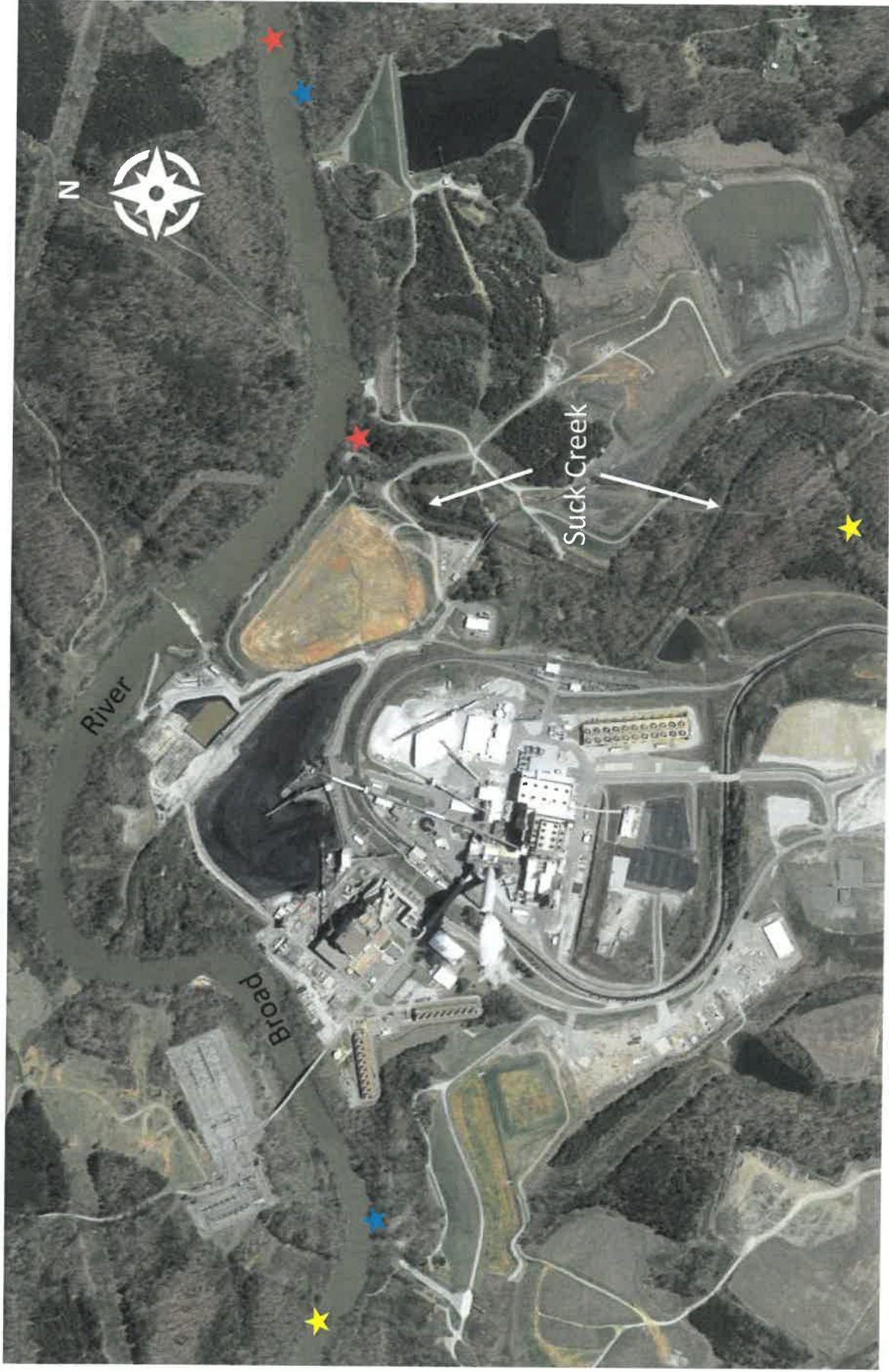
I/A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Feb 18 2020

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Rogers Energy Complex (Cliffside Steam Station) – Water Quality Monitoring Locations



I/A

- ★ Upstream in Broad River and Suck Creek
- ★ Downstream in Broad River and Suck Creek
- ★ Stream Monitoring

Feb 18 2020

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SOC S17-009
Duke Energy Carolinas, LLC
Attachment B
Monitoring Requirements

The following represents the parameters to be analyzed and reported at all monitoring locations designated within this Special Order.

Parameter	Reporting Units	Monitoring Frequency
TSS	mg/L	Annually
Oil and Grease	mg/L	Annually
pH	Standard Units (s. u.)	Quarterly
Fluoride	µg/L	Quarterly
Total Mercury	ng/L	Quarterly
Total Barium	µg/L	Quarterly
Total Zinc	µg/L	Quarterly
Total Arsenic	µg/L	Quarterly
Total Boron	µg/L	Quarterly
Total Cadmium	µg/L	Quarterly
Total Chromium	µg/L	Quarterly
Total Copper	µg/L	Quarterly
Total Thallium	µg/L	Quarterly
Total Lead	µg/L	Quarterly
Total Nickel	µg/L	Quarterly
Total Selenium	µg/L	Quarterly
Nitrate/Nitrite as N	mg/L	Quarterly
Bromides	mg/L	Quarterly
Sulfates	mg/L	Quarterly
Chlorides	mg/L	Quarterly
TDS	mg/L	Quarterly
Total Hardness	mg/L	Quarterly
Temperature	° C	Quarterly
Conductivity, µmho/cm	µmho/cm	Quarterly

**Public Staff
Junis Exhibit 8**

**NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION**

COUNTIES OF ROWAN AND STOKES

IN THE MATTER OF)	
NORTH CAROLINA)	SPECIAL ORDER BY CONSENT
NPDES PERMITS NC0004774 &)	
NC0024406)	EMC SOC WQ S18-004
)	
HELD BY)	
DUKE ENERGY CAROLINAS, LLC)	

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent is entered into by Duke Energy Carolinas, LLC, hereinafter referred to as Duke Energy, and the North Carolina Environmental Management Commission, an agency of the State of North Carolina created by G.S. 143B-282, and hereinafter referred to as the Commission. Duke Energy and the Commission are referred to hereafter collectively as the "Parties."

1. **Stipulations:** Duke Energy and the Commission hereby stipulate the following:
 - a. This Special Order by Consent ("Special Order") addresses issues related to the elimination of seeps (as defined in subparagraphs e, f, and g below) from Duke Energy's coal ash basins during the separate and independent process of basin closure under the Coal Ash Management Act, G.S. 130A-309.200 through 130A-309.231 ("CAMA") and the Federal Coal Combustion Residuals Rule, 40 CFR Parts 257 and 261. The Environmental Protection Agency first directed permitting authorities to consider potential impacts on surface water of seeps from earthen impoundments in 2010. At that time, Duke Energy began discussions with the North Carolina Department of Environmental Quality ("the Department") regarding seeps at multiple Duke Energy facilities, including identifying certain seeps in permit applications and providing data to the Department regarding seeps. In 2014, Duke Energy provided a comprehensive evaluation of all areas of wetness and formally applied for NPDES permit coverage of all seeps. Since 2014, Duke Energy has performed periodic inspections and promptly notified the Department of new seeps and sought NPDES permit coverage where appropriate. On March 4, 2016, the Department issued Notices of Violation ("NOVs") to Duke Energy related to seeps.

Decanting (i.e., removal of the free water on the surface of the coal ash basins), which is required before ash basins can be closed, is expected to substantially reduce or eliminate the seeps. In order to accomplish this goal of substantially reducing or eliminating seeps, this Special Order affords certain relief to Duke Energy related to the non-constructed seeps (as defined in subparagraphs f and g below), while requiring Duke Energy to accelerate the schedule for decanting as specified more fully below. Constructed seeps (as defined in subparagraphs e and f below) will be addressed in the NPDES permits. After completion of decanting, for any remaining seeps, whether constructed or non-constructed, Duke Energy must take appropriate corrective action as specified more fully below.

- b. Duke Energy has been issued North Carolina NPDES permits for operation of an existing wastewater treatment works at each of the following coal fired, electric generation facilities ("Duke Energy Facilities," or in the singular, "Facility"):

Facility	Permit Number	County	Issuance Date	Receiving Water for Primary Outfall
Buck	NC0004774	Rowan	12/02/2011	Yadkin River
Belews Creek	NC0024406	Stokes	10/12/2012	Belews Lake and Dan River

- c. The Duke Energy Facilities listed above will continue to operate. The coal-fired generation units at Buck have been retired and replaced with a natural gas fired combined cycle. The Belews Creek facility will continue to operate coal fired generation units and generate coal ash. Each Facility is subject to the provisions of this Special Order.
- d. Wastewater treated at coal-fired electric stations includes water mixed with ash produced through the combustion of coal for the steam generation process. Ash is controlled and collected through the use of water, creating a slurry that is conveyed to impoundments or basins with earthen dike walls. In the ash basin, the solids separate from the liquid portion, with the resulting supernatant discharged under the terms of the NPDES permit.

- e. The coal ash basins at the Duke Energy Facilities are unlined, having no impermeable barrier installed along their floors or sides. Earthen basins and dike walls are prone to the movement of liquid through porous features within those structures through a process known as seepage. Each of the Duke Energy Facilities covered by this Special Order exhibits locations adjacent to, but beyond the confines of, the coal ash basins where seepage of coal ash wastewater from the coal ash basins may intermix with groundwater, reach the land surface (or “daylight”), and may flow from that area. Once such seepage reaches the land surface, it is referred to as a “seep.” Each of the seeps identified at the Duke Energy Facilities and addressed in this Special Order exhibit some indication of the presence of coal ash wastewater. Both (a) confirmed seeps and (b) areas identified as potential seeps that were later dispositioned, are identified in Attachment A.
- f. Some of Duke Energy’s coal ash impoundments contain constructed features on or within the dam structures (such as toe drains or filter blankets) to collect seepage. This wastewater is conveyed via a pipe or a constructed channel directly to a receiving water. These discrete, identifiable, point source discharges are or will be covered and regulated by the respective NPDES permits and designated as outfalls therein. The characteristics of these wastewater flows are similar to those discharging from other permitted outfalls for ash basin effluent. In this Special Order, seeps that are (1) on or within the dam structures and (2) convey wastewater via a pipe or constructed channel directly to a receiving water are referred to as “constructed seeps.” Seeps that are not on or within the dam structure or that do not convey wastewater via a pipe or constructed channel directly to a receiving stream are referred to as “non-constructed seeps.”
- g. Non-constructed seeps at the Duke Energy Facilities often exhibit low flow volume and may be both transient and seasonal in nature, and may, for example, manifest as an area of wetness that does not flow to surface waters, a point of origin of a stream feature, or flow to an existing stream feature. These circumstances of the non-constructed seeps make them difficult to discern, characterize, quantify and/or monitor as discrete point source discharges. This creates challenges in permit development and compliance monitoring because it is difficult to accurately monitor for flow and discharge characterization. Non-constructed seeps at the Duke Energy Facilities present significant challenges to their inclusion in NPDES permits as point source discharges, but they do cause or contribute to pollution of classified waters of the State. Therefore, these non-constructed seeps are addressed in this Special Order rather than in an NPDES permit.

- h. A subset of these non-constructed seeps at the Duke Energy Facilities do not flow directly to surface waters, but flow to some portion of an NPDES permitted wastewater treatment system. In such instances, the seeps may be referenced in NPDES permits as contributing flow to a permitted outfall. Any non-constructed seep that falls within this subset is identified in Attachment A by the following statement in its description: "This non-constructed seep flows to a portion of an NPDES wastewater treatment system."
- i. Investigations and observations conducted by the Department and U. S. Army Corps of Engineers staff have concluded that some seeps emanating from Duke Energy's coal ash ponds create and/or flow into features delineated as classified waters of the State or Waters of the United States.
- j. Collectively, the volume of non-constructed seeps is generally low compared to the volume of permitted wastewater discharges at the Duke Energy Facilities.
- k. In 2014, Duke Energy conducted a survey of each coal-fired electric generation station to identify potential seeps from the coal ash surface impoundments. Duke Energy included all areas of wetness identified around the impoundments as seeps, and submitted applications to include those seeps in NPDES permits. Beginning in 2015, Duke Energy has implemented semi-annual surveys to identify new seeps in the vicinities of the coal ash basins. Additional seeps have been observed and documented during these surveys and reported to the Department pursuant to a Discharge Identification Plan mandated by CAMA. Additional investigation has determined that not all of areas identified in 2014 are seeps, but each Duke Energy facility does have multiple seeps.
- l. The Department issued NOVs to Duke Energy on March 4, 2016 for the seeps that emanate from the unlined coal ash surface impoundments at the Duke Energy Facilities.
- m. Non-constructed seeps create conditions such that certain surface water quality standards may not consistently be met at all Duke Energy monitoring sites.
- n. The presence of coal ash influenced water in the non-constructed seeps causes or contributes to pollution of the waters of this State, and Duke Energy is within the jurisdiction of the Commission as set forth in G.S. Chapter 143, Article 21.

- o. A list of seeps identified in the vicinities of the coal ash surface impoundments at the Buck and Belews Creek plants, as well as their locations, and the bodies of water those seeps may flow into (if applicable), can be found in Attachment A to this Special Order.
 - p. Duke Energy must close the coal ash surface impoundments at all North Carolina coal-fired electric generating stations in accordance with applicable requirements set out in CAMA and the Federal Coal Combustion Residuals Rule, requirements of which are independent of the resolution of seeps addressed in this Special Order.
 - q. Decanting of wastewater performed at Duke Energy's coal ash basins is expected to eliminate or substantially reduce the seeps from the ash basins at the Duke Energy Facilities.
 - r. Since this Special Order is by consent, the Parties acknowledge that review of the same is not available to the Parties in the N.C. Office of Administrative Hearings. Furthermore, neither party shall file a petition for judicial review concerning the terms of this Special Order.
2. Duke Energy, desiring to resolve the matters causing or contributing to pollution of the waters of the State described above, hereby agrees to do the following:

a. **Penalties**

- 1) **Upfront Penalty.** As settlement of all alleged violations due to seepage at these Duke Energy Facilities, pay the Department, by check payable to the North Carolina Department of Environmental Quality, a penalty in the amount of \$84,000, calculated based upon \$12,000 each for two constructed seeps identified prior to January 1, 2015 and \$6,000 each for ten non-constructed seeps identified prior to January 1, 2015.

A certified check in the amount of \$84,000.00 must be made payable to the Department of Environmental Quality and sent to the Director of the Division of Water Resources (DWR) at 1617 Mail Service Center, Raleigh, North Carolina 27699-1617 by no later than thirty (30) days following the date on which this Special Order is approved and executed by the Commission, and received by Duke Energy.

No penalty shall be assessed for seeps identified after December 31, 2014, given Duke Energy's inclusion of seeps in permit applications and compliance with the Discharge Identification Plan required under CAMA. By entering into this Special Order, Duke Energy makes no admission of liability, violation or wrongdoing. Except as otherwise provided herein,¹ payment of the upfront penalty does not absolve Duke Energy of its responsibility for the occurrence or impacts of any unauthorized discharges in the area of the Duke Energy Facilities that may be discovered in the future, nor does the payment preclude DWR from taking enforcement action for additional violations of the State's environmental laws.

- 2) **Stipulated Penalties.** Duke Energy agrees that unless excused under paragraph 5, Duke Energy will pay the Department, by check payable to the North Carolina Department of Environmental Quality, stipulated penalties according to the following schedule for failure to perform activities described in paragraphs 2(b, c, and d), or for failure to comply with interim action levels listed in Attachment A.

Failure to meet a deadline in the Compliance Schedule in 2(b) of this Special Order	\$1,000.00/day for the first seven days; \$2,000.00/day thereafter
Failure to meet any other deadline in this Special Order	\$1,000.00/day for the first seven days; \$2,000.00/day thereafter
Exceedance of an interim action level listed in Attachment A	\$4,500.00 per monitored exceedance
Monitoring frequency violations	\$1,000.00 per violation
Failure to submit, within 210 days of the completion of decanting at each Facility, adequate amendments to groundwater Corrective Action Plans or Closure Plans to address all remaining seeps, whether constructed or non-constructed, through corrective action as applicable under paragraph 2(d) of this Special Order. ²	\$5,000.00 per day, to a maximum of \$1,000,000.00 per electric generating facility.

¹ See especially paragraph 2(a)(2) excepting newly identified seeps from future penalties under certain conditions.

² Failure to adequately implement any amended Corrective Action Plan or Closure Plan will be handled in the normal course.

As long as Duke Energy remains in compliance with the terms of this Special Order, as well as CAMA and conditions of any approvals issued thereunder, the Department shall not assess civil penalties for newly identified seeps.

- b. **Compliance Schedule.** Duke Energy shall undertake the following activities in accordance with the indicated time schedule. No later than fourteen (14) calendar days after any date identified for accomplishment of any activity, Duke Energy shall submit to the Director of DWR written notice of compliance or noncompliance therewith. In the case of compliance, the notice shall include the date compliance was achieved along with supporting documentation if applicable. In the case of noncompliance, the notice shall include a statement of the reason(s) for noncompliance, remedial action(s) taken, and a statement identifying the extent to which subsequent dates or times for accomplishment of listed activities may be affected.

Duke Energy shall accelerate compliance with the requirements of G.S. 130A-309.210(d) and (f) such that all projects necessary to eliminate discharges of stormwater into the surface impoundments at the Duke Energy Facilities and to convert to dry bottom ash handling shall be complete prior to the deadline for initiating decanting set out below.

1) **Complete dry ash handling projects in accordance with the following schedule**

<u>Facility</u>	<u>Fly Ash</u>	<u>Bottom Ash</u>
Belews Creek	Complete	9/30/2018

2) **Initiation of Decanting**

Buck	3/31/2019
Belews Creek	3/31/2019

3) **Completion of Decanting**

Buck	3/31/2020
Belews Creek	9/30/2020

This schedule is premised upon timely issuance of necessary permits or approvals, and no requirement imposed by DWR to implement physical/chemical treatment during decanting except as required by an NPDES permit. Should any of these assumptions prove to be incorrect, the Parties shall renegotiate these deadlines, provided that the final expiration date of this Special Order will not be affected by such renegotiation.

4) **Termination of Special Order**

This Special Order shall terminate on a facility-by-facility basis on the later of the following dates:

- 180 days following completion of decanting; or
- 30 days following the approval of an amended groundwater Corrective Action Plan and/or Closure Plan as appropriate (if an amendment is submitted in compliance with subparagraph d. below).

c. **Additional Compliance Measures.** Duke Energy shall undertake the following additional compliance measures:

- 1) If the monitoring of any classified water of the State receiving flow from seeps regulated by this Special Order indicates exceedance of any interim action level established by the Special Order, Duke Energy shall increase monitoring at that location from quarterly to monthly until concentrations of monitored characteristics return to those observed at the initiation of the Special Order. If any interim action level established by the Special Order is exceeded by more than 20% in a single sampling event, or exceeded for two (2) consecutive monitoring events, in addition to paying the associated stipulated penalty, Duke Energy shall conduct a re-assessment of the contributing seep(s), including, but not limited to, evaluation of proposed remedial actions for treatment and/or control of the seep such that impacts to the receiving waters are quickly mitigated. A report compiling the findings of the re-assessment, including proposed remedial actions, shall be provided to the Director of DWR within 60 days of any applicable exceedance. Following its review, DWR shall notify Duke Energy of its concurrence or disapproval of Duke Energy's proposed remedial actions.
- 2) Once the decanting process is initiated, within thirty (30) days after the end of each quarter, Duke Energy shall provide reports on the status of decanting work and other activities undertaken with respect to closure of each coal ash surface impoundment to DWR. The quarterly reports are due by April 30, July 30, October 30 and January 30 while this Special Order is in effect. The reports are to be submitted as follows: one copy must be mailed to the appropriate Regional Office Supervisor for each facility and one copy must be mailed to the Water Quality Permitting Program, Division of Water Resources, 1617 Mail Service Center, Raleigh, NC 27699-1617.

- 3) Duke Energy shall conduct annual comprehensive surveys of areas down gradient of ash basins identifying new seeps, and documenting the physical characteristics of previously documented seeps. All examinations of seeps must include identification of seeps by approximate latitude and longitude and date-stamped digital photographs of their appearance. A report summarizing the findings of the surveys, including a section analyzing the effect decanting of the basin(s) has on seep flows, accompanied by copies of the photographs noted above ("Annual Seep Report"), shall be submitted to DWR in conjunction with submittal of the April 30 quarterly report noted in 2(c)(2) above. This Annual Seep Report must list any seep that has been dispositioned (as described below) during the previous year, including an analysis of the manner of disposition. For purposes of this Special Order, "dispositioned" includes the following: (1) the seep is dry for at least three consecutive quarters; (2) the seep does not constitute, and does not flow to, waters of the State or Waters of the United States for three consecutive quarters; (3) the seep is no longer impacted by flow from any coal ash basin as determined by the Director of DWR in accord with applicable law and best professional judgment; or (4) the seep has been otherwise eliminated (e.g., through an engineering solution). If a seep that has been dispositioned through drying up reappears in any subsequent survey, such a seep will no longer be deemed dispositioned and can be subsequently re-dispositioned as specified above. Non-constructed seeps described in paragraph 1(h) of this SOC cannot be dispositioned through option (2) above.
- 4) No later than 90 days following the completion of decanting at each Facility, and in the same manner as in the annual surveys, Duke Energy shall conduct a comprehensive survey of areas down gradient of ash basins identifying new seeps, and documenting the physical characteristics of previously documented seeps. All examinations of seeps must include identification of seeps by approximate latitude and longitude and date-stamped digital photographs of their appearance. A report summarizing the findings of this survey, including a section analyzing the effect decanting of the basin(s) has had on seep flows, accompanied by copies of the photographs noted above, shall be submitted to the Director of DWR ("Final Seep Report"). This Final Seep Report must list any seep that has been dispositioned (as described in subparagraph (3) above) during decanting process, including an analysis of the manner of disposition. The determination of whether a seep is dispositioned rests with the Director of DWR. At, or at any time prior to, submission of the Final Seep Report, Duke Energy shall seek formal certification from the Director of DWR, certifying the disposition of any seep that Duke Energy has characterized as dispositioned. Any seeps not certified as dispositioned by the Director of DWR shall not be deemed as dispositioned.

- d. **Further Corrective Action.** Following completion of decanting, if any seeps (including both constructed and non-constructed seeps) have not been certified by the Director of DWR as dispositioned (as described in subparagraph c. above), Duke Energy shall conduct a characterization of those seeps.³ Duke Energy shall submit a report on the findings of these characterizations ("Seep Characterization Report") to the Director of DWR within 150 days of completion of decanting at each Facility (i.e., within 60 days of the submittal of the Final Seep Report). The Seep Characterization Report must include all sampling data for each remaining seep as well as Duke Energy's evaluation of the jurisdictional status of all seeps at the relevant Facility. The determination regarding whether a surface water feature is a classified water of the State rests with DWR.

Within 60 days of the submittal of the Seep Characterization Report, Duke Energy shall submit a complete and adequate proposed amendment to the groundwater Corrective Action Plan and/or Closure Plan as appropriate for the Facility describing how any seeps identified in the Seep Characterization Report will be managed in a manner that will be sufficient to protect public health, safety, and welfare, the environment, and natural resources. This proposed amendment will go to public comment. Duke Energy shall submit documentation that the proposed modification has been submitted to the appropriate division within the Department that has authority for approving modification of the groundwater Corrective Action Plan and/or Closure Plan. The content of, and DEQ's review of, an amendment to a groundwater Corrective Action Plan shall be consistent with Title 15A, Chapter 2L of the N.C. Administrative Code (specifically including 2L.0106(h)-(o)). The amendment to the Corrective Action Plan and/or Closure Plans shall be implemented by Duke Energy in accordance with the deadlines contained therein, as approved or conditioned by the Department. Failure by Duke Energy to implement the amendment will be handled in the normal course by the Department in accordance with its enforcement procedures (i.e., outside this Special Order).

³ If any seep is dispositioned between the time that the Final Seep Report is submitted and the time the Seep Characterization Report is submitted, an analysis of the manner of disposition must be included in the Seep Characterization Report, and Duke Energy must seek certification of such a disposition from the Director of DWR. Only if such certification is received prior to the due date of the proposed amendment described in paragraph 2(d) may such a seep, certified as dispositioned, be omitted from the proposed amendment.

For clarity, listed below is a summary of the timetable for the documents due after completion of decanting (as described in 2(c)(4) and 2(d) above):

<u>Document</u>	<u>Due Date</u>
Final Seep Report	90 days after completion of decanting
Seep Characterization Report	150 days after completion of decanting (i.e., 60 days after submission of Final Seep Report)
Proposed amendment to groundwater Corrective Action Plan and/or Closure Plan	210 days after completion of decanting (i.e., 60 days after submission of Seep Characterization Report)

e. **Interim Action Levels.**

- 1) Duke Energy shall perform monitoring of waters receiving flow from non-constructed seeps in accordance with the schedules listed in Attachments A and B, except as noted in paragraph 2(c)(1) above.
 - 2) Upon the complete execution of this Special Order, with regard to non-constructed seeps, interim action levels for the receiving waters (which are minor tributaries) are hereby established as noted in Attachment A. The interim action levels are site-specific. Duke Energy shall monitor at approved sampling sites to ensure interim action levels are met. Interim action levels shall remain effective in the designated surface waters until the applicable termination date in paragraph 2(b)(4) is reached.
 - 3) Monitoring associated with seeps covered by this Special Order is exempt from the electronic reporting requirements associated with NPDES permits. Results of monitoring required exclusively per the terms of this Special Order shall be reported to the Director of DWR in a spreadsheet/worksheet format agreed to by Duke Energy and DWR. Monitoring data shall be submitted to the Director of DWR in a digital format no later than 30 days following the end of each calendar quarter for as long as the Special Order is in effect. Monitoring data shall be sent to the following email address: desocdata@ncdenr.gov. Data from those sites with monitoring required exclusively per the terms of the Special Order will be posted on DWR's website to provide the public with the opportunity for viewing.
3. Duke Energy will continue to operate its coal ash surface impoundments in such a manner that their performance is optimized, and potential for surface waters to be affected by seeps is minimized.

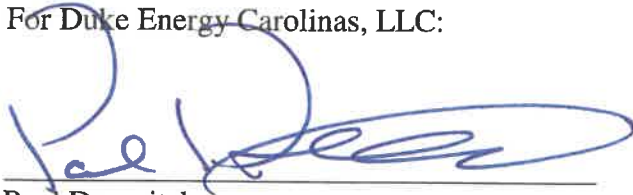
4. Duke Energy shall make available on its external website the NPDES permits, this Special Order and all reports required under this Special Order for each of the Duke Energy Facilities no later than thirty (30) days following their effective or submittal dates.
5. Duke Energy and the Commission agree that the stipulated penalties specified in paragraph 2(a)(2) are not due if Duke Energy satisfies DWR that noncompliance was caused solely by:
 - a. An act of God;
 - b. An act of war;
 - c. An intentional act or omission of a third party, but this defense shall not be available if the act or omission is that of an employee or agent of Duke Energy or if the act or omission occurs in connection with a contractual relationship with Duke Energy;
 - d. An extraordinary event beyond the Duke Energy's control, specifically including any court order staying the effectiveness of any necessary permit or approval. Contractor delays or failure to obtain funding will not be considered as events beyond Duke Energy's control; or
 - e. Any combination of the above causes.
6. Failure within thirty (30) days of receipt of written demand by DWR to pay the stipulated penalties, or challenge them by a contested case petition pursuant to G.S. 150B-23, will be grounds for a collection action, which the Attorney General is hereby authorized to initiate. The only issue in such an action will be whether the thirty (30) days has elapsed.
7. Any non-constructed seeps causing or contributing to pollution of waters of the State associated with the coal ash impoundments at Duke Energy's Buck and Belews Creek electric generation stations, and listed in Attachment A to this Special Order, are hereby deemed covered by this Special Order. Any newly-identified non-constructed seeps discovered during the annual investigations for seeps referenced in paragraph 2(c)(3) above, or at any other time while this Special Order is in effect, and timely reported to the Department per the terms of CAMA and this Special Order, shall be deemed covered by the terms of the Special Order, retroactive to the time of their discovery. Newly-identified non-constructed seeps must be sampled for the presence of those characteristics listed in Attachment B to this Order. Newly-identified non-constructed seeps found to be causing or contributing to pollution of the waters of the State, with the effect of causing a violation of water quality standards in surface waters not already referenced in the Special Order, may require modification of the Special Order to address those circumstances.

8. Noncompliance with the terms of this Special Order is subject to enforcement action in addition to the above stipulated penalties, including, but not limited to injunctive relief pursuant to G.S. 143-215.6C or termination of this Special Order by the Director of DWR upon ten (10) days' notice to Duke Energy. Noncompliance with the terms of this Special Order will not be subject to civil penalties in addition to the above stipulated penalties.
9. This Special Order and any terms or conditions contained herein, hereby supersede any and all previous Special Orders, Enforcement Compliance Schedule Letters, terms, conditions, and limits contained therein issued in connection with NPDES permits NC0004774 and NC0024406.
10. This Special Order may be modified at the Commission's discretion, provided the Commission is satisfied that Duke Energy has made good faith efforts to secure funding, complete all construction, and achieve compliance within the dates specified. In accordance with applicable law, modification of this Special Order will go to public notice prior to becoming effective.
11. Failure to pay the up-front penalty within thirty (30) days of execution of this Special Order will terminate this Special Order.
12. In addition to any other applicable requirement, each report required to be submitted by Duke Energy under this Special Order shall be signed by a plant manager or a corporate official responsible for environmental management and compliance, and shall include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
13. This Special Order shall become effective in accordance with state law, and once effective, Duke Energy shall comply with all schedule dates, terms, and conditions herein.

This Special Order by Consent shall expire no later than June 30, 2022.

For Duke Energy Carolinas, LLC:

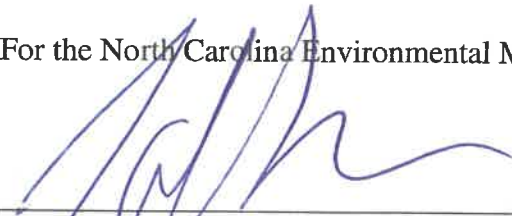


Paul Draovitch
Senior Vice President, Environmental, Health & Safety

7/3/18

Date

For the North Carolina Environmental Management Commission:



J. D. Solomon, P.E.
Chair of the Commission

7/12/18

Date

Attachment A
S18-004

Duke Energy Carolinas, LLC – Buck Steam Station, p.1

Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-11	35.70713	-80.37403	Seep discharge from terracotta pipe to riprapped channel on north dike wall of ash basin. Flow conveyed to unnamed tributary (UT) to the Yadkin River.	UT to Yadkin River	WS-V	N/A – Monitoring Established per Terms of NPDES Permit	See page 4 of this Attachment A
S-17	35.7058	-80.3753	Filter blanket discharge from west dike wall of ash basin. Flow conveyed to UT to the Yadkin River.	UT to Yadkin River	WS-V	N/A – Monitoring Established per Terms of NPDES Permit	See page 4 of this Attachment A

I/A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A
S18-004

Duke Energy Carolinas, LLC – Buck Steam Station, p.2

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Level
	Latitude	Longitude					
S-01	35.70914	-80.36044	Seep to UT that flows north to Yadkin River in approximately 2 foot wide channel. Located northeast of the active ash basin, north of Leonard Road.	Unnamed Tributary (UT) to Yadkin River	WS-V	Monitoring at point prior to any tributary flow to UT	N/A – 2B Standards Apply
S-02*	35.709414	-80.359441	Located northeast of the active ash basin, north of Leonard Road. Flows north to Yadkin River via approximately 4.5 foot wide stream. From sampling – No CCR impacts.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-03*	35.710382	-80.360097	Located northeast of the active ash basin, north of Leonard Road. Flows north to Yadkin River via approximately 8.5 foot wide stream. From sampling – No CCR impacts.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-04	35.711273	-80.360796	Seep to approximately 2 foot wide channel, located northeast of the active ash basin, north of Leonard Road. Stream flows east to Yadkin River	UT to Yadkin River	WS-V	Monitoring at point prior to entering Yadkin River	Hardness 200 mg/L Mercury 0.1 µg/L
S-05	35.71224	-80.3646	Seep to short UT below stormwater culvert near toe of ash basin dam. UT may receive flow from S-14 prior to reaching Yadkin River.	UT to Yadkin River	WS-V	Monitoring at established Duke Energy S-05 monitoring site	pH 6-10 s.u. Hardness 200 mg/L
S-06*	35.711971	-80.369032	Approximately 4 foot wide stream located north of active ash basin, east of decommissioned Buck Steam Station facility. Flows north toward Yadkin River. From sampling – No CCR impacts.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-07*	35.708704	-80.378637	Approximately 3.5 foot wide stream, located northwest of the active ash basin, west of Dukeville Road. Flows northwest to Yadkin River. From sampling – No CCR impacts.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A

S18-004

Duke Energy Carolinas, LLC – Buck Steam Station, p.3

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Level
	Latitude	Longitude					
S-08	35.708212	-80.378345	Seep to approximately 1 foot wide channel, located northwest of the active ash basin, west of Dukeville Road. Flows northwest to Yadkin River.	UT to Yadkin River	WS-V	Monitoring at established Duke Energy S-08 monitoring site	Hardness 200 mg/L
S-09**	35.7055	-80.3757	Sampling Location; not a seep	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-10*	35.702188	-80.376455	Approximately 2 foot wide stream, located west of the active ash basin, west of Dukeville Road. Flow is to Yadkin River. From sampling – No CCR impacts.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-12**	35.707429	-80.373661	Channelled seep through a terracotta pipe. Pipe has been plugged; discharge eliminated.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-13**	35.711931	-80.364056	Minimal AOW with no flow. Identified as a damp area near pump house; no sufficient flow to perform sampling. Any flow would move to adjacent storm drain.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-14	35.712171	-80.364817	Low flow seep near stormwater culvert just above S-05 location. Any flow will move to UT to Yadkin River near S-05.	UT to Yadkin River	WS-V	Monitoring at established Duke Energy S-05 monitoring site	See S-05
S-15	35.7123	-80.3644	Low flow seep downgradient of S-05 location. Seep flows to braided, short reach UT prior to entering Yadkin River	UT to Yadkin River	WS-V	Monitoring at established Duke Energy S-05 monitoring site	See S-05
S-16**	35.7044	-80.3746	Static area of wetness along west dike wall of ash basin. Flow would drain toward S-09 sampling site. Location has been repaired based on no area of wetness.	UT to Yadkin River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

I/A

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Attachment A
S18-004
Duke Energy Carolinas, LLC – Buck Steam Station, p.4

Instream Monitoring

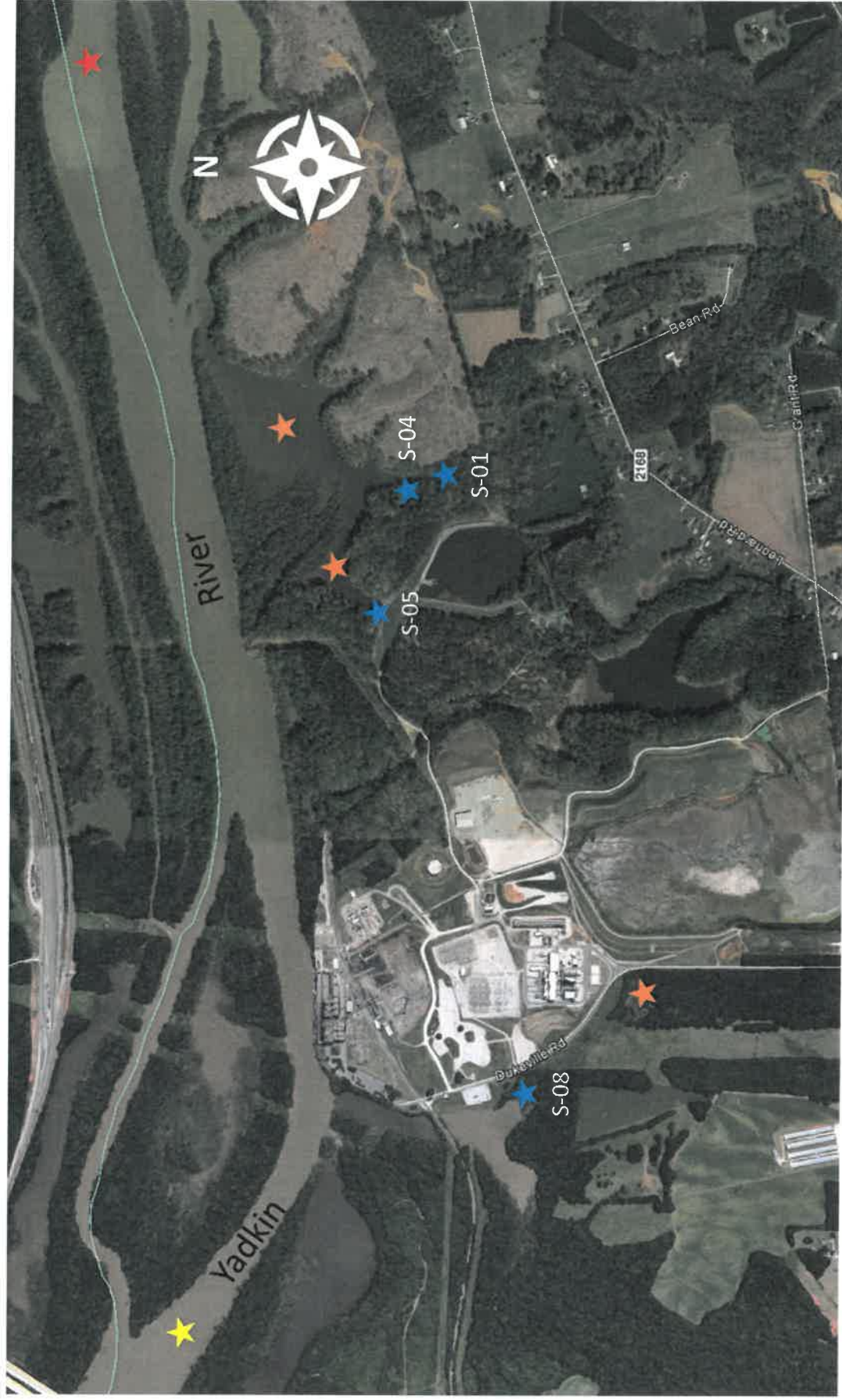
Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
Instream Monitoring to evaluate potential impacts from S-01 and S-04	Yadkin River	WS-V	Instream Monitoring of arm/cove of Yadkin River ¹	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from S-05, S-14 and S-15	Yadkin River	WS-V	Instream Monitoring of arm/cove of Yadkin River ¹	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from all non-constructed seeps	Yadkin River	WS-V	Monitoring of the Yadkin River Upstream and Downstream of Buck Steam Station site	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from S-11 and S-17	Unnamed Tributary (UT) to Yadkin River	WS-V	Monitoring of UT to Yadkin River at established Duke Energy S-09 monitoring location	Hardness 200 mg/L

I/A

1. Instream monitoring requirement will become effective 30 days following the elimination of NPDES permit NC0004774 outfall 002.

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Buck Steam Station – Water Quality Monitoring Locations



Upstream in Yadkin River



Downstream in Yadkin River



Stream Monitoring



Stream Monitoring

Attachment A
S18-004
Duke Energy Carolinas, LLC - Belews Creek Steam Station, p.1

Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-11	36.29859	-80.07571	Constructed seep conveying toe drain discharge from dam via rip-rapped effluent channel to unnamed tributary to the Dan River.	UT to the Dan River	WS-IV	N/A – Monitoring Established per Terms of NPDES Permit	See page 5 of this Attachment A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
Monitoring shall be conducted at the approximate locations indicated on the attached site map.
All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A
S18-004

Duke Energy Carolinas, LLC - Belews Creek Steam Station, p.2

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-01*	36.29323	-80.0852	Flow via approximately 3 foot wide unnamed tributary to the Dan River, located northwest of the active ash basin, west of Middleton Loop. From sampling – No CCR impacts.	Unnamed tributary (UT) to the Dan River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-02	36.29689	-80.0844	Seep to approximately 3.5 foot wide stream channel, located northwest of the active ash basin. Stream flows north to the Dan River	UT to the Dan River	WS-V	Monitoring at established Duke Energy S-02 monitoring site	pH 5-10 s.u. Hardness 200 mg/L
S-03*	36.29841	-80.0833	Flow via approximately 3 foot wide unnamed tributary to the Dan River, located northwest of the active ash basin, west of Middleton Loop. From sampling – No CCR impacts.	UT to the Dan River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-04*	36.29802	-80.0821	Flow via approximately 3 foot wide unnamed tributary to the Dan River, located northwest of the active ash basin, west of Middleton Loop. From sampling – No CCR impacts.	UT to the Dan River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-05*	36.30047	-80.0808	Flow via approximately 3.5 foot wide unnamed tributary to the Dan River, located northwest of the active ash basin, west of Middleton Loop. From sampling – No CCR impacts.	UT to the Dan River	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-06	36.29615	-80.061	Seep to UT to Belews Lake (former ash basin outfall channel).	UT to Belews Lake	WS-IV	Monitoring at established Duke Energy S-06 monitoring site	pH 5-10 s.u. Hardness 300 mg/L TDS 700 mg/L

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Attachment A

S18-004

Duke Energy Carolinas, LLC - Belews Creek Steam Station, p.3

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-07*	36.28717	-80.0642	Low diffuse flow to a wetland area with initial flow to Charlie's Pond and ultimate discharge to Belews Lake. From sampling – No CCR impacts.	Charlie's Pond	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-08	36.27986	-80.0776	Seep to approximately 4 foot wide stream channel, located south of the Pine Hall Road Ash Landfill. Stream flows south to Belews Lake	UT to Belews Lake	C	Monitoring at established Duke Energy S-08 monitoring site	pH 5-10 s.u. Selenium 10 µ/L
S-09	36.28022	-80.0722	Seep to approximately 2.5 foot wide stream channel, located south of Pine Hall Road, and west of Structural Fill site. Stream flows south to Belews Lake	UT to Belews Lake	C	Monitoring at point downstream of confluence of S-09 and S-16 flows, prior to entering Belews Lake	pH 5-10 s.u. Selenium 10 µ/L Sulfates 600 mg/L Hardness 500 mg/L TDS 800 mg/L
S-10	36.29923	-80.0758	Monitoring location about 500 feet below the toe of the dam for seep to approximately 6 foot wide stream channel, just before the stream joins a larger UT. Combined stream flow has confluence with ash basin discharge flow from concrete flume structure.	UT to the Dan River	WS-IV	Monitoring at established Duke Energy S-10 monitoring site	pH 5-10 s.u. Cadmium 2 µg/L Chlorides 600 mg/L Mercury 0.1 µg/L Hardness 600 mg/L TDS 1200 mg/L
S-12*	36.2968	-80.0605	Seep to natural stream in small valley east of active ash basin. Stream flows south into UT to Belews Lake (former ash basin outfall channel). From sampling – No CCR impacts.	UT to Belews Lake	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned

I/A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

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Attachment A

S18-004

Duke Energy Carolinas, LLC - Belews Creek Steam Station, p.4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-13*	36.2925	-80.0617	Minor seep to small stream channel east of active ash basin, located east of Pine Hall Road. Stream flows south to Belews Lake. From sampling – No CCR impacts.	UT to Belews Lake	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-14**	36.29221	-80.0624	Minor seep to small stream channel east of active ash basin, located east of Pine Hall Road. Stream flows south to Belews Lake. No flow observed during most recent sampling events.	UT to Belews Lake	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-15*	36.29927	-80.0754	Seep to small stream located east of S-10 and S-11 locations. Stream flow drains north, joining other stream flows. Combined flow has confluence with ash basin discharge flow from concrete flume structure. From sampling – No CCR impacts.	UT to the Dan River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-16*	36.27961	-80.0726	Seep to small stream channel, located south of Pine Hall Road, and west of Structural Fill site. Stream flows south to Belews Lake. From sampling – No CCR impacts.	UT to Belews Lake	C	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-18	36.29833	-80.07572	Small seep located downgradient from the toe of the dam, just west of the riprapped effluent channel. Flows from wetland area to effluent channel. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	N/A – Flows to effluent channel for NPDES outfall	N/A	N/A – Monitored per terms of the NPDES permit	N/A – Not a classified surface water

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.

** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.

Monitoring shall be conducted at the approximate locations indicated on the attached site map.

All monitoring shall be conducted per the requirements found in Attachment B of this Order.

I/A

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Attachment A
S18-004
Duke Energy Carolinas, LLC - Belews Creek Steam Station, p.5

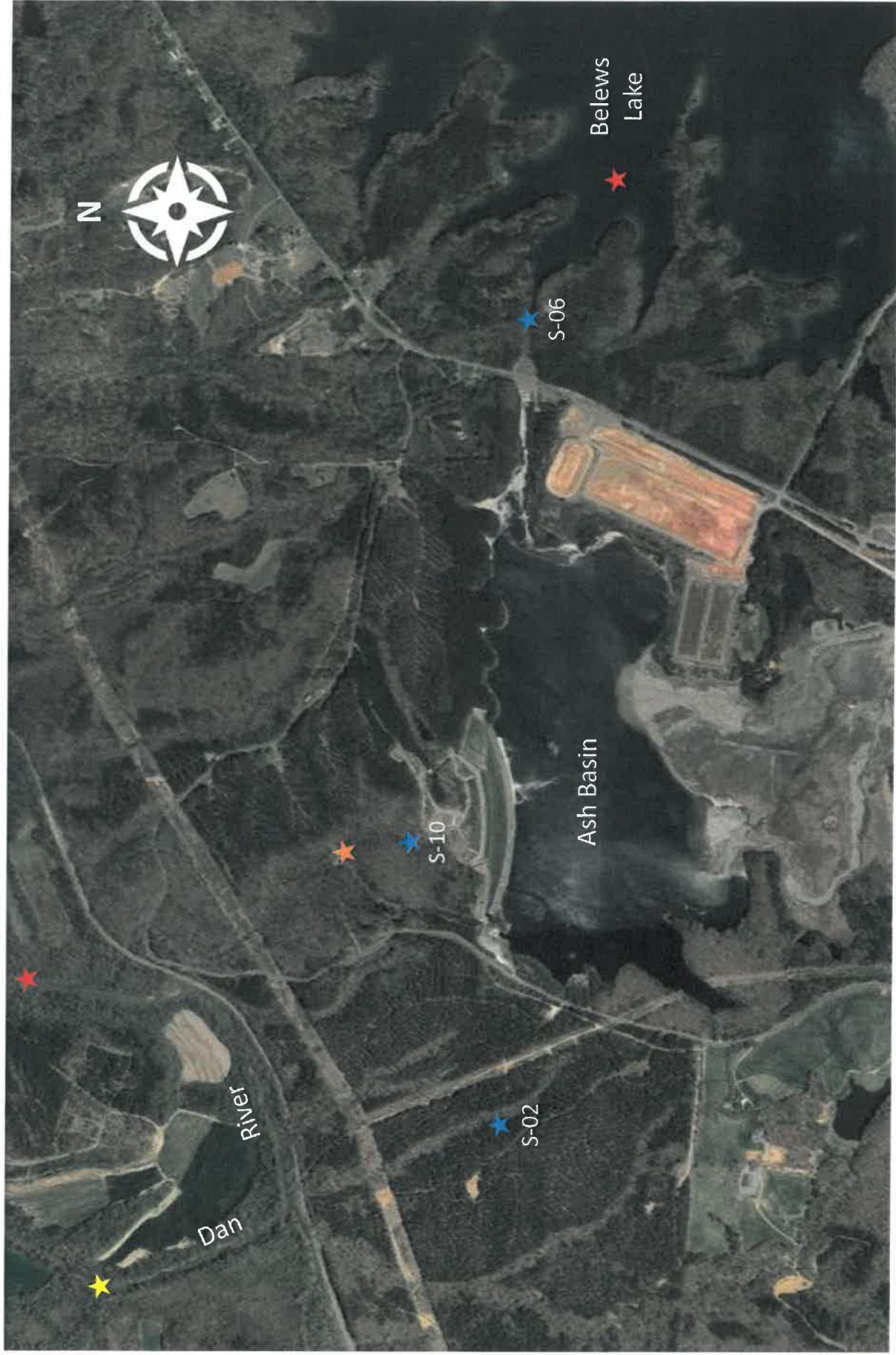
Instream Monitoring

Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
Instream Monitoring to evaluate potential impacts from S-02 and S-10	Dan River	WS-IV, WS-V	Upstream & Downstream Monitoring of the Dan River	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from S-10 and S-11	Unnamed Tributary (UT) to Dan River	WS-IV	Monitoring of UT to Dan River prior to its confluence with ash basin discharge flow from concrete flume structure	pH 5-10 s.u. Cadmium 2 µg/L Chlorides 700 mg/L Mercury 0.1 µg/L Hardness 800 mg/L TDS 1500 mg/L
Instream Monitoring to evaluate potential impacts from S-06	Belews Lake	WS-IV	Monitoring of Belews Lake downstream of steam station	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from S-08 and S-09	Belews Lake	C	Monitoring of Belews Lake upstream of steam station	N/A – 2B Standards Apply

I/A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
 ** Seep dispositioned via repair and/or non-flowing condition to potentially reach WOTUS, or other, as noted.
 Monitoring shall be conducted at the approximate locations indicated on the attached site map.
 All monitoring shall be conducted per the requirements found in Attachment B of this Order.

Belews Creek Water Quality Monitoring Locations (North)



I/A

★ Upstream Monitoring – Dan River

★ Downstream Monitoring – Dan River & Belews Lake

★

★ Stream Monitoring

★

★ Stream Monitoring

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Belews Creek Water Quality Monitoring Locations (South)



★ Downstream Monitoring – Belews Lake

★ Stream Monitoring

SOC S18-004
Duke Energy Carolinas, LLC
Attachment B
Monitoring Requirements

The following represents the parameters to be analyzed and reported at all monitoring locations designated within this Special Order.

Parameter	Reporting Units	Monitoring Frequency
TSS	mg/L	Annually
Oil and Grease	mg/L	Annually
pH	Standard Units (s. u.)	Quarterly
Fluoride	µg/L	Quarterly
Total Mercury	ng/L	Quarterly
Total Barium	µg/L	Quarterly
Total Zinc	µg/L	Quarterly
Total Arsenic	µg/L	Quarterly
Total Boron	µg/L	Quarterly
Total Cadmium	µg/L	Quarterly
Total Chromium	µg/L	Quarterly
Total Copper	µg/L	Quarterly
Total Thallium	µg/L	Quarterly
Total Lead	µg/L	Quarterly
Total Nickel	µg/L	Quarterly
Total Selenium	µg/L	Quarterly
Nitrate/Nitrite as N	mg/L	Quarterly
Bromides	mg/L	Quarterly
Sulfates	mg/L	Quarterly
Chlorides	mg/L	Quarterly
TDS	mg/L	Quarterly
Total Hardness	mg/L	Quarterly
Temperature	° C	Quarterly
Conductivity, µmho/cm	µmho/cm	Quarterly

**Public Staff
Junis Exhibit 9**

**NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION**

COUNTY OF STOKES

IN THE MATTER OF)	
NORTH CAROLINA)	SPECIAL ORDER BY CONSENT
NPDES PERMIT NC0024406)	EMC SOC WQ S18-009
HELD BY)	
DUKE ENERGY CAROLINAS, LLC)	

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent is entered into by Duke Energy Carolinas, LLC, hereinafter referred to as Duke Energy, and the North Carolina Environmental Management Commission, an agency of the State of North Carolina created by G.S. 143B-282, and hereinafter referred to as the Commission. Duke Energy and the Commission are referred to hereafter collectively as the "Parties."

1. Duke Energy and the Commission hereby stipulate the following:
 - (a) Duke Energy holds North Carolina NPDES permit NC0024406 for the operation of an existing treatment system for coal ash wastewater at its Belews Creek Steam Station and the discharge of treated wastewater from that system.
 - (b) The Belews Creek Steam Station is a two-unit, coal fired electric generating facility with a 2,240 megawatt capacity, located on Belews Lake in southeastern Stokes County. The facility was constructed during the early 1970s. It was placed into service for commercial operation in 1974, and will continue to operate into the future.
 - (c) Treatment of coal ash wastewater is provided primarily through the use of a coal ash basin at the site that allows for the settling of solids within the coal ash slurry and eventual discharge of its liquid portion. The coal ash basin was constructed from 1970-1972 through the installation of an earthen dam across an unnamed tributary (UT) to the Dan River northwest of the steam station. The coal ash basin created by this activity has a surface area of approximately 342 acres.
 - (d) The coal ash basin originally discharged to Belews Lake, a 3,200 acre impoundment also created by Duke Energy in the 1970s as a source of cooling water for the steam station. Due to findings of elevated levels of selenium in Belews Lake during the 1980s, the outfall from the ash basin was relocated to its current location (Outfall 003) in 1985.

- (e) Outfall 003 was constructed as a concrete cascade structure with discharge to a channelized feature within the valley landscape below the earthen dam. In previous versions of the NPDES permit, Outfall 003 has been described as a discharge to the Dan River with the feature receiving the flow from the concrete cascade understood to be an effluent channel. In accord with this determination, effluent limitations for Outfall 003 were based upon conditions in the Dan River.
- (f) Investigations conducted by the U.S. Army Corps of Engineers and the North Carolina Department of Environmental Quality ("Department") during 2017 each concluded that feature receiving flow from the concrete cascade is a UT to the Dan River.
- (g) The latest draft of a proposed NPDES permit renewal for the Belews Creek Steam Station has adopted the conclusion noted in paragraph (f) above. The draft permit designates the receiving stream for the discharge from Outfall 003 to be a UT to the Dan River and a zero flow stream.
- (h) The latest draft of a proposed NPDES permit renewal for the Belews Creek Steam Station also provides coverage for the discharge of wastewater from Outfall 111, seep discharge from toe drains within the ash basin's earthen dam. This discharge also flows to the UT to the Dan River, upstream of the Outfall 003 discharge point
- (i) Because the receiving stream for Outfalls 003 and 111 is a zero flow stream, the proposed effluent limits associated with monitoring of the discharges in the draft permit are set as the water quality standards established for WS-IV waters (the stream classification of the UT to the Dan River) for those parameters.
- (j) Monitoring of the discharges from Outfalls 003 and 111 indicates that upon the prospective effective date of the NPDES permit renewal (currently estimated to be early 2019), the discharges will be noncompliant with the proposed effluent limits.
- (k) Noncompliance with final effluent limits will constitute causing and contributing to pollution of the waters of this State named above, and Duke Energy is within the jurisdiction of the Commission as set forth in G.S. Chapter 143, Article 21.
- (l) The composition of the discharged effluent will not substantially change from the effluent discharged from this facility for the past 34 years. While this Special Order provides relief from certain proposed effluent limits in NPDES permit NC0024406, these modified limits (see paragraphs 2(f), (g), and (h)) are more stringent than those applied in prior NPDES permits for this facility.
- (m) Notwithstanding paragraph (k) above, which establishes standing for the issuance of this Special Order, the Commission and Duke Energy further stipulate that no wrongdoing occurred on the part of Duke Energy through the discharge of wastewater via Outfall 003 as it was allowed under the terms of prior versions of NPDES permit NC0024406.

- (n) Duke Energy will close the Belews Creek Steam Station coal ash impoundment in accordance with applicable requirements set out in the North Carolina Coal Ash Management Act and the Federal Coal Combustion Residuals rule. This will require relocation of contributing flows to the ash basin, followed by decanting and dewatering of the basin. These contributing flows will be redirected to a Lined Retention Basin.
 - (o) In accord with the compliance schedule below, Duke Energy has agreed to construct an outfall pipe from the Lined Retention Basin to the Dan River on an expedited basis. This pipe will discharge at new Outfall 006.
 - (p) Additionally, Duke Energy has agreed to route the discharge of all ash basin dewatering flow to the Dan River via Outfall 006.
 - (q) In accord with the compliance schedule below, Duke Energy has also agreed to reroute any flow from Outfall 111 that remains after decanting of the ash basin is completed to Outfall 006 on an expedited basis.
 - (r) Upon completion of these construction activities, discharge of wastewater to the UT to the Dan River will be eliminated.
 - (s) Since this Special Order is by Consent, neither party will file a petition for a contested case or for judicial review concerning its terms.
2. Duke Energy, desiring to comply with the permit identified in paragraph 1(a) above, hereby agrees to do the following:
- (a) **Outfalls 006, 003 and 003A:** Undertake the following activities in accordance with the indicated time schedule:
 - (1) Conduct decanting activities at the Belews Creek Steam Station ash basin in accordance with the schedule established in EMC WQ SOC S18-004.
 - (2) On or before March 31, 2019, begin construction of new NPDES Outfall 006.
 - (3) No later than ten months following the execution of this Special Order, install a physical/chemical treatment system and begin treating at least 800 gallons per minute of the decanting flow.
 - a) Conduct weekly sampling of the influent and effluent of the physical/chemical treatment system for the constituents listed in Attachment A (with the exception of Chronic Toxicity). Report these results to the Department on a monthly basis.
 - b) After the first 2 months of sampling, in consultation with the Department, set parameters for ensuring the optimal performance of treatment system. Thereafter, operate the system consistent with those parameters.

- (4) On or before August 31, 2020, complete construction of Outfall 006.
- (5) On or before September 30, 2020, begin discharging to the Dan River via NPDES Outfall 006 and eliminate discharge from Outfalls 003 and 003A.
- (b) **Outfall 111:** Undertake the following activities in accordance with the indicated time schedule:
 - (1) On or before March 31, 2020, begin construction of the rerouting of flow from the toe drain seepage discharge (Outfall 111) to Outfall 006.
 - (2) On or before August 31, 2020, complete construction of the rerouting of the toe drain seepage discharge (Outfall 111) to Outfall 006.
 - (3) On or before September 30, 2020, begin discharging toe drain seepage to the Dan River via Outfall 006 and eliminate discharge from Outfall 111.
- (c) No later than January 31 and July 31 of each year during the time this Special Order is in effect, provide semi-annual progress reports documenting activities associated with the planning, design, construction and use of the new outfall to the Dan River. The reports are to be submitted as follows: one copy must be mailed to the Winston-Salem Regional Supervisor, Division of Water Resources/Water Quality Regional Operations Section, 450 West Hanes Mill Road; Suite 300, Winston-Salem, NC 27105, and one copy must be mailed to the Division of Water Quality/Water Quality Permitting Section, 1617 Mail Service Center, Raleigh, NC 27699-1617.
- (d) No later than thirty (30) calendar days after any date identified for accomplishment of any activity listed in paragraphs 2(a) and 2(b) above, submit to the Director of DWR a written notice of compliance (including the date compliance was achieved along with supporting documentation if applicable) or noncompliance therewith. In the case of noncompliance, the notice shall include a statement of the reason(s) for noncompliance, remedial action(s) taken, and a statement identifying the extent to which subsequent dates or times for accomplishment of listed activities may be affected.
- (e) Duke Energy shall comply with all terms and conditions of NPDES Permit NC0024406 except those effluent limitations identified in paragraphs 2(f), 2(g) and 2(h) below. See Attachments A, B, C and D for all monitoring requirements and effluent limitations. The Permittee may also be required to monitor for other parameters as deemed necessary by the Director in future permits or administrative letters.
- (f) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 003 contained in NPDES permit NC0024406 unless modified below:

Under this SOC, only the parameters listed below for Outfall 003 have been modified from the NPDES Permit NC0024406 issued in 2019.

During Normal Operations & Decanting

Parameter	Permit Limits		Modified Limits (SOC)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Arsenic	10.0 µg/L	340.0 µg/L	75.0 µg/L	340.0 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Selenium	5.0 µg/L	56.0 µg/L	25.0 µg/L	56.0 µg/L
Chronic Toxicity	Ceriodaphnia P/F @ 90%		Ceriodaphnia Full Range Testing – Monitor Only	

- (g) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 003A contained in NPDES permit NC0024406 unless modified below:

Under this SOC, only the parameters listed below for Outfall 003A have been modified from the NPDES Permit NC0024406 issued in 2019.

Parameter	Permit Limits		Modified Limits (SOC)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Arsenic	10.0 µg/L	340.0 µg/L	Monitor & Report	340.0 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Sulfates	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Cadmium	0.59 µg/L	3.24 µg/L	Monitor & Report	3.24 µg/L
Total Selenium	5.0 µg/L	56.0 µg/L	Monitor & Report	85.0 µg/L
Chronic Toxicity	Ceriodaphnia P/F @ 90%		Ceriodaphnia Full Range Testing – Monitor Only	
Total Thallium	2.0 µg/L	2.0 µg/L	Monitor & Report	4.0 µg/L

Because the concentrations of pollutants in the Lined Retention Basin discharge are currently unknown, for the purpose of future considerations, the minimum monitoring frequencies for all parameters monitored at NPDES permit Outfall 003A, with the exception of Chronic Toxicity, shall be increased to Weekly during its first six months of operation.

- (h) During the time in which this Special Order by Consent (SOC) is effective, Duke Energy shall comply with the effluent limitations for Outfall 111 contained in NPDES permit NC0024406 unless modified below:

Under this SOC, only the parameters listed below for Outfall 111 have been modified from the NPDES Permit NC0024406 issued in 2019.

Parameter	Permit Limits		Modified Limits (SOC)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
pH	≥ 6.0 & ≤ 9.0 Std. Units		≥ 5.0 & ≤ 10.0 Std. Units	
Total Mercury	12.0 ng/L	12.0 ng/L	47.0 ng/L (Annual Average)*	
Total Cadmium	0.59 µg/L	3.24 µg/L	2.0 µg/L	3.24 µg/L
Chlorides	250.0 mg/L	250.0 mg/L	Monitor & Report	
Total Dissolved Solids	500.0 mg/L	500.0 mg/L	Monitor & Report	

*Calendar Year

- (i) During the time in which this Special Order is effective, the following Interim Action Levels shall be established within the UT to the Dan River receiving discharges from Outfalls 003, 003A and 111, from the Outfall 003/003A discharge location to the confluence of the UT with the Dan River:

<u>Characteristic</u>	<u>Interim Action Level</u>
pH**	5.0 – 10.0 standard units
Cadmium	3.24 µg/L
Chlorides**	700.0 mg/L
Arsenic	25.0 µg/L
Mercury**	0.1 µg/L
Hardness**	800.0 mg/L
Selenium	56.0 µg/L
Total Dissolved Solids	1,700.0 mg/L
Sulfates	700.0 mg/L

** Interim Action Levels are the same as those as established in EMC SOC WQ S18-004.

3. Duke Energy agrees that unless excused under paragraph four (4), Duke Energy will pay the Director of DWR, by check payable to the North Carolina Department of Environmental Quality, stipulated penalties according to the following schedule for failure to meet the deadlines set out in paragraphs 2(a) and 2(b), the interim limits found in paragraphs 2(f), 2(g) and 2(h), or the interim action levels listed in paragraph 2(i).

Violation Description	Stipulated Penalty
Failure to meet a schedule date listed in paragraphs 2(a)(1) – 2(a)(4) or 2(b)(1) – 2(b)(2)	\$500 per missed schedule date within the first seven (7) days of tardiness; \$750 per day thereafter.
Failure to submit progress reports as required by paragraph 2(c).	\$500/day
Failure to maintain compliance with any modified limit contained in the Special Order	\$2,000/violation
Failure to maintain compliance with any interim action level contained in the Special Order	\$4,500/violation
Failure to eliminate discharge from Outfall 003 by September 30, 2020.	\$200,000.00 + \$3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 003 is eliminated
Failure to eliminate discharge from Outfall 003A by September 30, 2020.	\$200,000.00 + \$3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 003A is eliminated
Failure eliminate discharge from Outfall 111 by September 30, 2020.	\$200,000.00 + \$3,000.00 per each day beyond 30 days following deadline until discharge from Outfall 111 is eliminated

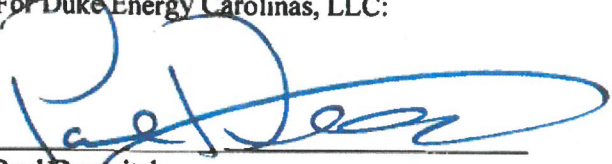
4. Duke Energy and the Commission agree that the stipulated penalties specified in paragraph 3 are not due if Duke Energy satisfies DWR that noncompliance was caused solely by:
- (a) An act of God;
 - (b) An act of war;
 - (c) An intentional act or omission of a third party, but this defense shall not be available if the act or omission is that of an employee or agent of Duke Energy or if the act or omission occurs in connection with a contractual relationship with Duke Energy;
 - (d) An extraordinary event beyond the Duke Energy's control, specifically including any court order staying the effectiveness of any necessary permit or approval. Contractor delays or failure to obtain funding will not be considered as events beyond Duke Energy's control; or
 - (e) Any combination of the above causes.

5. Failure within thirty (30) days of receipt of written demand by DWR to pay the stipulated penalties, or challenge them by a contested case petition pursuant to G.S. 150B-23, will be grounds for a collection action, which the Attorney General is hereby authorized to initiate. The only issue in such an action will be whether the thirty (30) days has elapsed.
6. Noncompliance with the terms of this Special Order is subject to enforcement action in addition to the above stipulated penalties, including, but not limited to injunctive relief pursuant to G.S. 143-215.6C.
7. This Special Order and any terms or conditions contained herein, hereby supersede any and all previous Special Orders (with the exception of EMC SOC WQ S18-004), Enforcement Compliance Schedule Letters, terms, conditions, and limits contained therein issued in connection with NPDES permit NC0024406. In the event of an NPDES permit modification or renewal, any effluent limit of monitoring requirements contained therein shall supersede those contained in this Special Order by Consent, except as modified and contained in paragraphs 2(f), 2(g) and 2(h) above.
8. This Special Order may be modified at the Commission's discretion, provided the Commission is satisfied that Duke Energy has made good faith efforts to secure funding, complete all construction, and achieve compliance within the dates specified. In accordance with applicable law, modification of this Special Order will go to public notice prior to becoming effective.
9. In addition to any other applicable requirement, each report required to be submitted by Duke Energy under this Special Order shall be signed by a plant manager or a corporate official responsible for environmental management and compliance, and shall include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
10. This Special Order shall become effective in accordance with state law, and once effective, Duke Energy shall comply with all schedule dates, terms, and conditions herein.

This Special Order by Consent shall expire on December 31, 2020.

For Duke Energy Carolinas, LLC:




Paul Dracvitch
Senior Vice President, Environmental, Health & Safety

3/21/19

Date

For the North Carolina Environmental Management Commission:



Linda Culpepper, Director
N.C. Division of Water Resources
For the Chair of the Commission

3/21/2019

Date

ATTACHMENT A
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(Outfall 003 – normal operations/decanting)

During the period beginning on the effective date of this Special Order and lasting until September 30, 2020, Duke Energy is authorized to discharge from Outfall 003 - Ash Settling Basin (**decanting the free water above the settled ash layer that does not involve mechanical disturbance of the ash**). Such discharges shall be limited and monitored⁵ by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow, MGD	5.0 MGD		Weekly	Pump logs or estimate	Effluent
Oil and Grease ¹	15.0 mg/L	20.0 mg/L	Monthly	Grab	Effluent
Total Suspended Solids ^{1,7}	30.0 mg/L	50.0 mg/L	Monthly	Grab	Effluent
Total Arsenic, µg/L	75.0 µg/L	340.0 µg/L	Monthly	Grab	Effluent
Chlorides	Monitor & Report		Monthly	Grab	Effluent
Sulfates	250.0 mg/L	250.0 mg/L	Monthly	Grab	Effluent
Total Iron ¹⁰	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Copper ¹⁰	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Aluminum	6.5 mg/L	6.5 mg/L	Monthly	Grab	Effluent
Total Cadmium	0.59 µg/L	3.24 µg/L	Monthly	Grab	Effluent
Total Selenium	25.0 µg/L	56.0 µg/L	Monthly	Grab	Effluent
Total Zinc, µg/L	Monitor & Report		Monthly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Monthly	Grab	Effluent
Total Dissolved Solids, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Silver, µg/L	Monitor & Report		Monthly	Grab	Effluent
Fluoride, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Phosphorus, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Nitrogen (NO ₂ + NO ₃ + TKN), mg/L	Monitor & Report		Monthly	Grab	Effluent
Chronic Toxicity²	See footnote		Quarterly	Grab	Effluent
pH ^{3,8}	See footnote		2/Month	Grab	Effluent
Bromides, mg/L	Monitor & Report		Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	2.0 µg/L	2.0 µg/L	Monthly	Grab	Effluent
Total Mercury ⁴ , ng/L	Monitor & Report		Monthly	Grab	Effluent
Turbidity ⁶ , NTU	See footnote		Weekly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Monthly	Grab	Effluent
Ammonia ⁹	1.0 mg/L	5.0 mg/L	Variable	Grab	Effluent

Notes:

- Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
- Whole Effluent Toxicity shall be monitored through full range chronic toxicity (Ceriodaphnia) testing (parameter code THP3B).** See Attachment D of this SOC for details.
- The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
- The facility shall employ method 1631E.
- Please See Special Condition A. (23.) of NPDES permit NC0024406.

ATTACHMENT A
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

6. The discharge from this facility shall not cause turbidity in the receiving stream to exceed 50 NTU. If the instream turbidity exceeds 50 NTU due to natural background conditions, the discharge cannot cause turbidity to increase in the receiving stream. Therefore, if the effluent measurement exceeds 50 NTU, the Permittee shall sample upstream and downstream turbidity in the receiving waterbody, within 24 hours, to demonstrate the existing turbidity level in the receiving waterbody was not increased. All data shall be reported on the DMRs. (See 15A NCAC 2B .0211 (21)). NTU - Nephelometric Turbidity Unit.
7. The facility shall continuously monitor TSS concentration when the decanting process commences and the decanting pump shall be shutoff automatically when one half of the Daily Maximum limit (15 minutes average) is exceeded. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous TSS monitoring only required when the pumps are employed for decanting.
8. The facility shall continuously monitor pH when the decanting process commences and the decanting pump shall be shutoff automatically when the 15 minutes running average pH falls below 6.1 standard units or rises above 8.9 standard units. Pumping will be allowed to continue if interruption might result in a dam failure or damage. The continuous pH monitoring is only required when the pumps are employed for decanting.
9. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia. The sampling should be commenced as soon as possible after the release considering personnel safety and every hour thereafter until the sampling indicate no discharge of ammonia.
10. The limit applies only when the chemical metal cleaning waste is being discharged to the basin.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Outfall sampling shall be conducting prior to the commingling with wastewater from Outfall 003A.

The facility is allowed to drawdown the wastewater in the ash pond to no less than three feet above the ash. The rate for lowering the liquid level in a coal ash pond shall not exceed one (1) foot per day unless a higher rate is supported to the satisfaction of DEMLR and in accordance with NCAC, Title 15A, Subchapter 2K.

The facility shall use a floating pump suction pipe with free water skimmed from the basin surface using an adjustable weir. The limits and conditions in Section A. (4.) of the permit apply when water in the ash settling basin is lowered below the three feet trigger mark.

By November 1, 2018 there shall be no discharge of pollutants in fly ash transport water. This requirement only applies to fly ash transport water generated after November 1, 2018.

By May 31, 2021 there shall be no discharge of pollutants in bottom ash transport water. This requirement only applies to bottom ash transport water generated after May 31, 2021.

The facility shall notify via e-mail DWR Complex NPDES Permitting Unit and DWR Winston-Salem Regional Office seven calendar days prior to the commencement of the decanting.

In accordance with the N.C.G.S. § 130A-309.210, by December 31, 2019, the facility shall convert to the disposal of dry bottom ash, as defined in the Coal Ash Management Act ("CAMA").

ATTACHMENT B
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
(Outfall 003A – Lined Retention Basin)

During the period beginning upon the commencement of operation of the new Lined Retention Basin and lasting September 30, 2020, Duke Energy is authorized to discharge from Outfall 003A (new lined retention basin). Such discharges shall be limited and monitored² by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency ⁷	Sample Type	Sample Location
Flow, MGD	Monitor & Report		Weekly	Instantaneous	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Quarterly	Grab	Effluent
Total Suspended Solids	30.0 mg/L	50.0 mg/L	Quarterly	Grab	Effluent
pH ³	See footnote		Weekly	Grab	Effluent
Total Arsenic, µg/L	Monitor & Report	340.0 µg/L	Quarterly	Grab	Effluent
Total Mercury ¹ , ng/L	Monitor & Report		Quarterly	Grab	Effluent
Total Selenium	Monitor & Report	85.0 µg/L	Monthly	Grab	Effluent
Nitrate/nitrite as N, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Chlorides	Monitor & Report		Monthly	Grab	Effluent
Sulfates	Monitor & Report		Monthly	Grab	Effluent
Total Nickel, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Fluoride, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Barium, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Cadmium µg/L	Monitor & Report	3.24 µg/L	Monthly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Quarterly	Grab	Effluent
Total Copper ⁶	1.0 mg/L	1.0 mg/L	Monthly	Grab	Effluent
Total Lead	2.94 µg/L	75.48 µg/L	Monthly	Grab	Effluent
Total Thallium	Monitor & Report	4.0 µg/L	Monthly	Grab	Effluent
Chronic Toxicity ⁴	See footnote		Quarterly	Grab	Effluent
Ammonia ⁵	1.0 mg/L	5.0 mg/L	Daily	Grab	Effluent
Total Iron ⁶	1.0 mg/L	1.0 mg/L	Quarterly	Grab	Effluent

Notes:

1. The facility shall employ method 1631E. Monitoring for TSS, oil and grease and all toxicants shall be performed concurrently with the Chronic Toxicity test.
2. Please See Special Condition A. (23.) of NPDES permit NC0024406.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.
4. **Whole Effluent Toxicity shall be monitored through full range chronic toxicity (Ceriodaphnia) testing (parameter code THP3B). See Attachment D of this SOC for details.**
5. Ammonia limit and monitoring is only applicable in the event of the emergency release of anhydrous ammonia.
6. The limit applies when the chemical metal cleaning waste is being discharged to the basin.

ATTACHMENT B
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

Outfall 003A Footnotes, continued

7. The monitoring frequency for all parameters, with the exception of Chronic Toxicity, shall be Weekly during the first six months of operation (discharge) of the Lined Retention Basin treatment system.

The facility shall submit EPA Form 2C for this Outfall within 2 years of commencement of the discharge.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Outfall sampling shall be conducting prior to the commingling with wastewater from Outfall 003.

ATTACHMENT C
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
Outfall 111

During the period beginning on the effective date of this Special Order and lasting until September 30, 2020, Duke Energy is authorized to discharge from Outfall 111 – Toe Drain Discharge. Such discharges shall be limited and monitored¹ by the Permittee as specified below. Note that conditions for only those parameters indicated in **Bold** have been modified from the terms of NPDES permit NC0024406.

EFFLUENT CHARACTERISTIC	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency ²	Sample Type	Sample Location
Flow, MGD	Monitor & Report		Monthly/Quarterly	Estimate	Effluent
pH ³	See Footnote		Monthly/Quarterly	Grab	Effluent
TSS	30.0 mg/L	100.0 mg/L	Monthly/Quarterly	Grab	Effluent
Oil and Grease	15.0 mg/L	20.0 mg/L	Monthly/Quarterly	Grab	Effluent
Fluoride, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Mercury ⁴ , ng/L	47.0 ng/L (Annual Average)*		Monthly/Quarterly	Grab	Effluent
Total Barium, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Zinc, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Arsenic	10.0 µg/L	340.0 µg/L	Monthly/Quarterly	Grab	Effluent
Total Boron, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Cadmium, µg/L	2.0 µg/L	3.24 µg/L	Monthly/Quarterly	Grab	Effluent
Total Chromium, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Copper, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Thallium	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Lead, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Nickel, µg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Selenium	5.0 µg/L	56.0 µg/L	Monthly/Quarterly	Grab	Effluent
Nitrate/nitrite as N, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Sulfates, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Chlorides	Monitor & Report		Monthly/Quarterly	Grab	Effluent
TDS, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Total Hardness, mg/L	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Temperature, °C	Monitor & Report		Monthly/Quarterly	Grab	Effluent
Conductivity, µmho/cm	Monitor & Report		Monthly/Quarterly	Grab	Effluent

Notes:

1. Please See Special Condition A. (23.) of NPDES permit NC0024406.
2. The facility shall conduct monthly sampling from the effective date of the permit. After one year from the effective date of the permit the monitoring will be reduced to quarterly.
3. **The pH shall not be less than 5.0 standard units nor greater than 10.0 standard units.**
4. The facility shall employ method 1631E.

***Calendar Year**

If no discharge occurs during the reporting period or the Permittee is unable to obtain a representative sample due to low-flow conditions at the seep, the Permittee shall submit its DMR, as required, and indicate "No Flow" for the seep (15A NCAC 02B .0506(a)(1)(E)).

There shall be no discharge of floating solids or visible foam in other than trace amounts.

ATTACHMENT D
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

Full Range Whole Effluent Toxicity Monitoring (*Ceriodaphnia Dubia*)

Duke Energy shall perform full range Whole Effluent Toxicity Monitoring of the effluent discharges from both Outfall 003 and Outfall 003A, using *Ceriodaphnia dubia* as a test species.

The chronic value for multiple concentration tests will be determined using the geometric mean of the highest concentration having no detectable impairment of reproduction or survival and the lowest concentration that does have a detectable impairment of reproduction or survival. The definition of “detectable impairment,” collection methods, exposure regimes, and further statistical methods are specified in the “North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure” (Revised-December 2010) or subsequent versions.

Duke Energy shall perform at a minimum, quarterly monitoring using test procedures outlined in the “North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure” (Revised-December 2010) or subsequent versions. The tests will be performed **during the months of February, May, August, and November**. These months signify the first month of each three month toxicity testing quarter assigned to the facility. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

All toxicity testing results required as part of this SOC condition will be reported using the eDMR system for the months in which tests were performed using the parameter code **THP3B** for the Chronic Value. Additionally, DWR Form AT-3 (original) is to be sent to the following address:

Attention: North Carolina Division of Water Resources
Water Sciences Section
1621 Mail Service Center
Raleigh, North Carolina 27699-1621

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of “No Flow” in the comment area of the form. The report shall be submitted to the Water Sciences Section at the address cited above.

ATTACHMENT D
EMC SOC WQ S18-009
Duke Energy Carolinas, LLC – Belews Creek Steam Station

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month. Assessment of toxicity compliance is based on the toxicity testing quarter, which is the three month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an **invalid test** and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

No. 271A18 & 401A18

Public Staff
Junis Exhibit 10

SUPREME COURT OF NORTH CAROLINA

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
PROGRESS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

From the North Carolina
Utilities Commission

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
CAROLINAS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor;
NORTH CAROLINA SUSTAINABLE ENERGY
ASSOCIATION, Intervenor; NORTH
CAROLINA JUSTICE CENTER, NORTH

From the North Carolina
Utilities Commission

CAROLINA HOUSING COALITION,
NATURAL RESOURCES DEFENSE COUNCIL,
and SOUTHERN ALLIANCE FOR CLEAN
ENERGY, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

**AMICUS CURIAE BRIEF OF THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY**

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No. 271A18 & 401A18

SUPREME COURT OF NORTH CAROLINA

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
PROGRESS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

From the North Carolina
Utilities Commission

STATE OF NORTH CAROLINA ex rel.
UTILITIES COMMISSION; DUKE ENERGY
CAROLINAS, LLC, Applicant,

Appellees,

v.

ATTORNEY GENERAL JOSHUA H. STEIN,
Intervenor; SIERRA CLUB, Intervenor;
NORTH CAROLINA SUSTAINABLE ENERGY
ASSOCIATION, Intervenor; NORTH
CAROLINA JUSTICE CENTER, NORTH

From the North Carolina
Utilities Commission

CAROLINA HOUSING COALITION,
NATURAL RESOURCES DEFENSE COUNCIL,
and SOUTHERN ALLIANCE FOR CLEAN
ENERGY, Intervenor,

Appellants,

PUBLIC STAFF—NORTH CAROLINA
UTILITIES COMMISSION, Intervenor,

Cross-Appellant.

**AMICUS CURIAE BRIEF OF THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY**

ISSUES PRESENTED

1. DID THE UTILITIES COMMISSION CORRECTLY
INTERPRET THE GROUNDWATER RULES, IN
PARTICULAR REGARDING WHEN A VIOLATION OF
THE 2L STANDARDS OCCURS?
2. DID THE UTILITIES COMMISSION CORRECTLY
INTERPRET THE COAL ASH MANAGEMENT ACT, IN
PARTICULAR REGARDING THE TRIGGER FOR
MONITORING, ASSESSMENTS AND CORRECTIVE
ACTION UNDER THE ACT?

INTRODUCTION AND SUMMARY¹

Amicus curiae the North Carolina Department of Environmental Quality (the “Department”) requested leave to submit this brief to expound on two aspects of the orders under review in these consolidated cases.² As discussed below, the Utilities Commission has misconstrued two separate provisions of law that are integral to the Department implementing its mandate to protect the state’s vital groundwater resources from contamination.

First, the Utilities Commission indicated that an exceedance of the groundwater standards that triggers a regulatory requirement for corrective action may not be a “violation” of law so long as the responsible party is diligently conducting remediation. If that were the case, the Department would be stripped of certain of its enforcement powers regarding these

¹ Pursuant to Appellate Rule 28(i)(2), the amicus represents that this brief was prepared by the amicus and its counsel with no monetary or other contributions from any other persons or entities.

² For consistency with previous briefs, the Department will refer to Duke Energy Progress and Duke Energy Carolinas as Progress and Carolinas, respectively, and as Duke collectively, with the two orders at issue being referred to as the Progress order (Progress R pp 477-754) and the Carolinas order (Carolinas R pp 825-1226).

exceedances. But it is not correct. Exceedances of the groundwater standards that occur at or beyond established distances from a facility are violations, regardless of whether the responsible party is engaged in corrective action. It is these violations that obligate the responsible party to assess and remedy the violations, and also authorize the Department to take enforcement action.

Second, the Utilities Commission opined that the groundwater assessment and corrective action requirements under the Coal Ash Management Act are triggered by exceedances of groundwater standards. This is incorrect. The assessment and remediation requirements under this act result from mere ownership of a coal combustion residuals surface impoundment.

The Department respectfully urges the Court that, should it be necessary to opine on these issues, the Court's opinion accord with the law as explained below.

ARGUMENT

I. AN EXCEEDANCE OF A GROUNDWATER STANDARD THAT OCCURS AT OR BEYOND THE COMPLIANCE BOUNDARY IS A VIOLATION AND REQUIRES ASSESSMENT AND CORRECTIVE ACTION BY THE RESPONSIBLE PARTY.

The General Assembly has tasked the Environmental Management Commission (“EMC”) and the Department with the responsibility to protect the groundwater in the state. To that end, the EMC has adopted rules that establish maximum allowable groundwater concentrations for nearly 150 chemicals, including carcinogens and acute toxins. 15A N.C. Admin. Code 2L .0202 (hereinafter “2L standards”). The EMC has also adopted a robust regime to ensure that violations of those standards are expeditiously identified and remedied. *Id.* r. 2L .0101 *et seq.* (the “Groundwater Rules”). The EMC, in turn, has authorized the Department to oversee the Groundwater Rules, *id.*, and the General Assembly has vested the Secretary of Environmental Quality with the authority to enforce those rules, N.C. Gen. Stat. § 143-215.6A(a)(1), (6).

When a violation of these standards occurs, the rules mandate that the responsible party assess the situation and remedy the violation. However, in the orders under review in this case, the Utilities Commission indicated that so long as the responsible party is complying with the assessment and

correction action requirements, the party may not be in violation of the standard. (Carolinas R pp 1121-23; Progress R pp 653-55) As demonstrated below, this is incorrect.

A. The finding of a violation of the 2L standards triggers the assessment and remediation requirements.

The Groundwater Rules are clear that any “increase in the concentration of a substance” to a level above a 2L standard may be a “violation.” 15A N.C. Admin. Code 2L .0106(c)-(e). But whether such a concentration is a “violation” and not a mere “exceedance” depends on the circumstances.

The rules differentiate between facilities that have individual permits issued under N.C. Gen. Stat. § 143-215.1 or chapter 130A and those that do not. Facilities with such individual permits have a “compliance boundary.” See id. r. 2L .0101(3), .0107. A compliance boundary is a perimeter established by rule around a permitted facility. Exceedances of 2L standards are allowed inside this perimeter. However, if the permitted activity “results in an increase in the concentration of a substance in excess of the standards at or beyond the compliance boundary,” the permittee must “notify the Department” “of the violation.” Id. r. 2L .0106(e) (emphasis added); see also id. r. 2L .0106(d). In addition, the permittee must submit a report that

assesses “the cause, significance, and extent of the violation.” Id. (emphasis added).

For activities that lack permits, when the activity “results in an increase in the concentration of a substance in excess of the standard,” the person conducting the activity must “notify the Department” “of the violation” and report to the Department on “the cause, significance, and extent of the violation.” Id. r. 2L .0106(c) (emphasis added). There is no compliance boundary and therefore no geographic limit for violations caused by activities that lack permits. See id.

By contrast, an “exceedance” occurs when the concentration of a substance is greater than the 2L standard. The existence of an exceedance is a factual determination, and does not necessarily indicate a violation.

The rules regarding “review boundaries” elucidate the distinction between violations and exceedances. Certain permitted facilities have a “review boundary” that is enclosed within the compliance boundary. 15A N.C. Admin. Code 2L .0102(20). The purpose of the review boundary is to identify problems before they manifest at the compliance boundary. “When the concentration of any substance equals or exceeds the standard at the review boundary” the permittee must take steps to ensure that the

exceedance does not reach the compliance boundary. Id. r. 2L .0106(d)(1), .0108 (emphasis added). Only if the exceedance were to migrate to the compliance boundary would it then constitute “a violation.” Id. r. 2L .0106(d)(1). That is, an exceedance that occurs within the compliance boundary is not a violation.

In some areas, contaminants may naturally be present in the groundwater at levels above the concentrations listed in rule 2L .0202. The rules define the regulatory standard as the greater of the specific numeric standard listed in 2L .0202 or naturally occurring concentrations. Id. r. 2L .0202(b)(3). In this way, the rules ensure that nobody can be held liable for naturally occurring concentrations of contaminants.

Accordingly, a violation occurs at a permitted facility if the permitted activity causes contaminant levels at or beyond the compliance boundary that exceed the 2L standards. For an unpermitted activity, a violation occurs if the activity results in an exceedance of the 2L standard anywhere.

B. Compliance with the assessment and remediation requirements does not negate the existence of a 2L violation.

In its orders, the Utilities Commission discussed Duke’s compliance with the Groundwater Rules. In these discussions, the Commission properly

recognized that there is a difference between an exceedance of the 2L standards and a violation of the Groundwater Rules. However, the Commission drew that line in the wrong place.

As the discussion above indicates, an exceedance is a violation of a 2L standard if it occurs at or beyond the compliance boundary. However, in the Carolinas and Progress orders at issue here, the Commission indicates that so long as the exceedance is being properly addressed through the remediation process, then no violation has occurred. This contradicts the controlling regulations.

In the Carolinas order, the Utilities Commission “agree[d]” with and gave “substantial weight” to the following testimony of Carolinas’ witness James Wells:

[E]ven when an exceedance requires corrective action, the groundwater rules do not treat the exceedance the same way as, for example, the Clean Water Act treats an exceedance of an NPDES permit limit. When the latter is violated . . . the permittee is immediately subject to an NOV and penalty, and must ensure the next discharge complies with the permit limit or risks a new NOV and escalating penalty. [Citation omitted]

Witness Wells contrasted this process with groundwater standards, under which an exceedance does not immediately result in an NOV and escalating penalty. Instead, he explained the owner/operator must report the exceedance and work with the DEQ to determine whether

it was due to permitted activity, assess the extent of the exceedance, and undertake corrective action. . . . He testified that the 2L rules' corrective action provisions are deliberately designed around the idea that older facilities, built before liners were a regulatory obligation, were likely to have associated groundwater impacts, that such impacts were not the result of regulatory noncompliance, and that they should be addressed in a measured process. He concluded that compliance with this process is not mismanagement and should not be held against [Carolinas] with respect to cost recovery. [Citation omitted]

(Carolinas R pp 833, 1122-23)

The gist of this testimony is that an exceedance is not a violation so long as corrective action is being undertaken. This testimony misapplies the law.

Most tellingly, Witness Wells incorrectly restated critical language in the Groundwater Rules. Witness Wells explained in the passage above that upon the detection of an exceedance, the "owner/operator must . . . assess the extent of the exceedance." (Carolinas R p 1122 (emphasis added)) That is inaccurate. The Groundwater Rules mandate instead that in such circumstances, the owner/operator must "assess[] the . . . extent of the violation." E.g., 15A N.C. Admin. Code 2L .0106(e)(3) (emphasis added).

The contrast with enforcement procedures under federal law also fails to show that an exceedance for which corrective action is underway is not a

violation. Whether an enforcement agency chooses to enforce immediately or to defer enforcement does not inform whether a violation has occurred. It only speaks to the agency's enforcement discretion, not its authority.

On this subject, Witness Wells also recounted a 2011 Department memorandum, which was rescinded by the Department in late 2015. (See Carolinas Doc. Ex. 9902, 10714-16; Progress Doc. Ex. 3822) He correctly summarized that pursuant to the 2011 memorandum, "only after a utility failed to undertake corrective action when directed to do so would DEQ consider pursuing enforcement." (Carolinas R p 1122) But the memorandum clarified that "[i]f the permitted facility is determined to be in non-compliance . . . adherence to the corrective action requirements specified in 15A NCAC 2L .0106 will be required." Put another way, "non-compliance," i.e., a violation, is not the result of a failed corrective action; it is instead a necessary precursor to the requirement to undertake corrective action.³ (Carolinas Doc. Ex. 10715)

³ At one point, the Commission appears to recognize that the "corrective action provisions" in the Groundwater Rules are "triggered by . . . violations." (Carolinas R p 1123 (emphasis in original)) This does not clarify the issue but only further muddies the waters as to the Commission's position.

Further, Witness Wells testified that “older facilities” that were “built before liners were a regulatory obligation . . . should be addressed in a measured process.” (Carolinas R p 1123) To the extent that this concept of a “measured process” imports the notion that an exceedance at or beyond the compliance boundary is not a violation, it incorrectly states the law.

At several other points, the Commission’s discussion similarly appeared to veer significantly from the proper interpretation of the Groundwater Rules. First, the Commission stated that, under the 2015 settlement between Duke and the Department, “there was a very serious question as to whether any violation of the State’s groundwater standards had occurred.” (Carolinas R p 1121) This is inaccurate. The 2015 settlement specifically states that “Duke Energy submitted monitoring that showed exceedances of the State’s groundwater standards at or beyond the compliance boundary at the Asheville Plant.” (Carolinas Doc. Ex. 2086) A simple application of the Groundwater Rules shows that there was no question that a violation had occurred.⁴ In fact, a later superior court

⁴ The 2015 settlement even recounts that the Department “sent Duke Energy a Notice of Violation . . . based upon groundwater monitoring results

judgment ordered Duke to take significant steps to “remedy[] the violations” that the Department had brought to the court’s attention. (Carolinas Doc. Ex. 9969)

Second, the Utilities Commission appears to have agreed with Witness Wells that “exceedances of groundwater standards . . . do not indicate mismanagement or poor compliance programs” because they are “rather a function of where these sites are on the timeline of groundwater assessment and corrective action under modern laws that have changed the way unlined basins are viewed.” (Carolinas R p 1121) Any suggestion here that “the existence of groundwater exceedances at or beyond the compliance boundaries” are not violations, i.e., “poor compliance,” would be inaccurate.

. . . for the Asheville Plant.” (Carolinas Doc. Ex. 2086) This notice was later withdrawn in order to facilitate the settlement of a contested case filed by Duke. (Id. at 2090)

By entering into the 2015 settlement, the Department agreed not to, for example, “file any judicial action against” Duke regarding groundwater monitoring or groundwater conditions at Duke’s coal ash sites. (Carolinas Doc. Ex. 2090) To be clear, even if this amicus brief were a “fil[ing]” of a “judicial action,” it is not made “against Duke.” The Department does not take a position on the outcome of this litigation. The Department offers this brief to apprise the Court of its interpretation of the Groundwater Rules and a limited provision of Coal Ash Management Act in order to ensure that no inadvertent violence is done to these provisions in this litigation.

Indeed, “the existence of groundwater exceedances at or beyond the compliance boundaries” is a violation of the 2L standards by definition.

The Court can see here, again, the attempt to hinge the determination of whether a violation has occurred on compliance with “groundwater assessment and correction action.” And again, the Court should reject that effort. “[G]roundwater assessment and correction action” are legal requirements that flow from the existence of a violation of the 2L standards. They are not themselves used to determine whether a violation has occurred.

It is irrelevant in this context that, as the Utilities Commission noted, “requirements changed over time.” (Carolinas R p 1121) The fact that any party may have failed to conform itself to new standards once those standards became enforceable does not negate any violations of those new standards.

Third, the Utilities Commission made these same missteps in the Progress order. For example, the Commission approved of the notion that “groundwater impacts” from “older facilities, built before liners were a regulatory obligation . . . should be addressed in a measured process” (Progress R p 653), which incorrectly implies that an exceedance at or beyond the compliance boundary is not necessarily a violation. Similarly,

and equally as problematic, the Commission in the Progress order recapped with approval Witness Wells' testimony that "exceedances of groundwater standards" were merely "a function of where these sites are on the timeline of groundwater assessment and corrective action" and therefore not indicative of "poor compliance." (Id.; see also id. at 654-55 (repeating the discussion of the Department's 2011 memorandum))

The import of the distinction between an "exceedance" and a "violation" is not limited to leaky coal ash ponds. The Groundwater Rules apply to any type of operation that may cause contamination of groundwater, such as fuel service stations, quarries, landfills, manufacturing facilities, etc. 15A N.C. Admin. Code 2L .0106(c)-(e) (applying requirements to "[a]ny person conducting or controlling an activity").

The Secretary may assess a penalty "against any person who . . . [v]iolates" a 2L standard. See N.C. Gen. Stat. § 143-215.6A(a)(1). The Secretary may also penalize one who "[v]iolates a rule of the [Environmental Management] Commission," such as the Groundwater Rules. Id. § 143-215.6A(a)(6). For "continuous" actions, penalties may reach "twenty-five thousand dollars (\$ 25,000) per day for so long as the violation continues."

Id. § 143-215.6A(b).⁵ If an entity were determined to be in compliance with the Groundwater Rules simply because it was following through on its obligations to assess and remediate violations, the Department’s ability to penalize wrongdoers could be eviscerated and an effective deterrent would be lost.

For all of these reasons, should the Court find it necessary to opine on the issue, the Court should confirm that an exceedance of a 2L standard (including background concentrations) that occurs at or beyond a compliance boundary (if one exists) is a violation that subjects the violator to available enforcement mechanisms.

II. THE ASSESSMENT AND CORRECTIVE ACTION REQUIREMENTS UNDER THE COAL ASH MANAGEMENT ACT ARE NOT PREDICATED ON AN EXCEEDANCE OF A 2L STANDARD.

The Utilities Commission also misinterpreted a critical provision of the Coal Ash Management Act of 2014. N.C. Gen. Stat. § 130A-309.200 et seq. In the Carolinas order, the Commission stated that “one key difference

⁵ Criminal sanctions may also flow from “violat[ion]s” of “standards . . . established in rules adopted by the [Environmental Management] Commission.” Id. § 143-215.6B(f)-(h). Likewise, the Department may seek injunctive relief if it believes “that any person has violated” the Groundwater Rules and the 2L standards. Id. § 143-215.6C.

between” the act and the Groundwater Rules “is that [the act]’s groundwater assessment and corrective action provisions are triggered by exceedances – not violations – of the 2L groundwater standards.” (Carolinas R p 1123 (footnote omitted)) This inaccurately sets forth the trigger under the act.

The Groundwater Rules require assessment and remediation of groundwater contamination if an “activity . . . results in” an exceedance “at or beyond the compliance boundary,” which is by rule “a violation.” 15A N.C. Admin. Code 2L .0106(e). The Coal Ash Management Act does not use an analogous trigger tied to an exceedance. Instead, the act requires assessment and remediation at all coal combustion residuals surface impoundments, regardless of whether an exceedance or a violation as occurred.

Section 130A-309.211⁶ of the Coal Ash Management Act provides that “[t]he owner of a coal combustion residuals surface impoundment shall conduct groundwater monitoring and assessment as provided in this subsection” and “implement corrective action for the restoration of

⁶ Section 130A-309.211 was originally enacted in 2014 as section 130A-309.209. Coal Ash Management Act of 2014, ch. 122, § 3(a), 2014 N.C. Sess. Laws 828, 838-40 (enacting N.C. Gen. Stat. § 130A-309.209) (See also Progress Doc. Ex. 950-52). It was recodified as section 130A-309.211 in 2016. Act of July 14, 2016, ch. 95, § 1, 2016 N.C. Sess. Laws ___, ___.

groundwater quality as provided in this subsection.” N.C. Gen. Stat. § 130A-309.21(a)-(b). There is no requirement that any exceedance or violation occur or be identified before any party is mandated to “conduct groundwater monitoring and assessment” and “implement corrective action.” The mere fact that a party is an “owner of a coal combustion residuals surface impoundment” triggers the obligation to monitor, assess, and implement corrective action.

Therefore, the Commission’s conclusion that the Coal Ash Management Act’s “groundwater assessment and corrective action provisions are triggered by exceedances” (Carolina’s R p 1123) is contrary to the plain language in the statute.

CONCLUSION

For the foregoing reasons, the Court should (1) interpret the Groundwater Rules to indicate that an exceedance of a 2L standard (including background concentrations) at or beyond the applicable compliance boundary is a violation that subjects the violator to available enforcement mechanisms regardless of any ongoing corrective action, and (2) interpret the Coal Ash Management Act to require each “owner of a coal

combustion residuals surface impoundment” to conduct monitoring, assessment, and corrective action regardless of any exceedances.

Respectfully submitted this the 25th day of September, 2019.

NORTH CAROLINA
DEPARTMENT OF JUSTICE,
ENVIRONMENTAL DIVISION

Electronically Submitted

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N.C. App. R. 33(b) Certification: I
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CERTIFICATE OF COMPLIANCE

I certify that, pursuant to Appellate Rule 28(j), this brief (excluding the parts omitted by rule from the calculation) contains fewer than 3,750 words.

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September 25, 2019

CERTIFICATE OF SERVICE

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September 25, 2019

**Public Staff
Junis Exhibit 11
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No. of 2L and IMAC Standards Violations At or Beyond the Compliance Boundary by Constituent

	Parameters	Generating Station							Violations Total
		Allen	Belews Creek	Buck	Cliffside	Dan River	Marshall	Riverbend	
IMAC	Antimony	52	35	35	35	5	21	13	196
	Arsenic	21	69	1	43	6	-	-	140
	Barium	8	11	-	11		2	1	33
IMAC	Beryllium	21	104		7	14		15	161
	Boron	59	194	56	63	41	143		556
	Cadmium	20	29		4	1		16	70
	Chloride	1	69		2		4		76
	Chromium	20	114	21	80	5	28	39	307
	Chromium (VI)	14	7	4	2	2	5	8	42
IMAC	Cobalt	203	470	76	116	47	121	74	1,107
	Copper		1						1
	Iron	157	564	102	217	114	152	176	1,482
	Lead		11		3		4		18
	Manganese	236	775	156	383	176	208	163	2,097
	Mercury	-	6	1	1				8
	Nickel	29	4			2	3	23	61
	pH	492	747	135	307	9	149	164	2,003
	Selenium	20	102		15	1	16		154
	Sulfate	70	165	43	132	11	32	92	545
	Thallium	14	52		69	3	39	4	181
	Total Dissolved Solids	73	206	37	125	-	19	93	553
Federal MCL	Total Radium	5	40		7		2	4	58
	Vanadium	149	197	127	202	72	149	159	1,055
	Zinc	19			3	3	1	10	36
Violations Total		1,683	3,972	794	1,827	512	1,098	1,054	10,940

Notes:

*Data compiled from DEC responses to Public Staff Data Request 2-18, dated October 9, 2019.

*Per DEC, 2L Violation counts exclude results where the sample results for turbidity > 10 NTU or pH > 8.5.

*Provisional Background Threshold Values reflect the values represented in the NCDEQ letters dated September 1, 2017 and October 11, 2017.

**Public Staff
Junis Exhibit 12
Page 1 of 1**

No. of Federal MCL and Secondary MCL Exceedances by Constituent

Parameters	Generating Station
	WS Lee
Antimony	-
Arsenic	1
Barium	-
Beryllium	-
Boron	-
Cadmium	2
Chloride	-
Chromium	-
Chromium (VI)	-
Cobalt	-
Copper	-
Iron	216
Lead	-
Manganese	303
Mercury	-
Nickel	-
pH	688
Selenium	3
Sulfate	31
Thallium	-
Total Dissolved Solids	27
Total Radium	9
Vanadium	-
Zinc	-
Exceedances Total	1,280

Notes:

*Data compiled from DEC supplemental response to Public Staff Data Request No. 2-18, dated December 9, 2019.

Groundwater Quality- Final Audit Reports

<u>Generating Station</u>	<u>Constituent(s) Observed to Exceed the 2L or the IMAC Standards One or More Times</u>		<u>Constituent(s) Observed to Exceed the 2L Standards, IMAC, or PBTv One or More Times</u>	
	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Allen	OLOI- Boron, iron, and manganese	Boron and manganese OLOI- Chromium, cobalt, iron, and vanadium	Beryllium, boron, cadmium, chromium, cobalt, iron, manganese, molybdenum, nickel, pH, selenium, strontium, sulfate, thallium, and TDS	Antimony, arsenic, beryllium, boron, cadmium, chromium, cobalt, iron, manganese, nickel, pH, selenium, sulfate, thallium, TDS, vanadium, and zinc
Belews Creek	Sulfate and total dissolved solids (TDS) OLOI- Antimony, arsenic, boron, cadmium, chromium, cobalt, iron, manganese, nitrate, pH, TDS, and vanadium	Boron, chloride, cobalt, iron, manganese, nitrate, pH, sulfate and TDS OLOI- Antimony, arsenic, beryllium, chromium, selenium, thallium, and vanadium	Antimony, beryllium, boron, cadmium, chloride, cobalt, chromium, iron, manganese, selenium, sulfate, thallium, TDS, and vanadium	Beryllium, boron, chloride, cobalt, chromium, iron, manganese, selenium, thallium, and TDS Additional groundwater impacts near the Structural Fill
Buck	OLOI- Chromium, iron, manganese, sulfate, and vanadium	Boron, cobalt, iron, manganese, sulfate, and TDS OLOI- Antimony and vanadium	Boron, cobalt, iron, manganese, sulfate, and TDS OLOI- Antimony, pH, and vanadium	Boron, cobalt, iron, manganese, sulfate, and TDS

Groundwater Quality- Final Audit Reports

<u>Generating Station</u>	<u>Constituent(s) Observed to Exceed the 2L or the IMAC Standards One or More Times</u>		<u>Constituent(s) Observed to Exceed the 2L Standards, IMAC, or PBTv One or More Times</u>	
	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Cliffside	OLOI- Chromium, iron, manganese, sulfate, and TDS	Antimony, arsenic, chromium, iron, manganese, sulfate, and TDS OLOI- Chromium, iron, manganese, and pH	Arsenic, boron, chromium, cobalt, iron, manganese, strontium, sulfate, thallium, TDS, and vanadium OLOI- Chromium, iron, manganese, and pH	Arsenic, beryllium, boron, chromium, cobalt, iron, manganese, sulfate, thallium, TDS, combined radium 226/228 and vanadium OLOI- Chromium, iron, manganese, and pH
Dan River	Boron, chromium, iron, manganese, sulfate, and TDS	Manganese	Boron, cobalt, iron, manganese, molybdenum, nickel, strontium, sulfate, TDS, and vanadium	Boron, beryllium, cobalt, iron, manganese, molybdenum, strontium, sulfate, TDS, and vanadium
Marshall	Boron and sulfate OLOI- Other constituents	Boron, cobalt, iron, and manganese OLOI- Chromium and vanadium	Boron, cobalt, iron, manganese, molybdenum, pH, strontium, sulfate, TDS, and vanadium	Boron, cobalt, iron, manganese, pH, sulfate, TDS, and vanadium

Groundwater Quality- Final Audit Reports

<u>Generating Station</u>	<u>Constituent(s) Observed to Exceed the 2L or the IMAC Standards One or More Times</u>		<u>Constituent(s) Observed to Exceed the 2L Standards, IMAC, or PBTv One or More Times</u>	
	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Riverbend	OLOI- Sulfate and TDS	Cobalt, iron, manganese, sulfate, and TDS OLOI- Antimony, chromium, and vanadium	Beryllium, chromium, cobalt, iron, manganese, strontium, sulfate, TDS, and vanadium	Beryllium, chromium, cobalt, iron, manganese, strontium, TDS, and vanadium
WS Lee	No findings	No findings	No findings OLOI- Combined radium 226/228	Beryllium OLOI- Antimony

OLOI- Open Line of Inquiry

Source: <https://www.duke-energy.com/our-company/environment/compliance-and-reporting/environmental-compliance-plans>

Seeps- Final Audit Reports

<u>Generating Station</u>	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Allen	9 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 2 other areas of wetness (AOW)	9 unauthorized seeps Outfalls, including these seeps, are proposed in the draft NPDES permit	4 unauthorized seeps containing CCR pollutants discharged via constructed features into waters of the US NPDES permit pending	No findings presented related to seeps SOC dated 4/25/18 covers non-constructed seeps NPDES permit effective 8/1/2018 includes constructed seeps
Belews Creek	5 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 10 other AOW	7 unauthorized seeps Outfalls, including these seeps, are proposed in the pre-draft fact sheet for NPDES permit	6 unauthorized seeps containing CCR pollutants discharged into waters of the US NPDES permit pending	No findings presented related to seeps SOC dated 7/12/18 covers non-constructed seeps NPDES permit effective 3/25/19 includes toe drain
Buck	8 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 9 other AOW	7 seep outfalls are proposed in the pre-draft fact sheet for NPDES permit	8 unauthorized seeps containing CCR pollutants discharged into waters of the US NPDES permit pending	No findings presented related to seeps SOC dated 7/12/18 covers all seeps

Seeps- Final Audit Reports

<u>Generating Station</u>	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Buck cont'd.				NPDES permit effective 11/1/18 includes constructed seeps
Cliffside	15 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 20 other AOW	6 unauthorized seeps Outfalls, including these seeps, are proposed in the draft NPDES permit	4 unauthorized seeps containing CCR pollutants discharged into waters of the US NPDES permit pending	No findings presented related to seeps SOC dated 4/18/18 covers non-constructed seeps NPDES permit effective 9/1/18 includes constructed seeps
Dan River	11* unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 3 other AOW	No findings presented related to seeps	No findings presented related to seeps	No findings presented related to seeps
Marshall	2 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state	No findings presented related to seeps	No findings presented related to seeps	No findings presented related to seeps SOC dated 4/25/18 covers non-constructed seeps

Seeps- Final Audit Reports

<u>Generating Station</u>	2016 Final Audit Report Findings	2017 Final Audit Report Findings	2018 Final Audit Report Findings	2019 Final Audit Report Findings
Riverbend	7 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 15 other AOW	No findings presented related to seeps	No findings presented related to seeps	No findings presented related to seeps
WS Lee	No findings Open items and potential findings- 16 areas of seepage, including toe drains, likely containing pollutants	No findings or OLOIs identified during the site visit	No findings or OLOIs identified during the site visit	NPDES permit effective 5/1/2017 includes constructed seeps

*Duke Energy personnel indicated to the Audit Team that they considered 7 of the identified seeps to be an extension of seep S-1.

OLOI- Open Line of Inquiry

Source: <https://www.duke-energy.com/our-company/environment/compliance-and-reporting/environmental-compliance-plans>

Station	Well Type	Number of SSI for Appendix III Parameters CCR Rule 40 CFR 257.95 (d)(1)							Total Number of SSIs
		pH	Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	
W.S. Lee Steam Station									
Primary & Secondary Ash Basins	Waste Boundary	35	44	24	13	17	48	27	208
	Characterization	4	4	3	3	3	8	3	28
Buck Steam Station									
Additional Primary Pond (Ash Basin 1)	Waste Boundary	17	47	39	51	8	52	42	256
	Characterization	4	5	18	17	---	23	17	84
Primary Pond (Ash Basin 2) / Secondary Pond (Ash Basin 3)	Waste Boundary	68	37	67	69	7	60	74	382
	Characterization	8	2	5	8	---	3	8	34
Dan River Combined Cycle Station									
Primary Ash Basin & Secondary Ash Basin	Waste Boundary	24	24	24	24	13	20	24	153
	Characterization	16	4	16	15	2	16	16	85
CCP Landfill	Waste Boundary	22	14	22	28	13	35	27	161
Allen Steam Station									
Active Ash Basin / Retired Ash Basin / Retired Ash Basin Landfill	Waste Boundary	61	92	58	102	13	114	87	527
	Characterization	36	17	24	26	8	45	34	190
Belews Creek Steam Station									
Active Ash Basin	Waste Boundary	12	46	62	59	14	51	59	303
	Characterization	4	15	37	30	6	9	20	121
Craig Road Landfill	Waste Boundary	20	---	21	18	18	30	20	127
	Characterization	w	---	3	3	---	4	3	13
FGD Landfill	Waste Boundary	1	1	32	43	5	30	34	146
	Characterization	---	---	7	8	1	5	6	27
Rogers Energy Complex (Cliffside Steam Station)									
Active Ash Basin	Waste Boundary	41	61	65	67	19	55	64	372
	Characterization	26	25	36	33	2	18	36	176
CCP Landfill	Waste Boundary	53	2	57	17	11	37	52	229
	Characterization	6	---	6	3	6	6	6	33
Inactive Units 1-4 Basin	Waste Boundary	10	18	19	19	11	21	20	118
	Characterization	---	---	1	1	---	1	1	4
Inactive Unit 5 Basin	Waste Boundary	19	32	38	7	16	40	37	189
	Characterization	10	13	22	3	8	22	22	100
Marshall Steam Station									
Active Ash Basin / Industrial Landfill No. 1	Waste Boundary	37	57	64	61	37	58	65	379
	Characterization	5	26	28	25	9	26	28	147
Total									4,592

Prepared by: MRC Checked by: CMH

Notes

NA - Not applicable. No assessment monitoring necessary.

--- - No SSIs

Public Staff calculated fields.

Public Staff
Junis Exhibit 16

SUMMARY OF EXCEEDANCES OF GROUNDWATER PROTECTION STANDARDS BY CCR UNIT																		
Station	Well Type	Number of SSLs for Appendix IV Parameters - CCR Rule 257.95(d)(1)															Total number of SSLs per Well Type	Total Number of Exceedances Per Site
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium		
W.S. Lee Steam Station																		
Primary & Secondary Ash Basins	Waste Boundary	3	---	---	3	---	---	11	---	---	3	---	---	---	---	---	20	21
	Characterization	---	---	---	---	---	1	---	---	---	---	---	---	---	---	1		
Buck Steam Station																		
Additional Primary Pond (Ash Basin 1)	Waste Boundary	---	---	---	---	---	---	19	---	---	---	---	---	---	---	---	19	45
	Characterization	---	---	---	---	---	---	3	---	---	---	---	---	---	---	3		
Primary Pond (Ash Basin 2) / Secondary Pond (Ash Basin 3)	Waste Boundary	---	---	---	---	---	---	20	---	---	3	---	---	---	---	---	23	
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Dan River Steam Station																		
Primary Ash Basin & Secondary Ash Basin	Waste Boundary	---	7	---	---	---	---	1	---	---	7	---	---	---	---	---	15	15
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
CCP Landfill	Waste Boundary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Allen Steam Station																		
Active Ash Basin / Retired Ash Basin / Retired Ash Basin Landfill	Waste Boundary	---	3	---	6	4	---	36	---	---	9	---	---	---	6	---	64	94
	Characterization	---	3	---	3	3	1	14	3	---	1	---	---	2	---	---	30	
Belews Creek Steam Station																		
Active Ash Basin	Waste Boundary	---	7	---	5	---	---	31	---	---	15	1	---	---	---	10	69	98
	Characterization	---	---	---	6	---	---	5	---	---	---	---	---	---	---	---	11	
Craig Road Landfill	Waste Boundary	---	---	---	---	---	---	3	---	---	3	---	---	---	---	---	6	
	Characterization	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	1	
FGD Landfill	Waste Boundary	---	---	---	---	---	1	3	---	---	3	---	---	---	---	---	7	
	Characterization	---	---	---	1	---	---	3	---	---	---	---	---	---	---	---	4	
Rogers Energy Complex (Cliffside Steam Station)																		
Active Ash Basin	Waste Boundary	---	4	---	---	---	---	32	---	---	---	---	---	---	---	---	36	95
	Characterization	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	1	
CCP Landfill	Waste Boundary	---	---	---	---	---	---	3	---	---	1	---	---	---	---	---	4	
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	
Inactive Units 1-4 Basin	Waste Boundary	---	4	---	---	---	---	6	---	---	1	---	---	---	---	---	11	
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	1	
Inactive Unit 5 Basin	Waste Boundary	---	---	---	5	---	---	18	---	---	---	---	---	---	3	3	29	
	Characterization	---	---	---	---	---	---	12	---	---	---	---	---	---	---	1	13	
Marshall Steam Station																		
Active Ash Basin / Industrial Landfill No. 1	Waste Boundary	---	3	1	2	---	---	26	---	---	6	---	---	---	3	15	56	70
	Characterization	---	---	---	2	---	---	7	---	---	---	---	---	---	---	5	14	

Total 438

Prepared by: MRC Checked by: ENK

Notes:

NA - Not applicable. No assessment monitoring necessary due to Alternate Source Demonstration.

--- - No SSLs

Public Staff calculated fields.

DEC Data Request #2

10. Please provide the month and year when groundwater monitoring was first required for each CCR location (e.g., lay of land area, cinder pile, impoundment, and landfill). Please also state the source of the requirement (e.g., NPDES permit, solid waste permit, special consent order, or other).

(1) SMEs: Ryan Czop (Engineer III), Tyler Hardin (Engineer III), Melonie Martin (Sr. Env. Specialist), Bristol Grohol (Engineer II)

(2) Bryson Allison (Engineer III)

Station	Ash Basin	Month/Year GW Monitoring First Required	Source of Requirement
Allen	Active Ash Basin	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Allen	Inactive Ash Basin (Retired Ash Basin)	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Allen	Ash Fill 1	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Allen	Ash Fill 2	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Allen	Subgrade for Landfill	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Allen	RAB Landfill	January 2011 NPDES Permit NC0004979, Condition A (13)	NPDES permit
Belews Creek	Ash Basin	October 2012 NPDES Permit NC0024406, Condition A (10)	NPDES permit
Belews Creek	Structural Fill	December 2016 Assessment Work Plan Approval	Coal Ash Management Act (CAMA)
Belews Creek	Pine Hall Rd. Landfill	August 1989 (first wells installed), permit to operate originally received in 1983	Not known
Belews Creek	Craig Road Landfill	November 2007 Permit to Operate	Solid Waste Permit to Operate
Belews Creek	Gypsum (FGD) Landfill	January 2008 Permit to Operate	Solid Waste Permit to Operate
Buck	Additional Primary Pond (Cell 1)	December 2011 NPDES Permit NC0004774, Condition A (17)	NPDES permit
Buck	Primary Pond (Cell 2)	December 2011 NPDES Permit NC0004774, Condition A (17)	NPDES permit
Buck	Secondary Pond (Cell 3)	December 2011 NPDES Permit NC0004774, Condition A (17)	NPDES permit
Buck	Ash fill area	December 2011 NPDES Permit NC0004774, Condition A (17)	NPDES permit
Cliffside	Active Ash Basin	January 2011 NPDES Permit NC0005088, Condition A (23)	NPDES permit
Cliffside	Units 1-4 Inactive Ash Basin	January 2011 NPDES Permit NC0005088, Condition A (23)	NPDES permit
Cliffside	Inactive Unit 5 Ash Basin	February 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Cliffside	Ash Storage 1	January 2011 NPDES Permit NC0005088, Condition A (23)	NPDES permit
Cliffside	CCP Landfill	September 2010 Permit to Operate	Solid Waste Permit to Operate
Dan River	Primary Ash Basin	October 1994 NPDES Permit NC0003468, Part III, Item B	NPDES permit
Dan River	Secondary Ash Basin	October 1994 NPDES Permit NC0003468, Part III, Item B	NPDES permit
Dan River	Ash Fill 1	February 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Dan River	Ash Fill 2	February 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Marshall	Ash Basin	October 1994 NPDES Permit NC0004987, Condition 1 (22)	NPDES permit
Marshall	Structural Fill (solar panels)	March 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Marshall	Subgrade fill (Cells 1&2)	March 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Marshall	Subgrade fill (Cells 3&4)	March 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
Marshall	Old Ash Fill (part of retired landfill)	December 1987 (first sample collected August 1989), permit to operate originally received in 1983	Letter from North Carolina Department of Human Resources - required approved groundwater-monitoring plan prior to approving landfill expansion
Marshall	Retired Landfill (permit 18-04)	December 1987 (first sample collected August 1989), permit to operate originally received in 1984	Letter from North Carolina Department of Human Resources - required approved groundwater-monitoring plan prior to approving landfill expansion
Marshall	Industrial Landfill (Permit 18-12)	October 2015 Federal CCR Rule	CCR Rule
Marshall	FGD Landfill (permit 18-09)	November 2006 Permit to Operate	Solid Waste Permit to Operate
Riverbend	Primary Ash Basin	January 2011 NPDES Permit NC0004961, Condition A (11)	NPDES permit
Riverbend	Secondary Ash Basin	January 2011 NPDES Permit NC0004961, Condition A (11)	NPDES permit
Riverbend	Ash fill area	January 2011 NPDES Permit NC0004961, Condition A (11)	NPDES permit
Riverbend	Cinder Pit	February 2015 NCDEQ Letter - Conditional Approval of Revised GW Assessment Work Plan	Coal Ash Management Act (CAMA)
WS Lee	Primary Ash Basin	1992 NPDES Permit SC0002291, Special Condition 12	NPDES permit
WS Lee	Secondary Ash Basin	1992 NPDES Permit SC0002291, Special Condition 12	NPDES permit
WS Lee	Ash Fill Area (Old ash fill area)	April 2018 Approval of Assessment Work Plan per Consent Agreement 14-13-HW	Consent Agreement
WS Lee	1951/1959 Inactive Ash Basin	April 2018 Approval of Assessment Work Plan per Consent Agreement 14-13-HW	Consent Agreement
WS Lee	Structural Fill	1992 NPDES Permit SC0002291, Special Condition 12	NPDES permit

Public Staff
Junis Exhibit 18

DEC response to Public Staff Data Request No. 189-1 on February 11, 2020.

Please state how many groundwater monitoring wells the Company had in place cumulatively prior to 1980, 1990, 2000, 2010, 2013, 2014, 2015, 2016, 2017, and 2018 and how many are in place today. Please provide this data for each generating plant site separately.

Site	Prior to 1980	1990			2000			2010			2013			2014		
		New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative
Allen	0	0	0	0	0	0	0	9	0	9	12	0	21	1	0	22
Belews Creek	0	2	0	2	0	0	2	51	3	50	96	0	146	0	0	146
Buck	0	0	0	0	0	0	0	12	0	12	39	0	51	0	0	51
Cliffside	0	0	0	0	12	0	12	11	0	23	16	0	39	0	0	39
Dan River	0	0	0	0	4	0	4	4	0	8	5	0	13	0	0	13
Marshall	0	5	0	5	0	0	5	23	0	28	12	0	40	0	0	40
Riverbend	0	0	0	0	0	0	0	14	0	14	12	0	26	0	0	26
WS Lee	0	0	0	0	0	0	0	9	0	9	0	0	9	0	0	9
Total	-	7	-	7	16	-	23	133	3	153	192	-	345	1	-	346

Dates Unknown Wells		
New	Abandoned	Cumulative
32	23	225
48	15	410
4	5	197
3	5	364
74	6	136
0	0	167
0	16	99
5	0	82
166	70	1,680

Wells with unknown well completion or abandonment dates are included here.

Site	2015			2016			2017			2018			In Place Today (2019)		
	New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative	New	Abandoned	Cumulative
Allen	80	0	102	67	0	169	17	5	181	33	0	214	2	0	216
Belews Creek	72	2	216	121	0	337	22	16	343	8	0	351	31	5	377
Buck	65	0	116	70	0	186	17	7	196	5	3	198	0	0	198
Cliffside	139	9	169	97	7	259	37	8	288	27	6	309	60	3	366
Dan River	66	33	46	25	25	46	33	21	58	48	38	68	0	0	68
Marshall	83	0	123	0	3	120	13	7	126	30	13	143	29	5	167
Riverbend	81	7	100	17	0	117	9	10	116	10	8	118	2	5	115
WS Lee	29	1	37	13	1	49	1	1	49	30	2	77	0	0	77
Total	615	52	909	410	36	1,283	149	75	1,357	191	70	1,478	124	18	1,584

PS calculated fields.

Public Staff
Junis Exhibit 19

Docket No. E-7, Sub 1214

CONFIDENTIAL

Docket No. E-7, Sub 1214

Plant	Project Identifier / Name	Total Actual Spend / Forecasted Spend	Explanation of Why project was necessary
Allen	DRY BOTTOM ASH CONVERSION	\$ 68,655,693	Allen ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Allen wet bottom ash system be converted to a "dry" system to collect and handle the bottom ash.
Allen	Enhanced FGD Wastewater Treatment	\$ 9,877,501	Allen Steam Station will be closing the ash basin that currently accepts FGD waste water treatment effluent. This project will upgrade the existing scrubber wastewater treatment plant to meet the ELG effluent guidelines. The new system will allow Allen Station to be in compliance with the ELG, CAMA, and CCR Rules.
Allen	Storm Water/Process Water Reroute	\$ 29,151,686	Allen ash basin to be closed and retired. To accomplish this all the ash basin inflow streams must be eliminated. This requires that the Allen storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged. The lined retention basin is being implemented under a separate funding project.
Allen	Lined Retention Basin	\$ 39,367,658	Allen ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Allen storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged.
Belews Creek	Alternate Start-up Dry Fly Ash System	\$ 8,788,900	Belews Creek ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the existing Fly Ash Hydro-Conveyor system be removed from service. As a result of the removal of the Hydro-Conveyor system several single points of failure are created within the existing remaining system that must be addressed to provide redundancy and reliability to the station.

Docket No. E-7, Sub 1214

Plant	Project Identifier / Name	Total Actual Spend / Forecasted Spend	Explanation of Why project was necessary
Belews Creek	Enhanced FGD Wastewater Treatment	\$ 9,147,141	Belews Creek Steam Station will be closing the ash basin that currently accepts FGD waste water treatment effluent. This project will add an Ultra Filtration system to the existing FGD scrubber wastewater treatment plant to meet Effluent Limitation Guidelines issued by the EPA. The addition of the Ultra Filtration system will produce an effluent that will be in compliance with ELG, CAMA, and CCR Rules.
Belews Creek	BC Dry Bottom Ash Conversion	\$ 68,414,823	Belews Creek ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Belews Creek wet bottom ash system be converted to a "dry" system to collect and handle the bottom ash.
Belews Creek	CCP Storm Water/Process Water Reroute	\$ 26,234,554	Belews Creek ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Belews Creek storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged.
Belews Creek	CCP Lined Retention Basin	\$ 34,738,535	Belews Creek ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Belews Creek storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged. A separate project is in progress to convert the bottom ash system to a dry process eliminating the inflow to the ash basin.

Docket No. E-7, Sub 1214

Plant	Project Identifier / Name	Total Actual Spend / Forecasted Spend	Explanation of Why project was necessary
Buck	CCP Process Water Reroute	\$ 1,478,579	Buck ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Buck Combined Cycle CT process water inflows be intercepted and routed to a new permitted outfall. On March 12, 2014, Lynn Good (Chief Executive Office) sent a letter to Pat McCorry (Governor, North Carolina) committing to dewater the ash basin within 24-36 months upon receipt of permits.
Cliffside	U5 Bottom Ash Conveying Sys.	\$ 12,883,460	Cliffside ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Cliffside Unit # 5 wet bottom ash system be converted to a "dry" system to collect and handle the bottom ash.
Cliffside	CS Unit 5 Dry Flyash Conversion	\$ 804,601	Cliffside ash basin inflow streams must be eliminated and the fly ash produced must be handled using a "dry" system. Currently Cliffside #5 operates with a flyash collection system that utilizes a pressurized piping and water sluicing system to transport the flyash to the ash basin. The existing pressure piping, hydroveyors and sluice tanks will be removed.
Cliffside	CCP CS #6 Air Heater Flyash System	\$ 1,525,627	Currently the Cliffside Unit #6 Air Preheater ash is collected and wet sluiced into the Unit #6 Submerged Flight Conveyor (SFC). Any overflow from the SFC flows into the Process Water Discharge System. The Effluent Limitation Guidelines (ELG) prohibit the discharge of sluicing water into the Process Water Treatment & Discharge system. To be in compliance with the ELG regulations, the air preheater ash must be collected dry and transported to the ash silo.
Cliffside	Storm Water/Process Water Reroute	\$ 23,741,245	Cliffside ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Cliffside storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged.

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Plant	Project Identifier / Name	Total Actual Spend / Forecasted Spend	Explanation of Why project was necessary
Cliffside	Active Waste Water Treatment System	\$ 62,559,961	Cliffside ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Cliffside storm water and process water inflows be intercepted and routed to a new waste water treatment system for treatment before they are discharged.
Cliffside	Lined Retention Basins	\$ 14,325,012	Cliffside ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Cliffside storm water and process water inflows be intercepted and routed to a new lined retention basin. All the collected water will be treated in the Active Waste Water Treatment system prior to being discharged. The Active Waste Water Treatment system is being implemented under a separate funding package
W. S. Lee	Waste Water Treatment	\$ 19,125,923	WS Lee ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the WS Lee storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged.
Marshall	MAR Enhncd. FGD Wastewater Treat.	\$ 84,950,281	The Flue gas Desulfurization (FGD) Waste Water Treatment System (WWT) is driven by the following regulatory requirements: The Environmental Protection Agency (EPA) Coal Combustion residuals (CCR) Rule which requires the closure of the ash basin; The New Effluent Limitation Guidelines (ELG) Rule has more stringent technology based limitations. To allow closure of the ash basin and comply with the ELG requirements, treatment of the FGD waste stream will be required at Marshall. The FGD waste stream will be treated in the new system prior to being discharged.

Docket No. E-7, Sub 1214

Plant	Project Identifier / Name	Total Actual Spend / Forecasted Spend	Explanation of Why project was necessary
Marshall	Storm Water/Process Water Reroute	\$ 50,251,602	Marshall ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Marshall storm water and process water inflows be intercepted and routed to new holding basin and lined retention basin for treatment before they are discharged
Marshall	Lined Retention Basin	\$ 35,478,830	Marshall ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Marshall storm water and process water inflows be intercepted and routed to a new lined retention basin for treatment before they are discharged.
Marshall	CCP - Dry Bottom Ash Haul road construction	\$ 744,925	Marshall ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Marshall wet bottom ash system be converted to a "dry" system to collect and handle the bottom ash.
Marshall	MS Dry Bottom Ash System Conversion	\$ 81,039,867	Marshall ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Marshall wet bottom ash system be converted to a "dry" system to collect and handle the bottom ash.
Marshall	CCP - Marshall Dry Fly Ash Reliability	\$ 10,418,504	Marshall ash basin to be closed and retired. To accomplish this all ash basin inflow streams must be eliminated. This requires that the Marshall hydro-conveying system for fly ash collection & transportation be eliminated. Marshall has been converted to a dry fly ash collection and transportation system. However, the existing wet fly ash collection system has been maintained to serve as a back-up to be used when the dry system is out of service for repairs or maintenance. With the removal of the wet system, the DFA system must be able to operate and transfer all flyash produced to maintain unit reliability.
TOTAL		\$ 693,704,907	