

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1219

In the Matter of
Application of Duke Energy Progress,
LLC, for Adjustment of Rates and
Charges Applicable to Electric Utility
Service in North Carolina

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EXHIBITS 4-24 TO THE
TESTIMONY OF
JAY B. LUCAS
PUBLIC STAFF – NORTH
CAROLINA UTILITIES
COMMISSION

Public Staff Data Request No. 2

Question 1

Please list all locations where the Company has disposed of CCR, including both original locations, and where applicable, new or relocation sites if CCR has been moved from its original location. For each location provide:

Duke Energy Progress

Site	Physical address	Nomenclature to identify CCR storage area	Years during which CCR storage area was in operation (receiving or storing CCR)	Amount of CCR disposed of cumulatively (tons)	Amount of CCR disposed of cumulatively (cubic yards)	CCR Disposed Annually (tons)			CCR Disposed Annually (cubic yards)			A description of the engineering features and construction of the storage areas including storage volume							
						2017 (may - dec for LFs)	2018	2019 (through 7/31/19)	2017 (may - dec)	2018	2019 (through 7/31/19)	Initial Construction	Expansion dates	Capacity (tons)	Capacity (cubic yards)	Liner			
		Facility Type	Facility Name																
Asheville	220 CP&L Drive Arden, NC 28704	Pond	1964 Ash Pond	1964 -	3,164,092	2,636,743	(487,135)	(724,884)	(438,311)	(405,946)	(604,070)	(365,259)	1964	1971	N/A	N/A	None		
		Pond	1982 Ash Pond (Closed)	1982 - 2017	3,700,000	3,083,333	-	-	-	-	-	-	1981	-	N/A	N/A	None		
Cape Fear	500 C P & L Road Moncure, NC 27559	Pond	1956 Ash Basin	1956 - 1963	420,000	350,000	-	-	-	-	-	-	1956	-	N/A	N/A	None		
		Pond	1963 Ash Basin	1963 - 1978	860,000	716,667	-	-	-	-	-	-	1963	1970	N/A	N/A	None		
		Pond	1970 Ash Basin	1970 - 1978	840,000	700,000	-	-	-	-	-	-	1970	-	N/A	N/A	None		
		Pond	1978 Ash Basin	1978 - 1985	830,000	691,667	-	-	-	-	-	-	1978	-	N/A	N/A	None		
		Pond	1985 Ash Basin	1985 - 2012	2,820,000	2,350,000	-	-	-	-	-	-	1985	-	N/A	N/A	None		
HF Lee	1199 Blackjack Church Rd Goldsboro, NC 27530	Pond	Inactive Ash Basin 1	1951 - 1962	270,000	225,000	-	-	-	-	-	-	1951	-	N/A	N/A	None		
		Pond	Inactive Ash Basin 2	1955 - 1962	530,000	441,667	-	-	-	-	-	-	1955	1970	N/A	N/A	None		
		Pond	Inactive Ash Basin 3	1962 - 1980	910,000	758,333	-	-	-	-	-	-	1962	-	N/A	N/A	None		
		Pond	1982 (a.k.a. Active) Ash Basin	1980 - 2012	4,520,000	3,766,667	-	-	-	-	-	-	1980	-	N/A	N/A	None		
		Pond	Polishing Pond	1980 - 2012	10,000	8,333	-	-	-	-	-	-	1980	-	N/A	N/A	None		
		Fill	LOLA	Intermittent Early 50's		99,000	82,500	-	-	-	-	-	-	Unknown	-	N/A	N/A	None	
Mayo	10660 Boston Rd Roxboro, NC 27574	Pond	Ash Basin	1983 - 2019	6,600,000	5,500,000	-	-	-	-	-	-	-	-	-	-	None		
		Pond	FGD Flush Pond	2009 - 2019	see notes	see notes	-	-	-	-	-	-	2008	-	-	-	Geocomposite, HDPE		
		Pond	FGD Settling Pond	2009 - 2019	see notes	see notes	-	-	-	-	-	-	2008	-	-	-	Geocomposite, HDPE		
		Pond	FGD Settling Basin (Wastewater Treatment)	2019 - present	see notes	see notes	-	-	-	-	-	-	2017	-	-	-	GCL, HDPE		
Landfill	Monofill (Phase 1)	2014 - present	457,134	380,945	54,093	89,669	51,352	33,808	56,043	32,095	2012	-	2,538,021	1,586,263	GCL, HDPE, Geocomposite, HDPE, Geocomposite				
Weatherspoon	491 Power Plant Road Lumberton, NC 28358	Pond	1979 Ash Pond	1955 - 2011	2,450,000	2,041,667	(69,732)	(241,095)	(163,205)	(58,110)	(200,913)	(136,004)	1955	1968, 1979, 2001	N/A	N/A	None		
Roxboro	1700 Dunnaway Road Semora, NC 27343	Pond	West Ash Pond & FGD Wastewater Ponds	1973 -	12,974,500	10,812,083	48,075	97,529	-	40,063	81,274	-	1973	1986, 2008	N/A	N/A	None		
		Pond	East Ash Pond (includes ash stack)	1966 - 1986	7,073,881	5,894,901	-	-	-	-	-	-	1965	1973	N/A	N/A	None		
		Fill	Unlined Monofill and Subgrade Fill	1988 - 2003	7,635,600	6,363,000	-	-	-	-	-	-	1988	-	N/A	N/A	None		
		Landfill	Lined Monofill	2003 -	6,818,990	5,682,492	221,104	177,374	190,170	138,190	110,859	118,856	2002	2004, 2006, 2007, 2011, 2015, 2016	15,059,200	9,412,000	LLDPE		
Fill	Ash Fill for Gypsum Pad	2006 - 2007	157,200	131,000	-	-	-	-	-	-	2006	-	N/A	N/A	None				
Sutton	801 Sutton Steam Plant Rd Wilmington, NC 28401	Pond	1971 Ash Basin (excavation complete)	1971 - 2014	3,820,800	3,184,000	(618,118)	(948,252)	(892,751)	(515,098)	(790,210)	(743,959)	1971	1983	N/A	N/A	none		
		Pond	1984 Ash Basin (excavation complete)	1984 - 2013	2,834,400	2,362,000	(1,198,878)	(719,189)	(1,031,678)	(999,065)	(599,324)	(859,732)	1984	-	N/A	N/A	compacted clay soil		
		Landfill	Sutton CCR Landfill	2017 -	4,319,527	3,599,606	not available	1,275,870	1,932,370	not available	797,419	1,207,731	2016	-	7,912,304	4,945,190	GCL, HDPE, Geocomposite, HDPE, Geocomposite		
Fill	LOLA	1954 - 1971	686,400	572,000	-	-	(67,985)	-	-	(56,654)	-	-	-	N/A	N/A	none			
Robinson	3581 West Entrance Drive Hartsville, SC 29550	Pond	Ash Basin	1975 - 2012	2,904,000	2,420,000	-	-	-	-	-	-	1960	1982, 2002	N/A	N/A	None		
		Fill	1960 Fill Area	1960 - (c)1974	331,200	276,000	-	-	-	-	-	-	1978	-	N/A	N/A	None		

Notes: Negative quantities (e.g. (100,000)) reflect the quantity of ash excavated from a facility
 Typical CCR Ash conversions for tons per cyd used are 1.2
 *Years during which CCR storage area was in operation" is based upon the History of Construction documents found at <https://www.duke-energy.com/our-company/environment/compliance-and-reporting/ccr-rule-compliance-data>

Public Staff DR TBD

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
Roxboro 1	2008	N/A	2002	Original 1966 Upgraded 1995	Original mid-1980s	12/8/2018	2012	Use FGD Scrubber for compliance	Existing FGD Settling Pond & Bioreactor 2008
Roxboro 2	2007		2005	Original 1968 Upgraded 1997	Original mid-1980s Upgrade 05/03/2018	12/8/2018	2014	Use FGD Scrubber for compliance	Existing FGD Settling Pond & Bioreactor 2008
Roxboro 3	2008		2003	1973	Original mid-1980s Upgrade 11/28/18	12/8/2018	2015	Use FGD Scrubber for compliance	Existing FGD Settling Pond & Bioreactor 2008
Roxboro 4	2007		2001	Original 1980 Upgrade 2018	Original mid-1980s Upgrade 07/03/2017	12/8/2018	Original 2000/2001 Upgrade 2018	Use FGD Scrubber for compliance	Existing FGD Settling Pond & Bioreactor 2008
Mayo	2009		2004	1983	Original 2013 Upgrade 10/24/2016	Spring 2014	Original 1999 Upgrade 2013	Use FGD Scrubber for compliance	Thermal Evaporator (Vapor Compression Evaporator) - 2015/FGD Settling Pond & Bioreactor - 2009
Asheville 1	2005		2007	1970's	N/A	N/A	1998	N/A	2005
Asheville 2	2006		2006	1971			1998		2006

Retired Stations:

Station/Unit	Retired	FGD	SNCR	NOx Technology	Precipitators/Baghouse	Dry Ash Handling	Low Nox Burners	MATS Control Systems	FGD Waste Water Treatment
Cape Fear 3	1977	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cape Fear 4	1977			N/A					
Cape Fear 5	2012		2006	Rotating Opposed Fire Air - 2000	N/A	N/A	N/A		
Cape Fear 6	2012		2006	Rotating Opposed Fire Air - 2001	N/A	N/A	N/A		
Lee 1	2012		N/A	WIR, Russian NOx Reducing Technology - 1999	N/A	N/A	N/A		
Lee 2	2012		N/A	Rotating Opposed Fire Air - 2000	N/A	N/A	2006		
Lee 3	2012		2007	Rotamix - 2006	N/A	N/A	N/A		
Robinson 1	2012		N/A	N/A	N/A	N/A	2003		
Sutton 1	2013		N/A	N/A	N/A	N/A	N/A		
Sutton 2	2013		N/A	N/A	N/A	N/A	2006		
Sutton 3	2013		2005	Rotating Opposed Fire Air - 2005	N/A	N/A	2005		
Weatherspoon 1	2011		N/A	N/A	N/A	N/A	N/A		
Weatherspoon 2	2011		N/A	N/A	N/A	N/A	N/A		
Weatherspoon 3	2011		N/A	WIR, Russian NOx Reducing Technology - 2000	N/A	N/A	N/A		

Public Staff
Lucas Exhibit 5

**PUBLIC STAFF
LUCAS EXHIBIT 6**

**Duke Energy Progress
Response to
NC Public Staff Data Request
Data Request No. NCPS 2
Coal Ash Specific**

Docket No. E-2, Sub 1219

**Date of Request: October 3, 2019
Date of Response: October 30, 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 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-Coal Ash Specific
DEP Docket No. E-2, Sub 1219
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:

DEP 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 September 1, 2017 and February 29, 2020. Subject to and without waiving these objections, DEP will provide responsive information from September 1, 2017 through present.

Please see excel file (DEP NCPS 2-15 Seep Summary.xlsx) provided for response.



DEP NCPS 2-15
Seep Summary.xlsx

a. Since September 1, 2017, Duke Energy Progress has new NPDES permits for 5 active or retired North Carolina coal plants (Asheville, Cape Fear, HF Lee, Mayo and Weatherspoon). Each of these permits (except Cape Fear and HF Lee) identifies new outfalls permitting discharges from constructed seeps. Also during this period, DEP 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

North Carolina Public Staff

Data Request No. 2-Coal Ash Specific
DEP Docket No. E-2, Sub 1219
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Asheville, Roxboro, Mayo and H.F. Lee. 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. SOCs are currently in development for Cape Fear and Weatherspoon.

b. Duke Energy continues to maintain that seeps are not violations of NPDES permit requirements, for reasons previously stated. 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. 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 associated with a surface impoundment. In the process of developing the SOCs, 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 indicates which seeps have been dispositioned and the basis for dispositioning.

**Duke Energy Progress
Response to
NC Public Staff Data Request
Data Request No. NCPS 139**

Docket No. E-2, Sub 1219

Date of Request: March 2, 2020

Date of Response: March 13, 2020

CONFIDENTIAL

NOT CONFIDENTIAL

Confidential Responses are provided pursuant to Confidentiality Agreement

The attached response to NC Public Staff Data Request No. 139-1, 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 Progress

North Carolina Public Staff
Data Request No. 139
DEP Docket No. E-2, Sub 1219
Item No. 139-1
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Request:

1. Regarding the Company's response to Public Staff DR 2-15 that contains a number of pending items, please provide an update to the narrative response and attached Excel spreadsheet.



DEP NCPS 2-15
Seep Summary.xlsx

Response:

See updated seeps table below, in the excel file labeled 139-1.xlsx.

Response 2-15 a is updated to read: "Since September 1, 2017, Duke Energy Progress has new NPDES permits for 5 active or retired North Carolina coal plants (Asheville, Cape Fear, HF Lee, Mayo and Weatherspoon). Each of these permits (except Cape Fear and HF Lee) identifies new outfalls permitting discharges from constructed seeps. Also during this period, DEP 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 Asheville, Roxboro, Mayo, H.F. Lee, Cape Fear and Weatherspoon. 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." No other narrative updates are needed.



139_1.xlsx

DEP response to Public Staff Data Request 139-1, received on March 13, 2020.

DEP NCPS 2-15

Station	Seep ID	CCR Location	NPDES Permitted	SOC Covered	Constructed Seep	Year Identified	Status
Asheville	64EO-01	1964 Ash Basin	Yes		Yes	2014	
	64EO-02	1964 Ash Basin	Yes		Yes	2014	
	64EO-03	1964 Ash Basin	Yes		Yes	2014	
	A-01	1964 Ash Basin		Yes		2014	
	A-02	1964 Ash Basin		Yes		2014	
	B-01	1964 Ash Basin		Yes		2014	
	C-01	1964 Ash Basin		Yes		2014	
	C-02	1964 Ash Basin		Yes		2014	
	C-03	1964 Ash Basin		Yes		2014	
	C-05	1964 Ash Basin		Yes		2016	
	D-01	1964 Ash Basin		Yes		2014	
	E-01	1982 Excavated Basin		Yes		2014	
	F-01	1982 Excavated Basin		Yes		2014	
	F-02	1982 Excavated Basin		Yes		2014	
	F-03	1982 Excavated Basin		Yes		2014	
	K-01	1982 Excavated Basin		Yes		2014	
	K-02	1982 Excavated Basin		Yes		2014	Dispositioned in 2018 by SOC - No flow
	M-01	1982 Excavated Basin		Yes		2014	
	N-01	1964 Ash Basin		Yes		2014	
	P-01	1982 Excavated Basin		Yes		2014	Dispositioned in 2018 by SOC - No CCR impact
	Ponded Water F	1964 Ash Basin		Yes		2014	
	SD-01	1964 Ash Basin		Yes		2014	
	82EO-01	1982 Excavated Basin		Yes		2014	
82EO-02	1982 Excavated Basin		Yes		2014		
DD-Pipe	1964 Ash Basin		Yes		2018		
Cape Fear	S-01	1985 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-02	1985 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-03	1985 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-04	1985 Ash Basin		Yes		2014	
	S-05	1978 Ash Basin		Yes		2014	
	S-06	1978 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-07	1985 Ash Basin		Yes		2014	
	S-08	1985 Ash Basin		Yes		2014	
	S-09	1985 Ash Basin		Yes		2014	
	S-10	1985 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-11	1985 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-12	1978 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-13	1970 and 1978 Ash Basins		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-14	1970 Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No flow
	S-15	1963 Ash Basin		Yes		2014	
	S-16	1963 Ash Basin		Yes		2014	
	S-17	1963 Ash Basin		Yes		2014	
	S-18	1963 Ash Basin		Yes		2015	
	S-19	1963 Ash Basin		Yes		2017	
	S-20	1956 Ash Basin		Yes		2017	
	S-21	1956 Ash Basin		Yes		2017	
	S-22	1956 Ash Basin		Yes		2017	
	S-23	1985 Ash Basin		Yes		2017	Dispositioned in 2020 by SOC - No flow

Station	Seep ID	CCR Location	NPDES Permitted	SOC Covered	Constructed Seep	Year Identified	Status	
HF Lee	LOLA S-01	Lay of Land Area		Yes		2014		
	LOLA S-02	Lay of Land Area		Yes		2014		
	LOLA S-03	Lay of Land Area		Yes		2014		
	S-01	Active Ash Basin		Yes		2014		
	S-02	Active Ash Basin		Yes		2014		
	S-03	Active Ash Basin			Yes		2014	Dispositioned in 2019 by SOC - Not a seep
	S-03A	Active Ash Basin			Yes			Dispositioned in 2019 by SOC - Not a seep
	S-04	Active Ash Basin			Yes		2014	
	S-05	Active Ash Basin			Yes		2014	Dispositioned in 2019 by SOC - Seep repaired
	S-06	Active Ash Basin			Yes		2014	
	S-07	Active Ash Basin			Yes		2014	
	S-08	Active Ash Basin			Yes		2014	
	S-09	Active Ash Basin			Yes		2014	Dispositioned in 2019 by SOC - Not a seep
	S-18	Inactive Ash Basin			Yes		2014	
	S-19	Inactive Ash Basin			Yes		2014	Dispositioned in 2018 by SOC - No CCR impact
	S-20	Active Ash Basin			Yes		2014	Dispositioned in 2019 by SOC - Seep repaired
	S-21	Active Ash Basin			Yes		2014	Dispositioned in 2019 by SOC - No flow
	S-22	Active Ash Basin			Yes		2014	
	S-23	Active Ash Basin			Yes		2014	
	S-24	Active Ash Basin			Yes		2014	
	S-25	Active Ash Basin			Yes		2014	
	S-26	Active Ash Basin			Yes		2014	
	S-27	Active Ash Basin			Yes		2015	
	S-28	Active Ash Basin			Yes		2015	
	S-29	Inactive Ash Basin			Yes		2016	
	Mayo	S-01	Active Ash Basin		Yes	Yes	2014	
		S-01A	Active Ash Basin		Yes		2015	
		S-02	Active Ash Basin		Yes	Yes	2014	
		S-02A	Active Ash Basin		Yes		2014	
S-02B		Active Ash Basin		Yes		2014		
S-03		Active Ash Basin			Yes		2014	Dispositioned in 2018 by SOC - Not a seep
S-04		Active Ash Basin			Yes		2014	Dispositioned in 2018 by SOC - Not a seep
S-05		Active Ash Basin			Yes			Dispositioned in 2018 by SOC - Not a seep
S-06		N/A			Yes		2014	Dispositioned in 2018 by SOC - No CCR impact
S-07		N/A			Yes		2014	Dispositioned in 2018 by SOC - No CCR impact
S-08		Active Ash Basin			Yes		2014	
S-09	N/A			Yes		2015	Dispositioned in 2018 by SOC - No CCR impact	
S-10	Active Ash Basin			Yes		2016		
Robinson	S-01	Ash Basin	Yes		Yes	2015	Dispositioned in 2016, any flow is to NPDES permitted outfall	
	S-02	Ash Basin	Yes			2015	Dispositioned in 2016, any flow is to NPDES permitted outfall	
	S-03	Ash Basin	Yes			2015	Dispositioned in 2016, any flow is to NPDES permitted outfall	
	S-04	Ash Basin	Yes			2015	Dispositioned in 2016, any flow is to NPDES permitted outfall	

Station	Seep ID	CCR Location	NPDES Permitted	SOC Covered	Constructed Seep	Year Identified	Status
Roxboro	S-01	West Ash Basin	Yes		Yes	2014	
	S-02	West Ash Basin	Yes		Yes	2014	
	S-03	West Ash Basin	Yes		Yes	2014	
	S-04	West Ash Basin	Yes		Yes	2014	
	S-05	West Ash Basin	Yes		Yes	2014	
	S-06	West Ash Basin	Yes		Yes	2014	
	S-07	West Ash Basin	Yes		Yes	2014	
	S-08	West Ash Basin		Yes		2014	
	S-09	East Ash Basin	Yes		Yes	2014	
	S-10	East Ash Basin		Yes		2014	Dispositioned in 2018 by SOC - No flow
	S-11	East Ash Basin		Yes		2014	Dispositioned in 2018 by SOC - No flow
	S-12	East Ash Basin		Yes		2014	Dispositioned in 2018 by SOC - No flow
	S-13	East Ash Basin		Yes		2014	Dispositioned in 2018 by SOC - Not a seep
	S-14	Gypsum pile		Yes		2014	
S-18	West Ash Basin		Yes		2015		
S-19	West Ash Basin		Yes		2016		
S-20	West Ash Basin		Yes		2017		
S-21	East Ash Basin		Yes		2017		
S-22	East Ash Basin		Yes		2017		
S-23	East Ash Basin		Yes		2017		
Weatherspoon	S-01	Ash Basin		Yes		2014	
	S-02	Ash Basin		Yes		2014	
	S-03	Ash Basin		Yes		2014	
	S-04	Ash Basin		Yes		2014	Dispositioned via repair
	S-05	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - Not a seep
	S-06	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No CCR impact
	S-07	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No CCR impact
	S-08	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No CCR impact
	S-09	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - Not a seep
	S-10	Ash Basin		Yes		2014	
	S-11	Ash Basin	Yes		Yes	2014	
	S-12	Ash Basin	Yes		Yes	2014	
	S-13	Ash Basin	Yes		Yes	2014	
	S-14	Ash Basin	Yes		Yes	2014	
S-15	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - Not a seep	
S-16	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - Not a seep	
S-18	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No CCR impact	
S-22	Ash Basin		Yes		2014	Dispositioned in 2020 by SOC - No CCR impact	
S-23	Ash Basin		Yes		2016		
S-24	Ash Basin		Yes		2016		
S-25	Ash Basin	Yes		Yes	2018		
S-26	Ash Basin	Yes		Yes	2018		
S-27	Ash Basin	Yes		Yes	2018		

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF PERSON

IN THE MATTER OF)	
NORTH CAROLINA	)	SPECIAL ORDER BY CONSENT
NPDES PERMITS NC0038377 &)	
NC0003425	)	EMC SOC WQ S18-005
)	
HELD BY)	
DUKE ENERGY PROGRESS, 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 Progress, 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
Mayo	NC0038377	Person	07/13/2018	Mayo Reservoir
Roxboro	NC0003425	Person	04/09/2007	Hyc0 Reservoir

- 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 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 Mayo and Roxboro 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 \$150,000, calculated based upon \$12,000 each for ten constructed seeps identified prior to January 1, 2015 and \$6,000 each for five non-constructed seeps identified prior to January 1, 2015.

A certified check in the amount of \$150,000.00 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>
Mayo	Complete	Complete
Roxboro	Complete	5/31/2019

- 2) **Initiation of Decanting**

Mayo	6/30/2019
Roxboro	6/30/2019

- 3) **Completion of Decanting**

Mayo	12/31/2020
Roxboro	6/30/2020

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):

Document	Due Date
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.

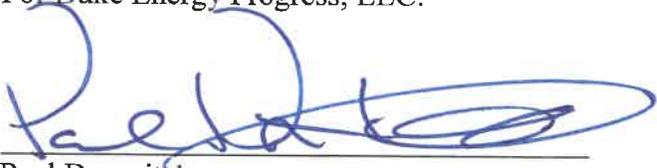
4. Duke Energy shall make available on its external website the NPDES permits, this Special Order and all reports required under this Special Order for each of the Duke Energy Facilities no later than thirty (30) days following their effective or submittal dates.
5. Duke Energy and the Commission agree 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 Mayo and Roxboro 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 NC0038377 and NC0003425.
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 Progress, LLC:

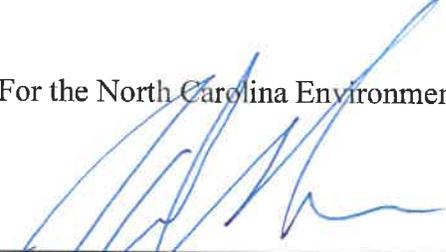


Paul Draovitch
Senior Vice President, Environmental, Health & Safety

8/10/18

Date

For the North Carolina Environmental Management Commission:



J. D. Solomon, P.E.
Chair of the Commission

8/15/2018

Date

Attachment A
S18-005

Duke Energy Progress, LLC – Mayo Steam Station, p.1

I/A

Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-01	36.538849	-78.893512	Seep flow from west toe drain	N/A – Flow is collected and pumped back to NPDES-permitted wastewater system in accordance with the pumping system’s design capacity.	N/A	N/A	N/A
S-02	36.537964	-78.891364	Seep flow from east toe drain	N/A – Flow is collected and pumped back to NPDES-permitted wastewater system in accordance with the pumping system’s design capacity.	N/A	N/A	N/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
S18-005

Duke Energy Progress, LLC – Mayo 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-01A	36.538903	-78.89351	Minor seep forming within filter bed at the toe of the west dam and flowing into an unnamed tributary (UT) to Crutchfield Branch	UT to Crutchfield Branch	B	Monitoring in Crutchfield Branch downstream of all seep flow contributions	N/A – 2B Standards Apply
S-02A	36.538005	-78.891611	Minor seep forming within filter bed 20 feet upslope of east dam toe drain (S-02) collection box, flowing into Crutchfield Branch.	Crutchfield Branch	B	Monitoring in Crutchfield Branch downstream of all seep flow contributions	N/A – 2B Standards Apply
S-02B	36.537989	-78.891339	Minor seep forming just downgrade of S-02 collection box, flowing into Crutchfield Branch.	Crutchfield Branch	B	Monitoring in Crutchfield Branch downstream of all seep flow contributions	N/A – 2B Standards Apply
S-03**	36.538654	-78.890714	Sampling Location; not a seep	Crutchfield Branch	B	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-04**	36.538896	-78.89341	Sampling Location; not a seep	Crutchfield Branch	B	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-05**	36.535039	-78.891693	Ash Basin Sampling Location; not a seep	Mayo Lake	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-06*	36.521971	-78.88526	Seep flow to small channel that originates southeast of power plant. Flows to Mayo Lake.	Mayo Lake	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
S18-005

Duke Energy Progress, LLC – Mayo 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*	36.521798	-78.892152	Intermittently observed area of wetness downslope from former production well location. No flow observed during recent evaluations. Any flow would drain southeast, merging with flow at S-06 before reaching Mayo Lake. From sampling – No CCR impacts.	Mayo Lake	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-08	36.537502	-78.890398	Seep forms one ridge over (east) from east toe drain, flowing northwest in small channel to Crutchfield Branch.	Crutchfield Branch	B	Monitoring in Crutchfield Branch downstream of all seep flow contributions	N/A – 2B Standards Apply
S-09*	36.522902	-78.886868	Natural stream flow to Mayo Lake originating southeast of plant. Location is upstream of, and flowing toward S-06. From sampling – No CCR impacts.	Mayo Lake	WS-V	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-10	36.538422	-78.890395	Minor seep to small channel, flowing northwest into Crutchfield Branch.	Crutchfield Branch	B	Monitoring in Crutchfield Branch downstream of all seep flow contributions	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.

Mayo Steam Electric Power Plant – Water Quality Monitoring Locations



★ Stream Monitoring

Attachment A
S18-005

Duke Energy Progress, LLC – Roxboro 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-01	36.47704	-79.0765	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-02	36.47706	-79.0767	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-03	36.47699	-79.077	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-04	36.47692	-79.0772	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	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.

Attachment A
S18-005

Duke Energy Progress, LLC – Roxboro Steam Station, p.2

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-05	36.47675	-79.0774	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-06	36.47669	-79.0776	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-07	36.47674	-79.078	Chimney drain discharge from active ash basin dam to Heated Water Discharge Pond.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-09	36.47823	-79.05607	Discharge from extension of East Ash Basin	Unnamed tributary (UT) to Hyco Lake	WS-V; B	N/A – Monitoring Established per Terms of NPDES Permit	See page 6 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
S18-005

Duke Energy Progress, LLC – Roxboro Steam Station, p.3

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-08	36.47672	-79.0781	Seepage area approximately 30 feet west of chimney drain #7. Drainage/flow is to the Heated Water Discharge Pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-10**	36.47917	-79.057	Minimal AOW with no flow located on northern portion of East Ash Basin berm. Any flow would drain to extension of east ash basin.	Extension of East Ash Basin	N/A – Not a Classified Surface Water	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-11**	36.47857	-79.0567	Minimal AOW with no flow located on central portion of East Ash Basin berm. Any flow would drain to extension of east ash basin.	Extension of East Ash Basin	N/A – Not a Classified Surface Water	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-12**	36.4781	-79.0567	Minimal AOW with no flow located on southern portion of East Ash Basin berm. Any flow would drain to extension of east ash basin.	Extension of East Ash Basin	N/A – Not a Classified Surface Water	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-13**	36.48618	-79.0596	Not a seep. Outfall of culvert channeling flow from UT on east side of facility that receives flow from East Ash Basin extension and S-21. Flows to facility water intake channel (Hycy Lake).	Hycy Lake	WS-V; B	See page 6 of this Attachment A	See page 6 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
S18-005

Duke Energy Progress, LLC – Roxboro Steam Station, p.4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-14	36.48374	-79.0638	Location is the end of a 24" pipe draining a boggy area south of the gypsum pad. Pipe extends under the pad toward the northwest, under railroad tracks, with discharge to a ditch that drains to the Heated Water Discharge Pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-18	36.47795	-79.0737	Seepage to wet area north of active ash basin. Flows north into a waterbody flowing to Heated Water Discharge Pond. Waterbody is potentially WOTUS. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Small stream flowing to Heated Water Discharge Pond	WS-V; B (Hycy Lake)	Quarterly monitoring at point prior to flowing into Heated Water Discharge Pond.	Hardness 1200 mg/L TDS 1600 mg/L Sulfates 1000 mg/L
S-19	36.47718	-79.0764	AOW with minimal flow located adjacent to the S-01 chimney drain at the east end of the 1973 ash basin dam. Any flow moves toward the Heated Water Discharge Pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-20	36.47799	-79.0749	Seep flow to small stream channel northeast of West Ash Basin dam. Drains west through wetland to Heated Water Discharge Pond. No sample data due to lack of flow. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Small stream flowing to Heated Water Discharge Pond	WS-V; B (Hycy Lake)	Quarterly monitoring at point prior to flowing into Heated Water Discharge Pond.	Hardness 1200 mg/L TDS 1600 mg/L Sulfates 1000 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

518-005

Duke Energy Progress, LLC – Roxboro Steam Station, p.5

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-21	36.48246	-79.0559	Seep emerging downgradient of stormwater basin below East Ash Basin. Flow drains adjacent to East Ash Basin effluent channel from point of emergence to UT to Hyco Lake.	UT to Hyco Lake	WS-V; B (Hyco Lake)	Monitoring of UT to Hyco Lake at established Duke Energy S-13 monitoring location	Sulfates 1000 mg/L Hardness 1000 mg/L TDS 1000 mg/L Copper 5 µg/L
S-22	36.48184	-79.0657	Located just east of the cooling tower ponds. Wetness emerges from several points on the hill side of the area. Minimal flow could eventually reach Outfall 003. No sample data to date due to lack of flow. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	N/A – Not a Classified Surface Water
S-23	36.48035	-79.0685	Located on sloped area along the southwest end of the East Ash Basin dam. Large AOW but with little to no flow. Diffuse flow is directed to channel with discharge to Heated Water Discharge Pond and Outfall 003. No sample data to date due to lack of flow. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Heated Water Discharge Pond flowing to NPDES permit outfall 003	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	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.

Attachment A
S18-005

Duke Energy Progress, LLC – Roxboro Steam Station, p.6

Instream Monitoring

Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
Instream Monitoring to evaluate potential impacts from S-9 and S-21	Unnamed Tributary (UT) to Hyco Lake	WS-V; B	Monitoring of UT to Hyco Lake at established Duke Energy S-13 monitoring location	Sulfates 1000 mg/L Hardness 1000 mg/L TDS 1000 mg/L Copper 5 µg/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.

Roxboro Steam Electric Plant – Water Quality Monitoring Locations

I/A



★ Stream Monitoring

★ Stream Monitoring

SOC S18-005
 Duke Energy Progress, LLC – Mayo & Roxboro Plants
 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

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF WAYNE

IN THE MATTER OF)	
NORTH CAROLINA	)	SPECIAL ORDER BY CONSENT
NPDES PERMIT NC0003417)	
	)	EMC SOC WQ S18-006
HELD BY)	
DUKE ENERGY PROGRESS, 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 Progress, 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 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.

Both decanting and dewatering of the H. F. Lee Facility's coal ash basins will be required before the ash basins can be closed. Decanting (i.e., removal of the free water on the surface of the coal ash basin), has already been observed to affect existing seeps at Duke Energy's H. F. Lee Facility. Removal of remaining coal ash wastewater through continued decanting and dewatering (i.e. removal of sufficient interstitial water) 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 subparagraph g below), while Duke Energy completes activities associated with closure of the ash basins at the H. F. Lee Facility. After completion of those activities, for any remaining seeps, Duke Energy must take appropriate corrective action as specified more fully below.

- b. Duke Energy has been issued a North Carolina NPDES permit for operation of an existing wastewater treatment works at the following electric generation facility (the "H. F. Lee Facility"):

Facility	Permit Number	County	Issuance Date	Receiving Water for Primary Outfall
H. F. Lee	NC0003417	Wayne	07/23/2010	Neuse River

- c. The H. F. Lee Facility listed above has ceased coal fired generation and now consists of a 3 x 1 combined cycle unit capable of being fired on natural gas or oil, and five simple cycle combustion turbines. The facility's coal ash basins still exist, and are subject to the provisions of this Special Order.
- d. The H. F. Lee Facility also has a permitted wastewater cooling pond that was used during coal-fired operations, and continues to be used for the combined cycle plant. Several areas of minor seep flow from the cooling pond to the Neuse River have been observed. Chemical testing of the cooling pond seeps has revealed some contain minor concentrations of coal combustion residuals (CCR). The cooling pond seeps listed in Attachment A are also addressed by this Special Order.
- e. 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.

- f. The coal ash basins and the cooling pond at the H. F. Lee Facility 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. The H. F. Lee Facility exhibits locations adjacent to, but beyond the confines of, the coal ash basins and the cooling pond where seepage of wastewater from those 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 H. F. Lee Facility 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.
- g. 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.” Non-constructed seeps at the H. F. Lee Facility 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 H. F. Lee Facility 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 H. F. Lee Facility, 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 \$72,000, calculated based upon \$6,000 each for twelve non-constructed seeps identified prior to January 1, 2015.

A certified check in the amount of \$72,000.00 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.

¹ See especially paragraph 2(a)(2) excepting newly identified seeps from future penalties under certain conditions.

- 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 and c), 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, by the deadline set forth herein, adequate amendments to groundwater Corrective Action Plans or Closure Plans to address all remaining seeps, through corrective action as applicable under paragraph 2(b)(7) of this Special Order. ²	\$5,000.00 per day, to a maximum of \$1,000,000.00.

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.

² Failure to adequately implement any amended Corrective Action Plan or Closure Plan will be handled in the normal course.

Duke Energy is required to comply with the requirements of G.S. § 130A-309.216. Duke Energy has announced plans to construct an ash beneficiation plant at the H. F. Lee Facility capable of processing 300,000 tons of CCR material per year.

- 1) The Coal Ash Management Act (G.S. § 130A-309.210) required the cessation of CCR wastewater placement into the basins at the H. F. Lee Facility by October 1, 2014. Duke Energy commenced decanting in April 2016. Decanting will be completed by March 31, 2019.
- 2) Dewatering will be required in order to excavate the ash for the purpose of beneficiation. Duke Energy will begin the process of removal of interstitial water from the H. F. Lee Facility no later than July 31, 2019 and will continue as needed to support the beneficiation plant described above.
- 3) Once the dewatering process is initiated, within (30) days after the end of each quarter, Duke Energy shall provide reports on the status of dewatering work and other activities undertaken with respect to excavation of each coal ash surface impoundment to DWR. The quarterly reports are due by April 30, July 30, October 30, and January 30. The reports are to be submitted as follows: one copy must be mailed to DWR's Washington Regional Office Supervisor, 943 Washington Square Mall, Washington, NC 27889, and one copy must be mailed to the Water Quality Permitting Program, Division of Water Resources, 1617 Mail Service Center, Raleigh NC 27699-1617. The quarterly reporting requirement shall remain in force until completion of two years of beneficiation operations.

- 4) Duke Energy shall conduct annual comprehensive surveys of areas down gradient of the ash basins, the Lay of Land Area (LOLA) and the cooling pond, 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(b)(3) 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.
- 5) No later than October 31, 2021 Duke Energy shall conduct a comprehensive survey of areas down gradient of ash basins at the H. F. Lee Facility, 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 (4) 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.

- 6) If any seeps have not been certified by the Director of DWR as dispositioned (as described in subparagraph 4) 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 no later than December 31, 2021 (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 H. F. Lee Facility. The determination regarding whether a surface water feature is a classified water of the State rests with DWR.
- 7) 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). Notwithstanding the foregoing provisions of this paragraph, any cooling pond seeps contained in the Seep Characterization Report shall be addressed in a separate report (rather than a proposed amendment to the groundwater Corrective Action Plan and/or Closure Plan), specific to the matters of those seeps, and describe how remaining cooling pond seeps will be managed in a manner that will be sufficient to protect public health, safety, and welfare, the environment, and natural resources. The report shall be submitted to DWR’s Complex

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(b)(7) may such a seep, certified as dispositioned, be omitted from the proposed amendment.

Permitting Unit within 60 days of the submittal of the Seep Characterization Report (“Cooling Pond Seep Report”).

For clarity, listed below is a summary of the timetable for the documents due after completion of steps above:

<u>Document</u>	<u>Due Date</u>
Final Seep Report	October 31, 2021
Seep Characterization Report	December 31, 2021
Proposed amendment to groundwater Corrective Action Plan and/or Closure Plan, and/or Cooling Pond Seep Report	February 28, 2022

8) **Termination of Special Order**

This Special Order shall terminate on the later of the following dates:

- January 31, 2022; 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 2(b)(7) above).

c. **Interim Action Levels.**

- 1) 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)(8) is reached.
- 2) 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)(3) below.

- 3) 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.
 - 4) 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 the H. F. Lee Facility's 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 the H. F. Lee Facility no later than thirty (30) days following their effective or submittal dates.

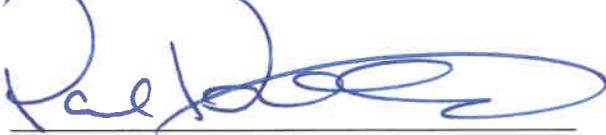
5. Duke Energy and the Commission agree that the stipulated penalties specified in paragraph 2(a)(2) are not due if Duke Energy satisfies DWR that noncompliance was caused solely by:
 - a. An act of God;
 - b. An act of war;
 - c. An intentional act or omission of a third party, but this defense shall 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 and the cooling pond at Duke Energy's H. F. Lee Facility, and listed in Attachment A to this Special Order, are hereby deemed covered by this Special Order. Any newly-identified non-constructed seeps discovered 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 permit NC0003417.
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 February 28, 2023.

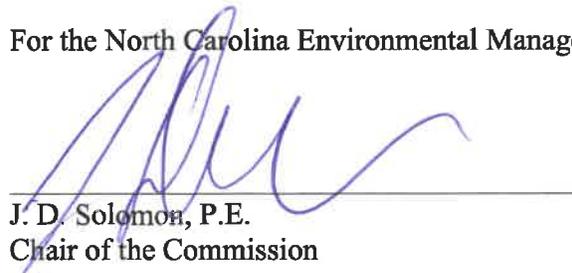
For Duke Energy Progress, LLC:



Paul Draovitch
Senior Vice President, Environmental, Health & Safety

1/3/19
Date

For the North Carolina Environmental Management Commission:



J. D. Solomon, P.E.
Chair of the Commission

1/10/2019
Date

Attachment A
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.1

I/A

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
LOLA S-01	35.379568	-78.075043	Seep from the land area north of the cooling pond, between the cooling pond and the Neuse River. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
LOLA S-01A	35.379648	-78.074632	Seep from the land area north of the cooling pond, between the cooling pond and the Neuse River. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
LOLA S-01B	35.380846	-78.077697	Seep from the land area north of the cooling pond, between the cooling pond and the Neuse River. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-01	35.386858	-78.073453	Low volume seep to small channel north of active ash basin at the toe of the dike. Flows west, then south, toward confluence with Neuse River at sampling site S-03A.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A	See S-03A
S-02	35.384001	-78.081383	Low volume seep to small channel north of active ash basin at the toe of the dike. Flows west, then south, toward confluence with Neuse River at sampling site S-03A.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A	See S-03A

*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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.2

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-03**	35.382666	-78.084374	Channel on west side of active ash basin. Directs flow from ditch on north side of active ash basin south toward Neuse River. Not a seep.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A	See S-03A
S-03A**	35.381806	-78.084052	Site just before confluence of S-03 channel conveying flow from upstream sites and the Neuse River. Not a seep.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A prior to entering Neuse River	Arsenic 400 µg/L Hardness 500 mg/L TDS 800 mg/L
S-04	35.381993	-78.078784	Stagnant, ponded water inland from river terrace below southwest side of active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-05**	35.379045	-78.070293	Static AOW near riprap area on the south side of the southeast corner of active ash basin. Location has been repaired. No flow observed in recent observations.	Neuse River	WS-IV; NSW	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-06	35.386968	-78.071942	Low volume seep to small channel on east side of active ash basin at the toe of the dike. Flows south, toward confluence with Neuse River at sampling site S-09.	Ditch system draining areas north and east of active ash basin	WS-IV; NSW	Monitoring at location S-09	See S-09
S-07	35.382767	-78.069655	Low volume seep to small channel on east side of active ash basin at the toe of the dike. Flows south, toward confluence with Neuse River at sampling site S-09.	Ditch system draining areas north and east of active ash basin	WS-IV; NSW	Monitoring at location S-09	See S-09

*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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.3

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-08	35.38051	-78.068532	Static AOW near riprap area on the east side of the southeast corner of active ash basin. Any flow collects in channel and flows south toward S-09. No flow observed in recent observations.	Ditch system draining areas north and east of active ash basin	WS-IV; NSW	Monitoring at location S-09	See S-09
S-09**	35.379492	-78.067718	Monitoring location just before confluence of channel on east side of active ash basin conveying flow from upstream sites and the Neuse River. Not a seep.	Ditch system draining areas north and east of active ash basin	WS-IV; NSW	Monitoring at location S-09 prior to entering Neuse River	Arsenic 400 µg/L Hardness 500 mg/L TDS 800 mg/L
S-18	35.379222	-78.101206	Stagnant, ponded water inland from river terrace below east side of inactive ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-19*	35.38179	-78.097649	Stagnant, ponded water inland from river terrace below northeast side of inactive ash basin. From sampling – No CCR impacts.	Neuse River	WS-IV; NSW	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-20**	35.382406	-78.082051	Seep near well CMW-10, along the south side of active ash basin. Location has been repaired to eliminate seep.	Neuse River	WS-IV; NSW	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-21**	35.382151	-78.080376	Stagnant seep along south side of active ash basin. Any flow reinfilters prior to reaching surface water.	Neuse River	WS-IV; NSW	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-22	35.381466	-78.077819	Seep along south side of active ash basin. Flows toward Neuse River.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-23	35.381175	-78.077136	Seep along south side of active ash basin. Flows toward Neuse River.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-24	35.381063	-78.076431	Seep along south side of active ash basin. Flows toward Neuse River.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-25	35.380922	-78.076001	Seep along south side of active ash basin. Flows toward Neuse River.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-26	35.38164	-78.078322	Seep within a small drainage channel for ponded water within the river bank below south side of active ash basin. Flows toward Neuse River.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
S-27	35.385848	-78.075999	Low volume seep to small channel north of active ash basin at the toe of the dike. Flows west, then south, toward confluence with Neuse River at sampling site S-03A.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A	See S-03A
S-28	35.385133	-78.078197	Low volume seep to small channel north of active ash basin at the toe of the dike. Flows west, then south, toward confluence with Neuse River at sampling site S-03A.	Ditch system draining areas north and west of active ash basin	WS-IV; NSW	Monitoring at location S-03A	See S-03A
S-29	35.37862	-78.10593	Seep to Halfmile Branch on southwest side of retired ash basin #2.	Halfmile Branch	WS-IV; NSW	Instream monitoring of Halfmile Branch	See Halfmile Branch Instream Monitoring (p. 8)

*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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.5

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
CPS-01	35.37924	-78.07377	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-02	35.37901	-78.07298	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-03	35.37895	-78.06270	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-04	35.37902	-78.06707	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-05	35.37998	-78.06574	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-06	35.37179	-78.06642	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-07	35.37177	-78.06661	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.6

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
CPS-08	35.37711	-78.06780	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-09	35.36922	-78.07880	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-10	35.36840	-78.08125	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-11	35.36829	-78.08141	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-12	35.36816	-78.08156	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-13	35.37972	-78.07540	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-14	35.37963	-78.07527	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	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
S18-006

Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.7

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
CPS-15	35.37962	-78.07460	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-16	35.37942	-78.07423	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-17	35.37465	-78.06165	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-18	35.37195	-78.06605	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-19	35.37192	-78.06625	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-20	35.37202	-78.06630	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	N/A – 2B Standards Apply
CPS-21	35.36983	-78.07580	Seep from the berm surrounding the cooling pond. Not a seep emanating from the active ash basin.	Neuse River	WS-IV; NSW	Instream monitoring of the Neuse River	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
S18-006
Duke Energy Progress, LLC – H. F. Lee Energy Complex, p.8

Instream Monitoring

Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
Instream Monitoring to evaluate potential impacts from seeps	Neuse River	WS-IV; NSW	Upstream & Downstream Monitoring of the Neuse River	N/A – 2B Standards Apply
Instream Monitoring to evaluate potential impacts from seeps	Halfmile Branch	WS-IV; NSW	Upstream & Downstream Monitoring of Halfmile Branch	Mercury 0.02 µg/L Selenium 30 µg/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.

H. F. Lee Energy Complex – Water Quality Monitoring



SOC S18-006
Duke Energy Progress, LLC – H. F. Lee Plant
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

Analyses of all monitoring conducted per the terms of this SOC shall conform to the requirements of 15A NCAC 2B .0505(e)(4) and (5); i.e., standard methods and certified laboratories shall be used.

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF CHATHAM

IN THE MATTER OF)	
NORTH CAROLINA	)	SPECIAL ORDER BY CONSENT
NPDES PERMIT NC0003433)	
	)	EMC SOC WQ S19-001
HELD BY)	
DUKE ENERGY PROGRESS, LLC)	

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent covering seeps from the coal ash basins at the Cape Fear Facility, is entered into by Duke Energy Progress, 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.

Pursuant to CAMA, Duke Energy is required to decant and dewater its coal ash basins as part of the closure process. Decanting (i.e., removal of the free water on the surface of the coal ash basin) has been completed at the Cape Fear Facility's coal ash basins. Dewatering (i.e. removal of sufficient interstitial water) of the Cape Fear Facility's coal ash basins will be required before the ash basins can be closed. Removal of remaining coal ash wastewater through dewatering 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 Duke Energy completes activities associated with closure of the ash basins. After completion of dewatering activities for a set period of time, for any remaining seeps, Duke Energy must take appropriate corrective action as specified more fully below.

- b. Duke Energy has been issued a North Carolina NPDES permit for operation of an existing wastewater treatment works at the following, former, coal fired electric generation facility:

Facility	Permit Number	County	Issuance Date	Receiving Water for Primary Outfall
Cape Fear	NC0003433	Chatham	12/21/2018	Cape Fear River

- c. All coal fired electric generation infrastructure has been removed from the Cape Fear Facility and Duke Energy no longer conducts any generation of electricity at the site. However, five ash basins exist upon its premises, making it 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 Cape Fear Facility 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. The Cape Fear Facility 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 Cape Fear Facility 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. 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.” Non-constructed seeps at the Cape Fear Facility 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 Cape Fear Facility 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.
- g. A subset of these non-constructed seeps at the Cape Fear Facility 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 the NPDES permit 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.”
- 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 basins 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 Cape Fear Facility.
- 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 a NOV to Duke Energy on March 4, 2016 for the seeps that emanate from the unlined coal ash surface impoundments at the Cape Fear Facility.
- 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 Cape Fear Facility, 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 and dewatering 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 Cape Fear Facility.
- 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 the Cape Fear Facility, pay the Department, by check payable to the North Carolina Department of Environmental Quality, a penalty in the amount of \$48,000, calculated based upon \$6,000 each for eight non-constructed seeps identified prior to January 1, 2015.

A certified check in the amount of \$48,000.00 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 Cape Fear Facility 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.

¹ See especially paragraph 2(a)2 excepting newly identified seeps from future penalties under certain conditions.

- 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 and c), 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, by the deadline set forth herein, adequate amendments to groundwater Corrective Action Plans or Closure Plans to address all remaining seeps, through corrective action as applicable under paragraph 2(b)(7) 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.

² Failure to adequately implement any amended Corrective Action Plan or Closure Plan will be handled in the normal course.

Duke Energy is required to comply with the requirements of G.S. § 130A-309.216. Duke Energy has announced plans to construct an ash beneficiation plant at the Cape Fear Facility capable of processing 300,000 tons of CCR material per year.

- 1) The Coal Ash Management Act (G.S. § 130A-309.210 (b)) prohibited the disposal of CCR into the basins at Duke Energy facilities where coal-fired generating units were no longer producing CCR as of October 1, 2014. The coal-fired generating units at the Cape Fear Facility were retired in October 2012.
- 2) Duke Energy began decanting at the Cape Fear Facility in January 2017. Decanting at the Cape Fear Facility has been effectively completed and water levels are being maintained in the basins.
- 3) Removal of interstitial water will be required in order to excavate the ash for the purpose of beneficiation at the Cape Fear Facility. Duke Energy will begin the process of removal of interstitial water from at least one of the ash basins at the Cape Fear Facility by January 31, 2020 and continue as needed to support the beneficiation plant described above.
- 4) Once the dewatering process is initiated at the Cape Fear Facility, within (30) days after the end of each quarter, Duke Energy shall provide reports on the status of dewatering work and other activities undertaken with respect to excavation of each coal ash surface impoundment to DWR. The quarterly reports are due by April 30, July 30, October 30, and January 30. The reports are to be submitted as follows: one copy must be mailed to DWR's Raleigh Regional Office Supervisor, 3800 Barrett Drive, Raleigh NC 27609, and one copy must be mailed to the Water Quality Permitting Program, Division of Water Resources, 1617 Mail Service Center, Raleigh NC 27699-1617. The quarterly reporting requirement shall remain in force until completion of two years of beneficiation operations.

- 5) Duke Energy shall conduct annual comprehensive surveys of areas down gradient of the 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 and dewatering 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 reports noted in 2(b)(4) 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.
- 6) No later than April 30, 2022 (90 days following the completion of two years of dewatering operations at the Cape Fear 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 at the Cape Fear Facility, 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 and dewatering 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 (5) above) during decanting, dewatering and CCR removal or beneficiation processes, 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.

- 7) If by the date specified in subparagraph (6) above for the Cape Fear Facility, any seeps have not been certified by the Director of DWR as dispositioned (as described in subparagraph (5) 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 no later than June 30, 2022. 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 Cape Fear Facility. The determination regarding whether a surface water feature is a classified water of the State rests with DWR.

No later than August 31, 2022 (60 days following the submittal of the Seep Characterization Report for the Facility), Duke Energy shall submit a complete and adequate proposed amendment to the groundwater Corrective Action Plan and/or Closure Plan as appropriate for the Cape Fear 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 Plan 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(b)(7) may such a seep, certified as dispositioned, be omitted from the proposed amendment.

8) Termination of Special Order

This Special Order shall terminate on the later of the following dates:

- Certification that all seeps have been eliminated.
- 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 (7) above).

For clarity, listed below is a summary of the timetable for the documents due in accordance with the terms of this Special Order:

<u>Document</u>	<u>Due Date</u>
Final Seep Report	April 30, 2022
Seep Characterization Report	June 30, 2022
Proposed amendment to groundwater Corrective Action Plan and/or Closure Plan	August 31, 2022

c. 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)(2) below.
- 2) 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.

- 3) 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)(8) is reached.
 - 4) 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 the Cape Fear Facility 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 Cape Fear Facility, and listed in Attachment A to this Special Order, are hereby deemed covered by this Special Order. Any newly-identified non-constructed seeps discovered 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 permit NC0003433.
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.

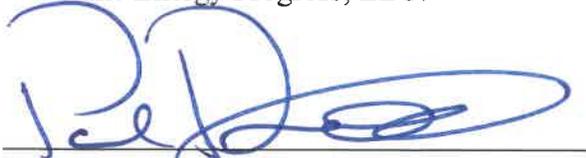
12. In addition to any other applicable requirement, each report required to be submitted by Duke Energy under this Special Order shall be signed by a plant manager or a corporate official responsible for environmental management and compliance, and shall include the following certification:

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 August 31, 2023.

For Duke Energy Progress, LLC:



Paul Draovitch
Senior Vice President, Environmental, Health & Safety

12/5/19
Date

For the North Carolina Environmental Management Commission:



Dr. A. Stanley Meiburg, Chairman
NC Environmental Management Commission

1/27/2020
Date

Attachment A
S19-001

Duke Energy Progress, LLC – Cape Fear Plant, p.1

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-01**	35.5941	-79.0455	Intermittent seep in grassy area northwest of 1985 ash basin. Any flow drains to former stormwater pipe with outfall to the north of the power line right of way. Flows to Shaddox Creek.	Shaddox Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-02**	35.59328	-79.0445	Seepage around former sluice pipes at northwest corner of 1985 ash basin. Area has been repaired; seep eliminated.	Shaddox Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-03**	35.59251	-79.0457	Low volume, intermittent seep to flat, grassy area between northwest end of 1985 ash basin and CP&L Drive. Any flow would drain toward S-01, and from there to Shaddox Creek.	Shaddox Creek	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-04	35.59301	-79.0428	Seep from the base of the north side of the 1985 ash basin. Seep flows into an unnamed tributary (UT) to Shaddox Creek.	UT to Shaddox Creek	WS-IV	Instream monitoring of Shaddox Creek	No Interim Action Levels
S-05	35.59029	-79.0466	Discharge from French drain collection system located north of 1978 ash basin. Discharge is to a ditch flowing east to the NPDES permit effluent channel. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	NPDES monitoring of Outfall 007 and/or Instream monitoring of UT to Cape Fear River (2)	See page 5
S-06**	35.58981	-79.0454	Two small seeps located along the western bank of the canal by the 1978 ash basin where rip rap has been placed. Flows to NPDES permit effluent channel (outfall 007). This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	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

S19-001

Duke Energy Progress, LLC – Cape Fear Plant, p.2

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-07	35.58993	-79.0436	Location of discharge from stormwater pipes collecting seepage along west side of 1985 ash basin. Discharge from pipes is to a marshy area with drainage to NPDES permit effluent channel. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	NPDES monitoring of Outfall 007 and/or Instream monitoring of UT to Cape Fear River (2)	See page 5
S-08	35.58585	-79.0427	Discharge from canal collecting flow from seeps and low-lying areas on southwest side of 1985 ash basin. Discharge is to the NPDES permit effluent channel. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	NPDES monitoring of Outfall 007 and/or Instream monitoring of UT to Cape Fear River (2)	See page 5
S-09	35.58594	-79.0398	Intermittent seep in low-lying area southwest of 1985 ash basin. Any flow moves toward a wetland area with drainage to an unnamed tributary to the Cape Fear River.	UT to Cape Fear River	WS-IV	Instream monitoring of UT to Cape Fear River (1)	See page 5
S-10**	35.58581	-79.0386	Stagnant area of wetness at base of southeast corner of 1985 ash basin. Collected seepage and runoff would flow from depression to a wetland area with drainage to an unnamed tributary to the Cape Fear River.	UT to Cape Fear River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-11**	35.58501	-79.0412	Small seep in riprapped depression adjacent to stormwater outfall. Any flow would be to a shallow ditch to NPDES permit effluent channel. No flow observed during recent sampling events. This non-constructed seep would flow to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	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
S19-001

Duke Energy Progress, LLC – Cape Fear Plant, p.3

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-12*	35.5879	-79.0447	Ponded seepage area downslope of the southeast corner of the 1978 ash basin. From sampling results – No CCR Impacts.	Wetlands	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-13**	35.58463	-79.0474	Seepage area in a circular depression downslope of the southwest corner of the 1978 ash basin and the southeast side of the 1970 ash basin. Drainage appears to flow southeast. No flow observed during recent sampling events.	Wetlands	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-14**	35.58244	-79.0478	Seep to a small depression in flat area south of 1970 ash basin. Area is connected to a ditch flowing southwest to the Cape Fear River. No flow observed during recent sampling events.	UT to Cape Fear River	WS-IV	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-15	35.58889	-79.0514	Seep from the west side of the 1963 ash basin, emerging beyond lower access road and flowing to the Cape Fear River.	Cape Fear River	WS-IV	Cape Fear River instream monitoring	No Interim Action Levels
S-16	35.59039	-79.0514	Seep adjacent to the Cape Fear River near northwest corner of 1963 ash basin. Flow is partially treated prior to discharge via pipe.	Cape Fear River	WS-IV	Cape Fear River instream monitoring	No Interim Action Levels
S-17	35.59054	-79.0514	Area of wetness adjacent to the Cape Fear River near northwest corner of 1963 ash basin.	Cape Fear River	WS-IV	Cape Fear River instream monitoring	No Interim Action Levels
S-18	35.59025	-79.0514	Recently identified, low flow seep adjacent to the Cape Fear River near northwest corner of 1963 ash basin. Flow is partially treated prior to discharge via pipe.	Cape Fear River	WS-IV	Cape Fear River instream monitoring	No Interim Action Levels
S-19	35.59042	-79.0514	Area of wetness adjacent to the Cape Fear River near northwest corner of 1963 ash basin.	Cape Fear River	WS-IV	Cape Fear River instream monitoring	No Interim Action Levels

* 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
S19-001

Duke Energy Progress, LLC – Cape Fear Plant, p.4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-20	35.59644	-79.0519	Recently identified area of wetness at river bank of the Haw River downslope from northwest side of 1956 ash basin.	Haw River	WS-IV	Haw/Cape Fear River instream monitoring	No Interim Action Levels
S-21	35.59794	-79.051	Recently identified area of wetness at river bank of the Haw River downslope from northwest side of 1956 ash basin.	Haw River	WS-IV	Haw/Cape Fear River instream monitoring	No Interim Action Levels
S-22	35.59899	-79.0488	Recently identified area of wetness at creek bank of Shaddox Creek downslope from north side of 1956 ash basin.	Shaddox Creek	WS-IV	Instream monitoring of Shaddox Creek	No Interim Action Levels
S-23**	35.589	-79.042	Seep along the toe of the west side of the 1985 ash basin. Determined to be a part of S-07 flow.	Effluent channel flowing to NPDES permit outfall 007	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring	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 WQTUS, 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.

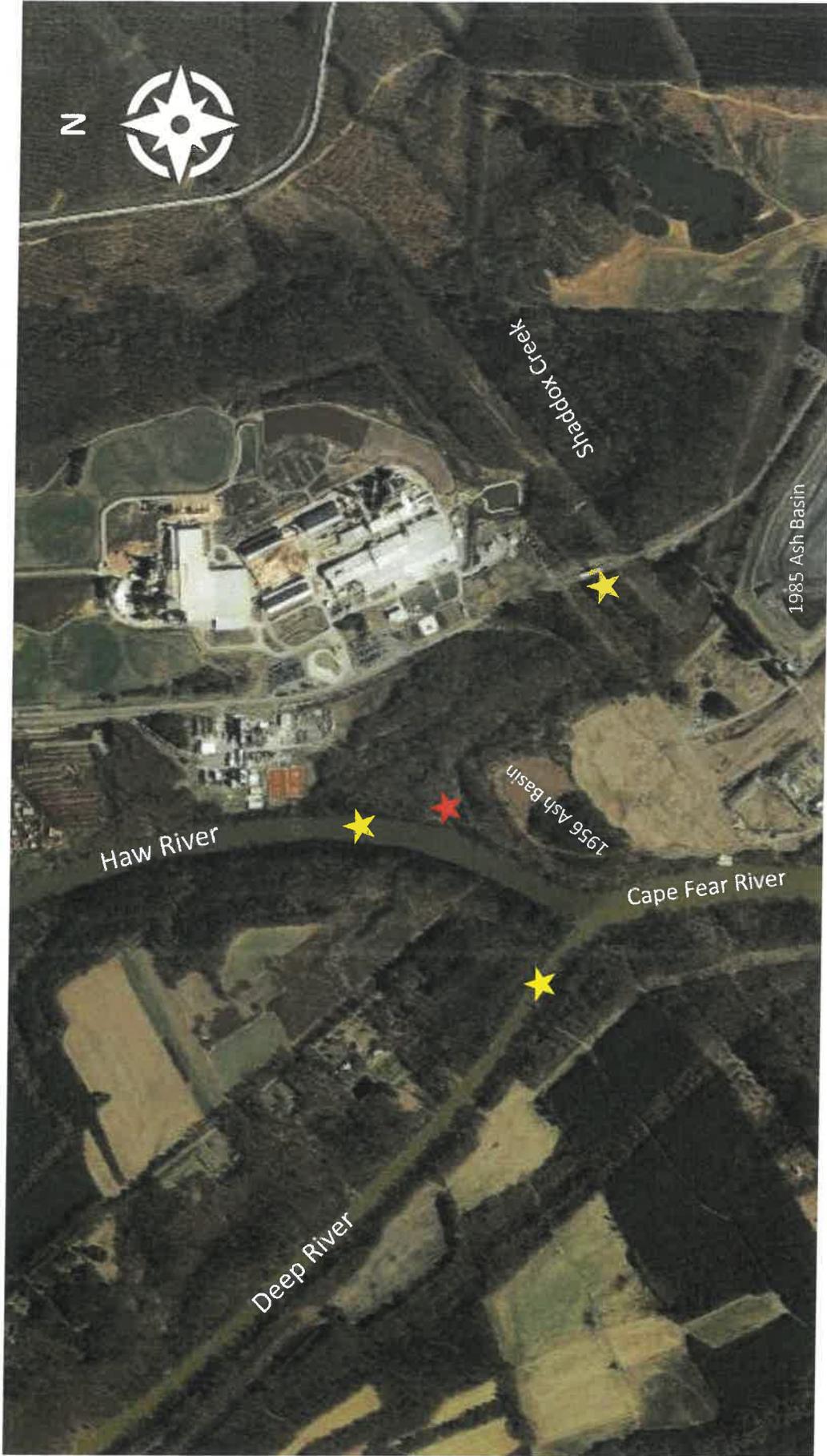
Attachment A
S19-001
Duke Energy Progress, LLC – Cape Fear Plant, p.5

Instream Monitoring

Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
Upstream Background Monitoring	Deep River & Haw River	WS-IV	Instream Monitoring of the Deep River and the Haw River	No Interim Action Levels
Instream Monitoring to evaluate potential impacts from seeps	Shaddox Creek	WS-IV	Upstream & Downstream Monitoring of Shaddox Creek	No Interim Action Levels
Instream Monitoring to evaluate potential impacts from seeps	UT to the Cape Fear River	WS-IV	Instream Monitoring of UT to the Cape Fear River (#1)	Hardness 600 mg/L TDS 800 mg/L Sulfates 350 mg/L
Instream Monitoring to evaluate potential impacts from seeps	UT to the Cape Fear River	WS-IV	Instream Monitoring of UT to the Cape Fear River (#2)	Hardness 600 mg/L TDS 800 mg/L Sulfates 350 mg/L
Downstream Monitoring to evaluate potential impacts from seeps	Cape Fear River	WS-IV	Instream Monitoring of the Cape Fear River. <i>SOC monitoring location is the same as described in condition A. (13.) of NPDES permit NC0003433 as Downstream Outfall 008.</i>	No Interim Action Levels

*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.

Cape Fear Plant – Water Quality Monitoring (North)



- ★ Upstream – Deep River, Haw River & Shaddox Creek
- ★ Downstream – Shaddox Creek

Cape Fear Plant – Water Quality Monitoring (South)



Downstream – Cape Fear River



Instream – UT to Cape Fear River

SOC S19-001
 Duke Energy Progress, LLC – Cape Fear Plant
 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

Analyses of all monitoring conducted per the terms of this SOC shall conform to the requirements of 15A NCAC 2B .0505(e)(4) and (5); i.e., standard methods and certified laboratories shall be used.

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION

COUNTY OF ROBESON

IN THE MATTER OF)	
NORTH CAROLINA	)	SPECIAL ORDER BY CONSENT
NPDES PERMIT NC0005363)	
	)	EMC SOC WQ S19-006
HELD BY)	
DUKE ENERGY PROGRESS, LLC)	

Pursuant to the provisions of North Carolina General Statutes (G.S.) 143-215.2, this Special Order by Consent covering seeps from the coal ash basin at the W. H. Weatherspoon Facility, is entered into by Duke Energy Progress, 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.

Pursuant to CAMA, Duke Energy is required to decant and dewater its coal ash basins as part of the closure process. Decanting (i.e., removal of the free water on the surface of the coal ash basin) has been completed at the Weatherspoon Facility's coal ash basin. Dewatering (i.e. removal of sufficient interstitial water) of the Weatherspoon Facility's coal ash basins will be required before the ash basin can be closed. Removal of remaining coal ash wastewater through dewatering 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 Duke Energy completes activities associated with closure of the ash basins. Constructed seeps at the Weatherspoon Facility (as defined in subparagraphs e and f below) will be addressed in the NPDES permit. After completion of dewatering activities for a set period of time, 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 a North Carolina NPDES permit for operation of an existing wastewater treatment works at the following, former coal fired electric generation facility:

Facility	Permit Number	County	Issuance Date	Receiving Water for Primary Outfall
Weatherspoon	NC0005363	Robeson	08/03/2018	Lumber River

- c. Duke Energy's Weatherspoon Facility no longer generates electricity by burning coal. A four-unit, combustion turbine electric generation system, powered by fuel oil is located at the site. The Weatherspoon Facility has an existing ash basin and 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 basin at the Weatherspoon Facility is unlined, having no impermeable barrier installed along its 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. The Weatherspoon Facility exhibits locations adjacent to, but beyond the confines of, the coal ash basin where seepage of coal ash wastewater from the coal ash basin 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 Weatherspoon Facility 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. The Weatherspoon Facility’s coal ash impoundment contains constructed features on or within the dam structures (toe drains) to collect seepage. This wastewater is conveyed via pipes and a constructed channel directly to treatment unit covered by the NPDES permit, with permitted discharge to a receiving water. These discrete, identifiable, point source discharges are covered and regulated by the NPDES permit and designated as internal 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 Weatherspoon Facility 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 Weatherspoon Facility 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 Weatherspoon Facility 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 the Weatherspoon Facility's coal ash basin creates and/or flows into features delineated as classified waters of the State or Waters of the United States.
- j. Collectively, the flow volume from non-constructed seeps is generally low compared to historic volumes of wastewater generated at the Weatherspoon Facility.
- 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 a NOV to Duke Energy on March 4, 2016 for the seeps that emanate from the unlined coal ash surface impoundment at the Weatherspoon Facility.
- 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 Weatherspoon Facility, 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. Continued dewatering of wastewater from the coal ash basin is expected to eliminate or substantially reduce the seeps from the ash basin at the Weatherspoon Facility.
 - 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 the Weatherspoon Facility, pay the Department, by check payable to the North Carolina Department of Environmental Quality, a penalty in the amount of \$72,000, calculated based upon \$12,000 each for four constructed seeps identified prior to January 1, 2015 and \$6,000 each for four non-constructed seeps identified prior to January 1, 2015.

A certified check in the amount of \$72,000.00 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 Weatherspoon Facility 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 and c), 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, by the deadline set forth herein, adequate amendments to groundwater Corrective Action Plans or Closure Plans to address all remaining seeps, through corrective action as applicable under paragraph 2(b)(7) 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.

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.

- 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 is required to comply with the requirements of G.S. § 130A-309.216. Duke Energy is currently engaged in the reuse of CCR material from the Weatherspoon Facility by providing the material as a raw product in the manufacture of cement.

- 1) The Coal Ash Management Act (G.S. § 130A-309.210 (b)) prohibited the disposal of CCR into the basins at Duke Energy facilities where coal-fired generating units were no longer producing CCR as of October 1, 2014. The coal-fired generating units at the Weatherspoon Facility were retired in 2011.
- 2) The cessation of inflows at the Weatherspoon Facility resulted in an immediate reduction of the amount of free water in the basin such that additional decanting was not pursued.
- 3) Removal of interstitial water will be required in order to excavate the ash for the purpose of its removal from the Weatherspoon Facility. Duke Energy has begun the process of removal of interstitial water from the Weatherspoon Facility and will continue as needed to support the ash reuse project described above.
- 4) Beginning with the first complete calendar quarter that occurs following the effective date of this Consent Order, Duke Energy shall provide reports on the status of dewatering work and other activities undertaken with respect to excavation of the Weatherspoon Facility's coal ash surface impoundment to DWR. The quarterly reports are due by April 30, July 30, October 30, and January 30. The reports are to be submitted as follows: one copy must be mailed to DWR's Fayetteville Regional Office Supervisor, 225 Green Street, Suite 714, Fayetteville, NC 28301-5095, and one copy must be mailed to the Water Quality Permitting Program, Division of Water Resources, 1617 Mail Service Center, Raleigh NC 27699-1617. The quarterly reporting requirement shall remain in force until completion of two years of coal ash excavation operations.

- 5) Duke Energy shall conduct annual comprehensive surveys of areas down gradient of the 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 dewatering of the basin 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 reports noted in 2(b)(4). 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.
- 6) No later than April 30, 2022 (90 days following the completion of two years of CCR removal activities under the terms of this Special Order (to include excavation and dewatering) at the Weatherspoon Facility), and in the same manner as in the annual surveys, Duke Energy shall conduct a comprehensive survey of areas down gradient of ash basin at the Weatherspoon Facility, 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 and dewatering of the basin 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 (5) above) during decanting, dewatering and CCR removal or beneficiation processes, 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.

- 7) If by the date specified in subparagraph (6) above, any seeps (including both constructed and non-constructed seeps) have not been certified by the Director of DWR as dispositioned (as described in subparagraph (5) 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 no later than June 30, 2022. 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 Weatherspoon Facility. The determination regarding whether a surface water feature is a classified water of the State rests with DWR.

No later than August 31, 2022 (60 days following 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 Weatherspoon 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(b)(7) may such a seep, certified as dispositioned, be omitted from the proposed amendment.

8) **Termination of Special Order**

This Special Order shall terminate on the later of the following dates:

- Certification that all seeps have been eliminated.
- 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 (7) above).

For clarity, listed below is a summary of the timetable for the documents due in accordance with the terms of this Special Order:

<u>Document</u>	<u>Due Date</u>
Final Seep Report	April 30, 2022
Seep Characterization Report	June 30, 2022
Proposed amendment to groundwater Corrective Action Plan and/or Closure Plan	August 31, 2022

c. **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)(2) below.
- 2) 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.

- 3) 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)(8) is reached.
 - 4) 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 impoundment in such a manner that its 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 the Weatherspoon Facility 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 impoundment at Duke Energy's Weatherspoon Facility, and listed in Attachment A to this Special Order, are hereby deemed covered by this Special Order. Any newly-identified non-constructed seeps discovered 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 permit NC0005363.
 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 August 31, 2023.

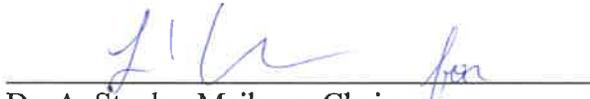
For Duke Energy Progress, LLC:



Paul Draovitch
Senior Vice President, Environmental, Health & Safety

12/5/19
Date

For the North Carolina Environmental Management Commission:



Dr. A. Stanley Meiburg, Chairman
NC Environmental Management Commission

1/27/2020
Date

Attachment A
S19-006

Duke Energy Progress, LLC – Weatherspoon 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	34.588537	-78.968071	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-12	34.588729	-78.967785	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-13	34.588896	-78.967469	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-14	34.589052	-78.967185	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-25	34.588819	-78.967677	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	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.

Attachment A
S19-006

Duke Energy Progress, LLC – Weatherspoon Steam Station, p. 2

Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-26	34.588953	-78.967433	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-27	34.589078	-78.967197	Engineered ash basin toe drain. Flows to collection ditch. Conveyed to cooling pond; discharge regulated by NPDES permit, outfall 001.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water

I/A

*Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
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Attachment A
S19-006

Duke Energy Progress, LLC – Weatherspoon Steam Station, p. 3

Non-Constructed Seeps

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-01	34.593324	-78.973004	Seep to small channel north of the ash basin, flowing west between toe of the dike and railroad tracks. Channel flows to S-09 and S-16 before entering wetland complex and discharge to cooling pond.	Site drainage ditch system flowing to cooling pond	C; Sw	Monitoring at established Duke Energy S-16 monitoring site	See S-16
S-02	34.593513	-78.969757	Seep around riprap pile on northeast side of ash basin. Flow conveyed southeast in small channel toward S-05	Unnamed Tributary (UT) to Jacob's Swamp and the Lumber River	C; Sw	Monitoring at location S-05, prior to joining other flows at S-15.	See S-05
S-03	34.591892	-78.967913	Seep on east side of the ash basin at the toe of the dike. Flow conveyed southeast in small channel toward S-05.	UT to Jacob's Swamp and the Lumber River	C; Sw	Monitoring at location S-05, prior to joining other flows at S-15.	See S-05
S-04**	34.589755	-78.966327	Static AOW at southeast corner of ash basin. Area repaired; seep eliminated.	UT to Jacob's Swamp and the Lumber River	C; Sw	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.
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Attachment A
S19-006

Duke Energy Progress, LLC – Weatherspoon Steam Station, p. 4

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-05**	34.589871	-78.96588	Monitoring location; not a seep. Small channel near southeast corner of ash basin near toe of dike. Location receives flow from upstream locations S-02 and S-03. All flow at the location has been diverted from flowing to Jacob's Swamp to now join engineered flow near S-15. Combined flows go to cooling pond.	UT to Jacob's Swamp and the Lumber River	C; Sw	Monitoring at location S-05, prior to joining other flows at S-15.	Arsenic 500 µ/L Cadmium 10 µg/L
S-06*	34.593088	-78.973552	Flow to ditch beyond north side of ash basin. Flows west toward S-07 and S-08. From sampling – No CCR impacts.	UT to the Lumber River	C; Sw	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-07*	34.588211	-78.977747	36" stormwater pipe, west of former power plant site. From sampling – No CCR impacts.	UT to the Lumber River	C; Sw	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-08*	34.588199	-78.97773	36" stormwater pipe, west of former power plant site. From sampling – No CCR impacts.	UT to the Lumber River	C; Sw	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-09**	34.590244	-78.973407	Monitoring location; not a seep. Drainage ditch between dike wall and railroad tracks. Receives flow from S-01 upstream, and flows toward S-16 downstream before entering wetland complex and discharge to cooling pond.	Site drainage ditch system flowing to cooling pond	C; Sw	Monitoring at established Duke Energy S-16 monitoring site	See S-16
S-10	34.589208	-78.971123	Seep located at the toe of the dike face on the west side of the ash basin. Flow conveyed via ditch to engineered channel collecting toe drain discharges. All flow conveyed to cooling pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Collection ditch flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	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.
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Attachment A
S19-006

Duke Energy Progress, LLC – Weatherspoon Steam Station, p. 5

Seep ID Number	Approximate Location Coordinates		Description	Receiving Waterbody	Receiving Waterbody Classification	SOC Monitoring	Interim Action Levels
	Latitude	Longitude					
S-15**	34.58924	-78.966433	Monitoring location; not a seep. Sampling site at end of culvert under road paralleling south side of ash basin. Collects flows from S-02, S-03, S-05, S-10 and toe drain discharges. Combined flows are conveyed via engineered channel to cooling pond.	Effluent channel flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-16**	34.587238	-78.969535	Monitoring location; not a seep. Narrow ditch downstream of locations S-01 and S-09 conveying flow to cooling pond. Location is upstream of where ditch enters wetland complex.	Site drainage ditch system flowing to cooling pond	C; Sw	Monitoring at established Duke Energy S-16 monitoring site	Arsenic 15 ug/L Mercury 0.02 ug/L
S-18*	34.587809	-78.978069	Culvert through berm, west of former power plant site. From sampling – No CCR impacts.	UT to the Lumber River	C; Sw	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-22*	34.58781	-78.978079	Culvert through berm, west of former power plant site. From sampling – No CCR impacts.	UT to the Lumber River	C; Sw	N/A – Seep Dispositioned	N/A – Seep Dispositioned
S-23	34.589457	-78.966748	Small seep at toe of ash basin south side dam. Flows to engineered channel collecting toe drain discharges. All flow conveyed to cooling pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water
S-24	34.5882	-78.9687	Small seep at toe of ash basin south side dam. Flows to engineered channel collecting toe drain discharges. All flow conveyed to cooling pond. This non-constructed seep flows to a portion of an NPDES wastewater treatment system.	Effluent channel flowing to NPDES permit outfall 001	N/A – Not a Classified Surface Water	N/A – Seep contribution analyzed in NPDES Permit monitoring at Outfall 001	N/A – Not a Classified Surface Water

* Location previously investigated as a seep. Monitoring has not indicated the presence of coal combustion residuals.
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W. H. Weatherspoon Plant – Water Quality Monitoring



★ Instream Monitoring at S-05 & S-16 Locations

SOC S19-006
 Duke Energy Progress, LLC –W. H. Weatherspoon Plant
 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

Analyses of all monitoring conducted per the terms of this SOC shall conform to the requirements of 15A NCAC 2B .0505(e)(4) and (5); i.e., standard methods and certified laboratories shall be used.

No. 271A18 & 401A18

**Public Staff
Lucas 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, Intervenors,

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

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CAROLINA HOUSING COALITION,
NATURAL RESOURCES DEFENSE COUNCIL,
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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” (Carolinas 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 below have authorized me to list their names on this brief as if they had personally signed.

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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
Marc Bernstein
Special Deputy Attorney General

September 25, 2019

CERTIFICATE OF SERVICE

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

**Public Staff
Lucas Exhibit 11**

No. of 2L and IMAC Standards Violations At or Beyond the Compliance Boundary by Constituent

Parameters	Generating Station							Violations Total
	Asheville	Cape Fear	HF Lee	Mayo	Roxboro	Sutton	Weatherspoon	
IMAC Antimony	4	8	1	6	4	7	1	31
Arsenic	1	15	65	-	-	36	-	117
Barium		3	3	2	-			8
IMAC Beryllium		15					21	36
Boron	196	151	75		69	215	35	741
Cadmium	-	-	1	2		2	5	10
Chloride	16	-	1		1	2		20
Chromium	19	8	13	8	11	8	11	78
Chromium (VI)	7	6	4	7	-	1		25
IMAC Cobalt	155	50	124	24	69	162	63	647
Copper						-		-
Iron	305	171	615	48	23	62	54	1,278
Lead	1	2	2	4	2	2	4	17
Manganese	462	172	191	153	59	137	74	1,248
Mercury								-
Nickel	1	5		2		-	11	19
pH	208	206	29	26	145	990	83	1,687
Selenium	6	12	12		18	26		74
Sulfate	98	53	-	5	121	9	25	311
IMAC Thallium	13	4	1	2	1	24	25	70
Total Dissolved Solids	116	14	7	3	75	10	21	246
Federal MCL Total Radium	22	4	-	15	1	-	5	47
IMAC Vanadium	54	101	258	21	134	85	44	697
Zinc	1						3	4
Violations Total	1,685	1,000	1,402	328	733	1,778	485	7,411

Notes:

*Data compiled from DEP responses to Public Staff Data Request 2-18, dated October 30, 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
Lucas Exhibit 12**

No. of Federal MCL and Secondary MCL Exceedances by Constituent

Parameters	Generating Station
	Robinson
Antimony	
Arsenic	99
Barium	
Beryllium	
Boron	
Cadmium	2
Chloride	
Chromium	3
Chromium (VI)	
Cobalt	
Copper	-
Iron	11
Lead	
Manganese	19
Mercury	
Nickel	
pH	400
Selenium	
Sulfate	10
Thallium	4
Total Dissolved Solids	7
Total Radium	77
Vanadium	
Zinc	
Exceedances Total	632

Notes:

*Data compiled from DEP response to Public Staff Data Request No. 2-18, dated October 30, 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
Asheville	Boron, iron, manganese, pH, and total dissolved solids (TDS)	Boron, chloride, cobalt, iron, manganese, sulfate, and TDS OLOI- chromium and pH	Boron, chloride, cobalt, total chromium, iron, manganese, pH, sulfate, TDS, and vanadium	Boron, chloride, cobalt, iron, manganese, sulfate, vanadium, and TDS
Cape Fear	Antimony, arsenic, beryllium, boron, cobalt, manganese, nickel, pH, selenium, sulfate, thallium, TDS, and vanadium	Boron, cobalt, iron, manganese, pH, and sulfate OLOI- TDS and vanadium	Boron, iron, manganese, pH, sulfate, and TDS	Antimony, arsenic, boron, cobalt, iron, manganese, pH, sulfate, TDS, and vanadium
H.F. Lee	Arsenic, boron, cobalt, iron, and manganese	Arsenic, boron, iron, manganese, pH, and selenium OLOI- chromium, cobalt, and vanadium	Arsenic, boron, iron, manganese, pH, selenium, vanadium	Arsenic, boron, cobalt, iron, manganese, TDS, and vanadium
Mayo	Antimony, boron, cobalt, iron, manganese, pH, strontium, and TDS OLOI- Chromium at the CCP Monofill	Boron, iron, manganese, and pH OLOI- Cobalt, iron, TDS, and vanadium at the Active Ash Basin and boron at the CCP Monofill	Boron, cobalt, iron, manganese, pH, and TDS	No findings

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
Robinson	Not reviewed by Audit Team	Arsenic	Arsenic OLOI- Radium 226/228	Arsenic and combined radium 226/228
Roxboro	Boron, sulfate, strontium, and TDS Boron, selenium, sulfate, and TDS near the CCP Landfill	Boron, iron, pH, sulfate, and TDS OLOI- Cobalt, manganese, and vanadium near Ash Basins and boron, chromium, iron, manganese, pH, selenium, sulfate, and TDS near the CCP Landfill	Boron, cobalt, iron, manganese, selenium, sulfate, TDS, and vanadium	Boron, cobalt, iron, manganese, pH, sulfate, TDS, and vanadium
Sutton	Not reviewed by Audit Team	Arsenic, boron, chloride, chromium(VI), cobalt, iron, manganese, pH, TDS, and vanadium	Arsenic, boron, cobalt, iron, manganese, pH, selenium, TDS, and vanadium	Arsenic, boron, cobalt, chromium (IV), chromium, iron, manganese, pH, selenium, TDS, thallium, and vanadium
Weatherspoon	Not discussed	Manganese and pH	Manganese	Iron and pH

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
Asheville	5 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 18 other areas of wetness (AOW)	5 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and other AOW	5 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state NPDES permit pending	No findings presented related to seeps SOC dated 10/10/18 covers non-constructed seeps NPDES permit effective 12/1/18 includes constructed seeps
Cape Fear	6 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state, 7 other AOW, and 5 seeps discharge via NPDES outfall	2 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 2 seeps discharge via NPDES outfall	2 unauthorized seeps containing CCR pollutants discharged into waters of the state NPDES permit pending	2 unauthorized seeps containing CCR pollutants discharged into waters of the state NPDES permit effective 10/1/18 includes constructed seeps
H.F. Lee	16 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 8 other AOW	12 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and other AOW	8 AOW NPDES permit pending for 25 constructed seeps	No findings presented related to seeps SOC dated 1/10/19 covers non-constructed seeps NPDES permit effective 7/1/19 includes 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
Mayo	9 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 3 other AOW	9 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state	7 unauthorized seeps containing CCR pollutants discharged into waters of the state and other AOW NPDES permit pending	No findings presented related to seeps SOC dated 8/15/18 covers non-constructed seeps NPDES permit effective 8/1/18 includes constructed seeps
Robinson	OLOI- AOW	No findings presented related to seeps	No findings presented related to seeps NPDES permit includes seeps	No findings presented related to seeps NPDES permit includes seeps
Roxboro	5 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 11 seeps discharge via NPDES outfall	3 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state, other AOW, and 8 seeps discharge via NPDES outfall	3 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state, other AOW, and 7 seeps discharge via NPDES outfall	No findings presented related to seeps SOC dated 8/15/18 covers non-constructed seeps NPDES permit includes AOW S-18 and S-19
Sutton	Not reviewed by Audit Team	No findings presented related to seeps	No findings presented related to seeps	No findings presented related to 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
Weatherspoon	3 unauthorized seeps, point source, containing CCR pollutants which discharge to waters of the state and 19 other AOW	No findings presented related to seeps	No findings presented related to seeps NPDES permit pending for 3 constructed seeps	13 unauthorized seeps containing CCR pollutants discharged into waters of the state NPDES permit effective 11/1/18 includes constructed seeps

OLOI- Open Line of Inquiry

Source: <https://www.duke-energy.com/our-company/environment/compliance-and-reporting/environmental-compliance-plans>

Public Staff
Lucas Exhibit 15

Station	Well Type	Number of SSIs for Appendix III Parameters - CCR Rule 257.95(d)(1)							Total Number of SSIs
		pH	Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	
Asheville Steam Station									
1964 & 1982 Ash Basins	Waste Boundary	4	44	47	42	9	47	45	238
	Characterization	18	59	72	70	24	70	73	386
H.F. Lee Energy Complex									
Active Ash Basin	Waste Boundary	86	74	57	53	31	36	49	386
	Characterization	19	15	11	14	2	8	11	80
H.B. Robinson Steam Electric Plant									
Ash Basin	Waste Boundary	6	32	31	15	17	31	31	163
	Characterization	4	10	8	6	1	12	12	53
Mayo Steam Station									
CCR Multiunit (Ash Basin / FGD Forward Flush Pond / FGD Settling Pond)	Waste Boundary	20	30	31	38	5	22	7	153
	Characterization	NA	NA	NA	NA	NA	NA	NA	NA
CCP Monofill	Waste Boundary	12	8	30	25	13	16	26	130
	Characterization	NA	NA	NA	NA	NA	NA	NA	NA
WWT Basin	Waste Boundary	ND	ND	ND	ND	ND	ND	ND	ND
	Characterization	NA	NA	NA	NA	NA	NA	NA	NA
Roxboro Steam Station									
CCR Unit 1 (East Ash Pond / Industrial Landfill)	Waste Boundary	1	38	33	6	24	46	42	191
	Characterization*	1	3	5	---	4	9	10	32
CCR Unit 2 (West Ash Basin / West and East FGD Settling Ponds / FGD Forward Flush Pond)	Waste Boundary	66	57	48	36	11	60	52	330
	Characterization*	8	---	3	---	6	6	3	26
L.V. Sutton Energy Complex									
Active Ash Basin	Waste Boundary	66	69	96	76	19	80	81	487
	Characterization	11	11	10	8	---	11	7	58
Onsite CCR Landfill (CCP Landfill)	Waste Boundary	45	22	39	34	1	40	38	219
	Characterization	NA	NA	NA	NA	NA	NA	NA	NA
Weatherspoon Steam Station									
1979 Ash Basin	Waste Boundary	24	32	40	35	1	40	40	212
	Characterization	4	2	4	2	---	4	4	20

Total 3,164

Prepared by: MRC Checked by: ABM

Notes:

- NA - Characterization wells not established due to alternate source demonstration
- ND - No data No applicable data available at time of production.
- - No SSLs
- * - Spring 2018 and Fall 2018 data was evaluated for SSIs in characterization wells

Public Staff calculated fields.

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
Asheville Steam Station																		
1964 & 1982 Ash Basins	Waste Boundary	---	---	---	---	---	---	9	---	---	---	---	---	---	---	3	12	22
	Characterization	---	---	---	---	---	---	6	---	---	1	---	---	---	---	3	10	
H.F. Lee Energy Complex																		
Active Ash Basin	Waste Boundary	---	15	---	---	---	---	10	---	---	8	---	---	---	---	---	33	40
	Characterization	---	5	---	---	---	---	2	---	---	---	---	---	---	---	---	7	
H.B. Robinson Steam Electric Plant																		
Ash Basin	Waste Boundary	---	12	---	---	---	---	---	---	---	12	---	---	---	3	12	39	45
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	6	
Mayo Steam Station																		
CCR Multicell (Ash Basin / FGD Forward Flush Pond / FGD Settling Pond)	Waste Boundary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CCP Monofill	Waste Boundary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WWT Basin	Waste Boundary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Roxboro Steam Station																		
CCR Unit 1 (East Ash Pond / Industrial Landfill)	Waste Boundary	---	---	---	---	---	---	7	---	---	3	---	6	6	---	---	22	59
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	
CCR Unit 2 (West Ash Basin / West and East FGD Settling Ponds / FGD Forward Flush Pond)	Waste Boundary	---	3	---	---	---	---	20	---	---	3	---	9	---	---	1	36	
	Characterization	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	1	
L.V. Sutton Energy Complex																		
Active Ash Basin	Waste Boundary	---	33	---	---	---	---	21	---	---	18	---	23	1	---	---	96	103
	Characterization	---	---	---	---	---	---	3	---	---	---	---	3	1	---	---	7	
Onsite CCR Landfill (CCP Landfill)	Waste Boundary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Weatherspoon Steam Station																		
1979 Ash Basin	Waste Boundary	---	3	---	---	---	---	1	---	---	---	---	---	---	---	4	8	8
	Characterization	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	

Total 277

Prepared by: ENK Checked by: CAG

Notes:
 NA - Not applicable. No assessment monitoring necessary due to Alternate Source Demonstration.
 --- - No SSLs

Public Staff calculated fields.

DEP 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: Bryson Allison (Engineer III), Kim Witt (Sr. Engineer), John Toepfer (Lead Engineer), Andrew Shull (Sr. Env. Specialist)

(2) Bryson Allison (Engineer III)

Nomenclature to identify CCR storage area				
Site	Facility Type	Facility Name	Month/Year GW Monitoring First	Source of Requirement
Asheville	Pond	1964 Ash Pond	December 2009	DENR letter directing monitoring at compliance boundary
Asheville	Pond	1982 Ash Pond	December 2009	DENR letter directing monitoring at compliance boundary
Cape Fear	Pond	1956 Pond	December 2009	DENR letter directing monitoring at compliance boundary
Cape Fear	Pond	1963 Pond	December 2009	DENR letter directing monitoring at compliance boundary
Cape Fear	Pond	1970 Pond	December 2009	DENR letter directing monitoring at compliance boundary
Cape Fear	Pond	1978 Pond	December 2009	DENR letter directing monitoring at compliance boundary
Cape Fear	Pond	1985 Pond	December 2009	DENR letter directing monitoring at compliance boundary
HF Lee	Pond	Ash Pond 1	December 2009	DENR letter directing monitoring at compliance boundary
HF Lee	Pond	Ash Pond 2	December 2009	DENR letter directing monitoring at compliance boundary
HF Lee	Pond	Ash Pond 3	December 2009	DENR letter directing monitoring at compliance boundary
HF Lee	Pond	Active Ash Pond	December 2009	DENR letter directing monitoring at compliance boundary
HF Lee	Pond	Polishing Pond	N/A	N/A
HF Lee	Fill	Lay of Land Area	May 2015	Coal Ash Management Act (CAMA)
Mayo	Pond	Ash Pond	December 2009	DENR letter directing monitoring at compliance boundary
Mayo	Landfill	CCP Monofill (landfill)	July 2013	NCDEQ Solid Waste
Mayo	Pond	FGD blowdown ponds	NA	NA - considered an unit within the ash basin
Mayo	lined Impoundmen	FGD Settling Basin (WWT)	September 2017	CCR Rule
Roxboro	Pond	West Ash Basin	March 1986	DENR letter dated March 26, 1986 requiring two wells installed below west ash basin dam and sampled for certain parameters
Roxboro	Pond	East Ash Pond	December 2009	DENR letter directing monitoring at compliance boundary
Roxboro	Landfill	Industrial Landfill	January 1987	NCDEQ Solid Waste
Roxboro	Fill	Ash fill for gypsum pad	April 2017	NCDEQ Solid Waste
Roxboro	Pond	FGD blowdown ponds	NA	NA - considered an unit within the ash basin
Sutton	Pond	1971 ash basin	March 1990	NPDES permit
Sutton	Pond	1984 ash basin	March 1990	NPDES permit
Sutton	Fill	Lay of Land Area (or Former Ash Disposal Area)	April 2015	Coal Ash Management Act (CAMA)
Weatherspoon	Pond	1979 ash pond	March 1990	NPDES permit
Robinson	Fill	1960 Fill Area	October 2019	Assessment Plan per Consent Agreement (15-HW-23)
Robinson	Pond	Ash Basin	June 1995	NPDES permit

DEC response to Public Staff Data Request No. 101-1 on March 2, 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	Prior to 1990			Prior to 2000			Prior to 2010			2013			2014		
		New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total
Asheville	3	0	0	3	0	0	3	5	0	8	18	1	25	7	1	31
Cape Fear	0	0	0	0	0	0	0	6	0	6	24	0	30	0	0	30
HF Lee	0	0	0	0	0	0	0	4	0	4	21	0	25	0	0	25
Mayo	0	0	0	0	0	0	0	4	4	0	4	9	0	13	0	13
Mayo Monofill	0	0	0	0	0	0	0	1	0	1	4	0	5	0	0	5
Robinson	0	0	0	0	4	0	4	0	0	4	40	4	40	40	4	76
Roxboro	0	5	0	5	0	0	5	5	0	10	9	0	19	0	0	19
Sutton	1	11	0	12	5	0	17	12	0	29	21	0	50	7	0	57
Weatherspoon	1	5	0	6	0	0	6	0	0	6	29	0	35	0	0	35
TOTAL	2	21	0	23	9	0	32	32	0	64	157	4	217	47	4	260

Site	2015			2016			2017			2018			In Place Today		
	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total
Asheville	64	10	85	12	11	86	22	0	108	14	0	122	2	3	121
Cape Fear	34	0	64	8	3	69	4	0	73	2	0	75	0	1	74
HF Lee	29	0	54	37	1	90	9	0	99	4	0	103	0	0	103
Mayo	21	0	34	20	0	54	4	2	56	32	1	87	19	1	105
Mayo Monofill	0	0	5	13	0	18	13	0	31	0	0	31	0	0	31
Robinson	4	0	80	14	1	93	0	24	69	9	0	78	9	0	87
Roxboro	40	0	59	59	0	118	18	0	136	4	4	136	23	0	159
Sutton	45	2	100	77	0	177	41	43	175	8	0	183	21	12	192
Weatherspoon	17	0	52	11	3	60	7	9	58	18	0	76	1	0	77
TOTAL	190	2	448	239	8	679	96	78	697	77	5	769	73	14	828

PS calculated fields.

	CAMA	CCR	SOLID WASTE	VOLUNTARY	MULTI-PROGRAM	UNKNOWN	OTHER	Total
Asheville	109	12	7	0	0	0	12	140
Cape Fear	48	0	0	11	0	0	18	77
HF Lee	48	25	0	4	6	0	21	104
Mayo	52	44	0	4	0	0	8	108
Mayo Mond	0	13	18	0	0	0	0	31
Robinson	0	26	4	0	6	0	44	80
Roxboro	97	47	9	0	0	0	10	163
Sutton	81	86	0	0	26	0	49	242
Weatherspd	40	14	0	0	0	0	35	89
TOTAL	475	267	38	19	38	0	197	1034

PS calculated fields.

Docket No. E-2, Subs 1219

Confidential Exhibit 19

Public Staff's Testimony of
Jay B. Lucas, Utilities Engineer
Electric Division

Costs through December 31, 2019
Docket No. E-2, Sub 1219

Public Staff
Lucas Exhibit 20

Plant	Project Identifier / Name	Actual Spend	Detailed description of project
Roxboro	ROXBORO-Roxboro S.E. Plant - Install 230kV	\$ 2,861,832	Installation of new power feed by Power Delivery from Roxboro Switchyard (230KV service including cable, transformer & breaker) to provide power to the FGD-WWT system (RX000139)
Roxboro	ROXBORO-Dry Bottom Ash Conversion	\$ 96,296,001	Installation of Remote Submerged Flight Conveyor (SFC) to collect bottom ash for transport to station landfill.
Roxboro	ROXBORO-Fly Ash Reliability	\$ 6,418,989	Installation of new equipment to increase the capacity of the Unit #2 Dry Fly Ash System and to eliminate the operation of the wet fly ash collection & transportation system to allow the ash basin to be retired.
Roxboro	ROXBORO-Fly Ash Reliability	\$ 10,839,954	Installation of new equipment to increase the capacity of the Unit #3 Dry Fly Ash System and to eliminate the operation of the wet fly ash collection & transportation system to allow the ash basin to be retired.
Roxboro	ROXBORO-Fly Ash Reliability	\$ 25,226	Installation of new equipment to increase the capacity of the Unit #4 Dry Fly Ash System and to eliminate the operation of the wet fly ash collection & transportation system to allow the ash basin to be retired.
Roxboro	ROXBORO-CCP Landfill Leachate Piping	\$ 7,436,882	Installation of a piping & pump system to collect the leachate from the East Ash Basin and route it to the new FGD-WWT system for treatment.
Mayo	MAYO-Enhanced FGD Wastewater Treatment	\$ 17,619,758	Installation of a new CCR compliant lined basin to hold the water generated by the FGD system prior to it being pumped to the evaporator system.
Mayo	MAYO-Storm Water/Process Water Reroute	\$ 29,225,182	Installation of new system to collect all station storm water & process water and to redirect the flow to the new lined retention basin
Mayo	MAYO-Lined Retention Basin	\$ 39,764,352	Installation of a new CCR compliant Lined Retention Basin to treat all water collected on site before it is discharged.
Roxboro	ROXBORO-FGD Wastewater Treatment	\$ 135,636,484	Installation of a new FGD Waste Water Treatment system to treat the water generated by the FGD system prior to it being discharged. System includes bio-reaction tanks, clarifiers, settling tanks, pumps & chemical injection systems.

Costs through December 31, 2019
Docket No. E-2, Sub 1219

Public Staff
Lucas Exhibit 20

Plant	Project Identifier / Name	Actual Spend	Detailed description of project
Roxboro	ROXBORO-Storm / Process Water Reroute	\$ 41,808,807	Installation of new system to collect all station storm water & process water and to redirect the flow to the new lined retention basin
Roxboro	ROXBORO-Lined Retention Basin	\$ 25,324,901	Installation of a new CCR compliant Lined Retention Basin to treat all water collected on site before it is discharged.
Roxboro	ROXBORO-Outage Warehouse Replacement	\$ 33,172	Installation of the New DBA SFC system required the land where the existing warehouse was located. A new warehouse was built to make the area available for the SFC.
TOTAL		\$ 413,291,539	

Docket No. E-2, Subs 1219

Confidential Exhibit 21

Public Staff's Testimony of
Jay B. Lucas, Utilities Engineer
Electric Division

Docket No. E-2, Subs 1219

Confidential Exhibit 22

Public Staff's Testimony of
Jay B. Lucas, Utilities Engineer
Electric Division

Docket No. E-2, Subs 1219

Confidential Exhibit 23

Public Staff's Testimony of
Jay B. Lucas, Utilities Engineer
Electric Division

Docket No. E-2, Subs 1219

Confidential Exhibit 24

Public Staff's Testimony of
Jay B. Lucas, Utilities Engineer
Electric Division

(Reporter's Note: Per transcript volume 15, page 1821, lines 11 and 12, and transcript volume 16, page 19, line 2, this exhibit was identified and admitted as Lucas/Maness Public Staff Redirect Exhibit 2. ktm

I/A Maness Lucas Public Staff Redirect Exhibit 2

**Duke Energy Progress
Response to
NC Public Staff Data Request
Data Request No. NCPS 163**

Public Staff Redirect 78

Docket No. E-2, Sub 1219

Date of Request: March 12, 2020

Date of Response: March 23, 2020

CONFIDENTIAL

NOT CONFIDENTIAL

Confidential Responses are provided pursuant to Confidentiality Agreement

The attached response to NC Public Staff Data Request No. 163-1, was provided to me by the following individual(s): Trudy Morris, Project Manager II, and was provided to NC Public Staff under my supervision.

Camal. O. Robinson
Associate General Counsel
Duke Energy Progress

North Carolina Public Staff
Data Request No. 163
DEP Docket No. E-2, Sub 1219
Item No. 163-1
Page 1 of 4

Request:

1. Please provide the Company's best estimate of the cost at the time and a calculation of the present value of such a cost to implement the following actions at each of its current and former coal-fired plants:

a. Implementation, including installation, monitoring, and associated costs, of groundwater monitoring starting with 2 downgradient wells at or near the waste boundary and 1 upgradient (background) well, and over a period of three years installing an additional 10 downgradient wells at the compliance boundary and 3 upgradient wells, assuming implementation was started in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000

b. Installation and monitoring of approximately 50 groundwater monitoring wells at varying locations and depths assuming implementation took two years and was started in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004

c. Installation and monitoring of approximately 100 groundwater monitoring wells at varying locations and depths assuming implementation took two years and was started in the following years:

- i. 2010
- ii. 2014

d. Installation, operation, and maintenance of groundwater extraction and treatment systems near each unlined surface impoundment assuming implementation was started the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

e. Conversion to dry fly ash handling utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

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Item No. 163-1
Page 2 of 4

f. Conversion to dry bottom ash handling utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

g. Closure by cap in place of all unlined impoundments utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

h. Closure by excavation of all unlined impoundments and disposal in an onsite lined landfill utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

i. Closure by excavation of all unlined impoundments and disposal in an offsite lined landfill utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

j. Construction and operation of an onsite lined landfill to receive production coal ash utilizing the best available technology of the time assuming a plant retirement in 2010 and starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

k. Construction and operation of an onsite lined landfill to receive production coal ash utilizing the best available technology of the time assuming a plant retirement in 2020 and starting in the following years:

- i. 1979
- ii. 1984

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- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

l. Construction and operation of an onsite lined landfill to receive production coal ash utilizing the best available technology of the time assuming a plant retirement in 2030 and starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

m. Construction, operation, and maintenance of a lined surface impoundment to replace all unlined basins utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

n. Construction, operation, and maintenance of a wastewater treatment plant to replace all unlined coal ash basins utilizing the best available technology of the time starting in the following years:

- i. 1979
- ii. 1984
- iii. 1988
- iv. 2000
- v. 2004
- vi. 2010

Response:

DEP's Response to PSDR 163-1 and all of its subparts:

By this request, the Public Staff is asking the Company to generate hypothetical estimates in five days that no intervenor has been able to generate in three years, and which the Public Staff indicates would be speculative. See Junis Direct T., Docket E-7, Sub 1214, at 65:10-13 ("Even where some Company actions or omissions appear imprudent, such as failure to deploy a comprehensive groundwater monitoring system at a much earlier date, quantification of costs directly resulting from the acts or omissions would be speculative.") The Company agrees with the Public Staff's statement above; estimates of the nature requested by the Public Staff would be speculative and therefore unreliable. Using 20/20 hindsight to develop site-specific estimates for activities covering

North Carolina Public Staff
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a four-decade span of time would, as Commissioner Clodfelter indicates, “require the impossible construction and evaluation of several different alternative histories and realities.” (2017 DEP Rate Case Order, Clodfelter Dissent, at 13).

DEC response to Public Staff Data Request No. 101-1 on March 2, 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	Prior to 1990			Prior to 2000			Prior to 2010			2013			2014		
		New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total
Asheville	3	0	0	3	0	0	3	5	0	8	18	1	25	7	1	31
Cape Fear	0	0	0	0	0	0	0	6	0	6	24	0	30	0	0	30
HF Lee	0	0	0	0	0	0	0	4	0	4	21	0	25	0	0	25
Mayo	0	0	0	0	0	0	0	4	4	0	4	9	0	13	0	13
Mayo Monofill	0	0	0	0	0	0	0	1	0	1	4	0	5	0	0	5
Robinson	0	0	0	0	4	0	4	0	0	4	40	4	40	40	4	76
Roxboro	0	5	0	5	0	0	5	5	0	10	9	0	19	0	0	19
Sutton	1	11	0	12	5	0	17	12	0	29	21	0	50	7	0	57
Weatherspoon	1	5	0	6	0	0	6	0	0	6	29	0	35	0	0	35
TOTAL	5	21	0	26	9	0	35	37	0	72	175	5	242	54	5	291

Site	2015			2016			2017			2018			In Place Today		
	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total	New	Aband	New Total
Asheville	64	10	85	12	11	86	22	0	108	14	0	122	2	3	121
Cape Fear	34	0	64	8	3	69	4	0	73	2	0	75	0	1	74
HF Lee	29	0	54	37	1	90	9	0	99	4	0	103	0	0	103
Mayo	21	0	34	20	0	54	4	2	56	32	1	87	19	1	105
Mayo Monofill	0	0	5	13	0	18	13	0	31	0	0	31	0	0	31
Robinson	4	0	80	14	1	93	0	24	69	9	0	78	9	0	87
Roxboro	40	0	59	59	0	118	18	0	136	4	4	136	23	0	159
Sutton	45	2	100	77	0	177	41	43	175	8	0	183	21	12	192
Weatherspoon	17	0	52	11	3	60	7	9	58	18	0	76	1	0	77
TOTAL	254	12	533	251	19	765	118	78	805	91	5	891	75	17	949

PS calculated fields.

	CAMA	CCR	SOLID WASTE	VOLUNTARY	MULTI-PROGRAM	UNKNOWN	OTHER	Total
Asheville	109	12	7	0	0	0	12	140
Cape Fear	48	0	0	11	0	0	18	77
HF Lee	48	25	0	4	6	0	21	104
Mayo	52	44	0	4	0	0	8	108
Mayo Monofill	0	13	18	0	0	0	0	31
Robinson	0	26	4	0	6	0	44	80
Roxboro	97	47	9	0	0	0	10	163
Sutton	81	86	0	0	26	0	49	242
Weatherspoon	40	14	0	0	0	0	35	89
TOTAL	475	267	38	19	38	0	197	1034

PS calculated fields.

Docket No. E-2, Subs 1219

Confidential Exhibit (19)

Public Staff's Supplemental Testimony of

Jay B. Lucas, Utilities Engineer
Electric Division

Duke Energy Progress
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED
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	\$ 267,472 ^{1/}
2	Years to Amortize	<u>27</u> ^{2/}
3	Annual amortize per Public Staff (L1 / L2)	9,906
4	Annual amortization per Company	<u>97,621</u> ^{3/}
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (87,715)</u>
6	Statutory tax rate	23.1693005% ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 20,323</u>
Rate base impact		
8	Coal Ash Balance at February 1, 2018 per Public Staff (L1)	\$ 267,472
9	Less annual amortization (-L3)	<u>(9,906)</u>
10	Adjusted Coal Ash Deferral Balance per Public Staff (L8 + L9)	257,566
11	Coal Ash Deferral Balance per Company	<u>390,485</u> ^{5/}
12	Public Staff adjustment to coal ash deferral balance (L10 - L11)	(132,919)
13	Adjustment to remove total coal ash deferral balance from rate base (-L10)	<u>(257,566)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (390,485)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 90,473</u>

- 1/ Maness Exhibit I, Schedule 1-1, Line 37, Column (n).
2/ Amortization period recommended by Public Staff.
3/ NCUC E-1, Item 10, NC-1101, ARO column, Line 8.
4/ NCUC E-1, Item 10, NC-1101, Line 10 (unrounded).
5/ NCUC E-1, Item 10, NC-1101, ARO column, Line 20.

Duke Energy Progress
Docket No. E-2, Sub 1219
North Carolina Retail Operations
AMORTIZATION SCHEDULE FOR DEFERRED
ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Exhibit I
 Schedule 1-1

Line No.	Description	Duke Energy Progress Coal Ash Spend			Duke Energy Progress 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 Before Current Year Return 5/	NC Spend 6/	Active Plant COR Offset 7/	Retired Coal Ash Plant Offset 8/	Ending Balance Before Current Year Return 9/	NC Balance for Return 11/	Deferred Cost of Debt 12/	Deferred Cost of Equity 13/	Total Return 14/	Ending Balance After Return 15/	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
1	Aug-17									\$ -						
2	Sep-17	\$ 14,127	\$ (4,215)	\$ 9,912	60.8102%	\$ -	\$ 6,027	\$ (204)	\$ (642)	\$ 5,181	\$ 2,591	\$ 3	\$ 12	\$ 15	\$ 5,196	
3	Oct-17	13,925	(4,279)	9,647	60.8102%	5,181	5,866	(204)	(642)	10,201	7,691	9	35	43	10,259	
4	Nov-17	10,320	(3,072)	7,248	60.8102%	10,201	4,407	(204)	(642)	13,763	11,982	13	54	67	13,888	
5	Dec-17	16,303	(4,822)	11,481	60.8102%	13,763	6,981	(204)	(642)	19,898	16,830	19	76	95	20,118	
6	Jan-18	11,674	(3,546)	8,128	60.8102%	20,118	4,943	(204)	(642)	24,215	22,166	30	100	130	24,345	
7	Feb-18	14,437	(4,737)	9,700	60.8102%	24,215	5,899	(204)	(642)	29,267	26,741	37	120	157	29,554	
8	Mar-18	16,035	(4,622)	11,413	60.8102%	29,267	6,940	(102)	(321)	35,784	32,526	40	140	180	36,251	
9	Apr-18	12,731	(3,883)	8,847	60.8452%	35,784	5,383	-	-	41,167	38,476	48	165	213	41,847	
10	May-18	16,344	(7,078)	9,266	60.8452%	41,167	5,638	-	-	46,805	43,986	55	189	243	47,729	
11	Jun-18	13,183	(2,370)	10,813	60.8452%	46,805	6,579	-	-	53,385	50,095	62	215	277	54,585	
12	Jul-18	9,841	(2,980)	6,861	60.8452%	53,385	4,175	-	-	57,559	55,472	69	238	307	59,066	
13	Aug-18	18,187	(5,573)	12,614	60.8452%	57,559	7,675	-	-	65,234	61,397	76	263	339	67,080	
14	Sep-18	14,296	(4,493)	9,803	60.8452%	65,234	5,965	-	-	71,199	68,217	85	293	377	73,423	
15	Oct-18	17,795	(5,465)	12,330	60.8452%	71,199	7,502	-	-	78,701	74,950	93	322	414	81,339	
16	Nov-18	16,803	(5,000)	11,803	60.8452%	78,701	7,182	-	-	85,883	82,292	102	353	455	88,976	
17	Dec-18	25,440	(7,598)	17,842	60.8452%	85,883	10,856	-	-	96,739	91,311	113	392	505	100,337	
18	Jan-19	20,084	(5,901)	14,183	60.8452%	100,337	8,630	-	-	108,966	104,651	130	449	579	109,545	
19	Feb-19	22,836	(6,678)	16,158	60.8452%	108,966	9,831	-	-	118,797	113,882	142	489	630	120,007	
20	Mar-19	24,329	(7,091)	17,238	60.8452%	118,797	10,489	-	-	129,286	124,042	154	532	687	131,182	
21	Apr-19	31,140	(9,117)	22,023	60.8452%	129,286	13,400	-	-	142,686	135,986	169	583	753	145,335	
22	May-19	38,852	(11,312)	27,540	60.8452%	142,686	16,757	-	-	159,443	151,064	188	648	836	162,928	
23	Jun-19	21,872	(6,440)	15,432	61.1093%	159,443	9,430	-	-	168,873	164,158	204	704	909	173,267	
24	Jul-19	14,696	(4,404)	10,292	61.1093%	168,873	6,289	-	-	175,163	172,018	214	738	952	180,508	
25	Aug-19	72,418	(21,051)	51,367	61.1093%	175,163	31,390	-	-	206,553	190,858	238	819	1,056	212,954	
26	Sep-19	36,936	(44,407)	(7,471)	61.1093%	206,553	(4,565)	-	-	201,987	204,270	254	876	1,131	209,520	
27	Oct-19	32,421	(9,491)	22,930	61.1093%	201,987	14,012	-	-	216,000	208,994	260	897	1,157	224,689	
28	Nov-19	32,053	(9,308)	22,745	61.1093%	216,000	13,899	-	-	229,899	222,949	277	956	1,234	239,822	
29	Dec-19	34,964	(10,424)	24,539	61.1093%	229,899	14,996	-	-	244,895	237,397	295	1,018	1,314	256,131	
30	Jan-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	257,549	
31	Feb-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	258,967	
32	Mar-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	260,384	
33	Apr-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	261,802	
34	May-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	263,219	
35	Jun-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	264,637	
36	Jul-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	266,055	
37	Aug-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	267,472	
38	Sep-20	-	-	-	61.1093%	256,131	-	-	-	256,131	256,131	319	1,099	1,418	268,890	
39	Total	\$ 624,044	\$ (219,360)	\$ 404,684			\$ 246,576	\$ (1,324)	\$ (4,176)		\$ 5,930	\$ 20,465	\$ 26,396			

1/ Actual amounts through December 2019, provided by the Company to the Public Staff.

2/ Maness Exhibit I, Schedule 1-2, Column (g).

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

4/ NCUC E-1, Item 10, NC-1102, Column (d).

5/ NC Ending Balance Before Return for prior month from Column (i), except as otherwise footnoted.

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

7/ NCUC E-1, Item 10, NC-1102, Column (g).

8/ NCUC E-1, Item 10, NC-1102, Column (h).

9/ Sum of Columns (e) through (h).

10/ NC Ending Balance Before Return for prior month from Column (i) plus total return for prior calendar year from Column (m).

11/ Column (e) plus (Sum of Column (f) thru (h) divided by 2).

12/ Column (j) times after tax cost of debt for year from NC-1102 divided by twelve.

13/ Column (j) times after tax cost of equity for year from NC-1102 divided by twelve.

14/ Column (k) plus Column (l).

15/ Column (i) plus total return for year to date from Column (m).

Duke Energy Progress
Docket No. E-2, Sub 1219
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

Line No.	Month	Charah Fulfillment Fee Adjustment 1/	Asheville Transportation Adjustment 2/	Lee Beneficiation Units 3/	Cape Fear Beneficiation Units 3/	Remove Costs of Extraction and Treatment of Contaminated Groundwater 4/	Permanent Alternative Water Supplies and Treatment Systems 4/	Total Public Staff Adjustment 5/
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Sep-17	\$ -	\$ (1,137)	\$ (1,479)	\$ (1,472)	\$ (57)	\$ (70)	\$ (4,215)
2	Oct-17	-	(1,121)	(1,458)	(1,451)	(219)	(30)	(4,279)
3	Nov-17	-	(831)	(1,080)	(1,075)	(62)	(24)	(3,072)
4	Dec-17	-	(1,312)	(1,707)	(1,699)	(68)	(36)	(4,822)
5	Jan-18	-	(940)	(1,222)	(1,216)	(133)	(35)	(3,546)
6	Feb-18	-	(1,162)	(1,511)	(1,504)	(239)	(320)	(4,737)
7	Mar-18	-	(1,291)	(1,678)	(1,671)	(55)	74	(4,622)
8	Apr-18	-	(1,025)	(1,333)	(1,327)	(7)	(192)	(3,883)
9	May-18	-	(1,316)	(1,711)	(1,703)	(0)	(2,348)	(7,078)
10	Jun-18	-	(1,061)	(1,380)	(1,374)	(33)	1,478	(2,370)
11	Jul-18	-	(792)	(1,030)	(1,025)	(2)	(130)	(2,980)
12	Aug-18	-	(1,464)	(1,904)	(1,895)	(1)	(308)	(5,573)
13	Sep-18	-	(1,151)	(1,496)	(1,490)	-	(356)	(4,493)
14	Oct-18	-	(1,433)	(1,863)	(1,854)	-	(316)	(5,465)
15	Nov-18	-	(1,353)	(1,759)	(1,751)	(27)	(111)	(5,000)
16	Dec-18	-	(2,048)	(2,663)	(2,651)	(1)	(235)	(7,598)
17	Jan-19	-	(1,617)	(2,102)	(2,093)	-	(89)	(5,901)
18	Feb-19	-	(1,838)	(2,390)	(2,380)	(36)	(34)	(6,678)
19	Mar-19	-	(1,959)	(2,547)	(2,535)	-	(51)	(7,091)
20	Apr-19	-	(2,507)	(3,260)	(3,245)	(6)	(99)	(9,117)
21	May-19	-	(3,128)	(4,067)	(4,049)	(16)	(54)	(11,312)
22	Jun-19	-	(1,761)	(2,289)	(2,279)	(58)	(52)	(6,440)
23	Jul-19	-	(1,183)	(1,538)	(1,531)	(22)	(130)	(4,404)
24	Aug-19	-	(5,830)	(7,580)	(7,546)	(82)	(13)	(21,051)
25	Sep-19	(33,670)	(2,974)	(3,866)	(3,849)	(23)	(25)	(44,407)
26	Oct-19	-	(2,610)	(3,394)	(3,378)	(67)	(42)	(9,491)
27	Nov-19	-	(2,580)	(3,355)	(3,340)	-	(33)	(9,308)
28	Dec-19	-	(2,815)	(3,660)	(3,643)	(24)	(283)	(10,424)
29	Total	<u>\$ (33,670)</u>	<u>\$ (50,239)</u>	<u>\$ (65,321)</u>	<u>\$ (65,027)</u>	<u>\$ (1,240)</u>	<u>\$ (3,862)</u>	<u>\$ (219,360)</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 Lucas.

5/ Sum of Columns (a) thru (f).

DUKE ENERGY PROGRESS
Docket No. E-2, Sub 1219
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

Line No.	Item	NC Retail Amount
Income statement impact		
1	Balance for Amortization	\$ 42,005 1/
2	Years to Amortize	<u>10 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	4,201
4	Annual amortization per Company	<u>8,262 3/</u>
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	<u>\$ (4,062)</u>
6	Statutory tax rate	<u>23.16930% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 941</u>
Rate base impact		
8	Deferred balance of non-ARO environmental costs (L1)	\$ 42,005
9	Annual amortization (-L3)	<u>(4,201)</u>
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	37,805
11	Deferred non-ARO regulatory asset per Company	<u>33,047 5/</u>
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	<u>\$ 4,758</u>
13	Adjustment to ADIT (-L12 x L6)	<u>\$ (1,102)</u>

- 1/ Updated spend provided by the Company at the Public Staff's request; no spending after 12/31/19 is included. Depreciation and carrying costs included through August 2020. Calculated using SWPA allocation factors.
- 2/ Amortization period recommended by Public Staff.
- 3/ NCUC E-1, Item 10, NC-1101, Non-ARO column, Line 8 (except calculated using SWPA allocation factors).
- 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, Non-ARO column, Line 20 (except calculated using SWPA allocation factors).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
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/}	\$5,055,072 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$207,763 ^{5/}	
2	Common equity	50.000% ^{1/}	5,055,072 ^{2/}	9.000% ^{1/}	4.500% ^{4/}	454,956 ^{6/}	
3	Total (L1 + L2)	<u>100.000%</u>	<u>\$10,110,143</u> ^{3/}		<u>6.555%</u>	<u>\$662,719</u> ^{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)	Basis Point Impact (f)
4	Long-term debt	50.000% ^{1/}	\$5,062,332 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$208,062 ^{5/}	
5	Common equity	50.000% ^{1/}	5,062,332 ^{2/}	8.966% ^{9/}	4.483% ^{4/}	453,900 ^{6/}	(3) ^{11/}
6	Total (L4 + L5)	<u>100.000%</u>	<u>\$10,124,664</u> ^{8/}		<u>6.538%</u>	<u>\$661,962</u> ^{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)	Basis Point Impact (f)
7	Long-term debt	50.000% ^{1/}	\$5,088,639 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$209,143 ^{5/}	
8	Common equity	50.000% ^{1/}	5,088,639 ^{2/}	8.864% ^{9/}	4.432% ^{4/}	451,061 ^{6/}	(14) ^{14/}
9	Total (L7 + L8)	<u>100.000%</u>	<u>\$10,177,278</u> ^{12/}		<u>6.487%</u>	<u>\$660,204</u> ^{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)	Basis Point Impact (f)
10	Long-term debt	50.000% ^{1/}	\$5,118,567 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$210,373 ^{5/}	
11	Common equity	50.000% ^{1/}	5,118,567 ^{2/}	8.754% ^{9/}	4.377% ^{4/}	448,079 ^{6/}	(25) ^{17/}
12	Total (L10 + L11)	<u>100.000%</u>	<u>\$10,237,134</u> ^{15/}		<u>6.432%</u>	<u>\$658,452</u> ^{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/ Dorgan Exhibit 1, Schedule 2, Line 16, Column (e).

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/ Dorgan Exhibit 1, Schedule 3, Line 17, Column (e).

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.

Duke Energy Progress
Docket No. E-2, Subs 1193 and 1219
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 Exhibit I
Schedule 1

Line No.	Item	NC Retail Amount
Income statement impact		
1	Balance for Amortization	\$ 293,101 ^{1/}
2	Years to Amortize	<u>25</u> ^{2/}
3	Annual amortization per Public Staff (L1 / L2)	11,724
4	Annual amortization per Company	<u>88,023</u> ^{3/}
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (76,299)</u>
6	Statutory tax rate	23.1693005% ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 17,678</u>
Rate base impact		
8	Coal Ash Balance at September 1, 2020 per Public Staff (L1)	\$ 293,101
9	Less annual amortization (-L3)	<u>(11,724)</u>
10	Adjusted Coal Ash Deferral Balance per Public Staff (L8 + L9)	281,377
11	Coal Ash Deferral Balance per Company	<u>352,092</u> ^{5/}
12	Public Staff adjustment to coal ash deferral balance (L10 - L11)	(70,715)
13	Adjustment to remove total coal ash deferral balance from rate base (-L10)	<u>(281,377)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (352,092)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 81,577</u>

1/ Maness Second Revised Exhibit I, Schedule 1-1, Line 37, Column (n).

2/ Amortization period recommended by Public Staff.

3/ Smith Second Settlement Exhibit 1, NC-1101, ARO column, Line 8.

4/ Smith Second Settlement Exhibit 1, NC-1101, Line 10 (unrounded).

5/ Smith Second Settlement Exhibit 1, NC-1101, ARO column, Line 20.

Duke Energy Progress
Docket No. E-2, Subs 1193 and 1219
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 Second Revised Exhibit I
Schedule 1-1

Line No.	Description	Duke Energy Progress Coal Ash Spend			% to NC for Spend	Duke Energy Progress Coal Ash Deferral (North Carolina)									
		System Spend per Company	Public Staff Adjustments	System Spend per Public Staff		Beginning Balance Before Current Year Return	NC Spend	Active Plant COR Offset	Retired Coal Ash Plant Offset	Ending Balance Before Current Year Return	NC Balance for Return	Deferred Cost of Debt	Deferred Cost of Equity	Total Return	Ending Balance After Return
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1	Aug-17										\$ -				
2	Sep-17	\$ 14,127	\$ (3,970)	\$ 10,157	60.8102%	\$ -	\$ 6,177	\$ (204)	\$ (642)	\$ 5,330	\$ 2,665	\$ 3	\$ 12	\$ 15	\$ 5,345
3	Oct-17	13,925	(4,037)	9,888	60.8102%	5,330	6,013	(204)	(642)	10,497	7,914	9	36	45	10,557
4	Nov-17	10,320	(2,893)	7,427	60.8102%	10,497	4,516	(204)	(642)	14,167	12,332	14	56	69	14,296
5	Dec-17	16,303	(4,540)	11,764	60.8102%	14,167	7,153	(204)	(642)	20,475	17,321	20	78	98	20,701
6	Jan-18	11,674	(3,344)	8,331	60.8102%	20,701	5,066	(204)	(642)	24,921	22,811	31	103	134	25,055
7	Feb-18	14,437	(4,486)	9,950	60.8102%	24,921	6,051	(204)	(642)	30,126	27,523	38	124	162	30,421
8	Mar-18	16,035	(4,344)	11,691	60.8102%	30,126	7,109	(102)	(321)	36,812	33,469	41	144	185	37,293
9	Apr-18	12,731	(3,663)	9,068	60.8452%	36,812	5,518	-	-	42,330	39,571	49	170	219	43,029
10	May-18	16,344	(6,795)	9,550	60.8452%	42,330	5,811	-	-	48,140	45,235	56	194	250	49,090
11	Jun-18	13,183	(2,142)	11,042	60.8452%	48,140	6,718	-	-	54,858	51,499	64	221	285	56,093
12	Jul-18	9,841	(2,809)	7,032	60.8452%	54,858	4,278	-	-	59,137	56,998	71	245	315	60,686
13	Aug-18	18,187	(5,257)	12,930	60.8452%	59,137	7,867	-	-	67,004	63,070	78	271	349	68,902
14	Sep-18	14,296	(4,245)	10,051	60.8452%	67,004	6,116	-	-	73,120	70,062	87	301	387	75,405
15	Oct-18	17,795	(5,156)	12,638	60.8452%	73,120	7,690	-	-	80,810	76,965	95	330	426	83,521
16	Nov-18	16,803	(4,709)	12,095	60.8452%	80,810	7,359	-	-	88,169	84,489	105	362	467	91,347
17	Dec-18	25,440	(7,156)	18,284	60.8452%	88,169	11,125	-	-	99,293	93,731	116	402	518	102,990
18	Jan-19	20,084	(5,553)	14,531	60.8452%	102,990	8,842	-	-	111,831	107,411	134	461	594	112,426
19	Feb-19	22,836	(6,282)	16,554	60.8452%	111,831	10,072	-	-	121,904	116,868	145	501	647	123,145
20	Mar-19	24,329	(6,669)	17,660	60.8452%	121,904	10,745	-	-	132,649	127,276	158	546	704	134,595
21	Apr-19	31,140	(8,577)	22,564	60.8452%	132,649	13,729	-	-	146,378	139,514	174	599	772	149,096
22	May-19	38,852	(10,638)	28,214	60.8452%	146,378	17,167	-	-	163,545	154,961	193	665	858	167,120
23	Jun-19	21,872	(6,061)	15,812	61.1093%	163,545	9,662	-	-	173,207	168,376	210	722	932	177,175
24	Jul-19	14,696	(4,149)	10,547	61.1093%	173,207	6,445	-	-	179,652	176,430	220	757	976	185,136
25	Aug-19	72,418	(19,795)	52,623	61.1093%	179,652	32,158	-	-	211,810	195,731	244	840	1,083	218,377
26	Sep-19	36,936	(43,766)	(6,830)	61.1093%	211,810	(4,174)	-	-	207,636	209,723	261	900	1,161	215,364
27	Oct-19	32,421	(8,928)	23,493	61.1093%	207,636	14,356	-	-	221,992	214,814	267	922	1,189	230,909
28	Nov-19	32,053	(8,752)	23,301	61.1093%	221,992	14,239	-	-	236,231	229,112	285	983	1,268	246,416
29	Dec-19	34,964	(9,818)	25,146	61.1093%	236,231	15,366	-	-	251,598	243,915	304	1,046	1,350	263,133
30	Jan-20	13,781	(3,823)	9,958	61.1093%	263,133	6,085	-	-	269,218	266,175	331	1,142	1,473	270,691
31	Feb-20	26,016	(7,093)	18,923	61.1093%	269,218	11,564	-	-	280,781	275,000	342	1,180	1,522	283,777
32	Mar-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	285,331
33	Apr-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	286,885
34	May-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	288,439
35	Jun-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	289,993
36	Jul-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	291,547
37	Aug-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	293,101
38	Sep-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Total	\$ 663,841	\$ (219,450)	\$ 444,391			\$ 270,823	\$ (1,324)	\$ (4,176)			\$ 6,241	\$ 21,537	\$ 27,778	

1/ Smith Second Settlement Exhibit 1, NC-1102 Column (a).
2/ Maness Second Revised Exhibit I, Schedule 1-2, Column (g).
3/ Column (a) plus Column (b).
4/ Smith Second Settlement Exhibit 1, NC-1102 Column (d).
5/ NC Ending Balance for prior month from Column (i), unless otherwise footnoted.
6/ Column (c) times Column (d).
7/ Smith Second Settlement Exhibit 1, NC-1102 Column (g).
8/ Smith Second Settlement Exhibit 1, NC-1102 Column (h).
9/ Sum of Columns (e) through (h).
10/ Column (e) plus (Sum of Columns (f) thru (h), divided by 2).
11/ Column (i) multiplied by after tax cost of debt for year from NC-1107 divided by twelve.
12/ Column (j) multiplied by after tax cost of equity for year from NC-1107 divided by twelve.
13/ Column (k) plus Column (l).
14/ Column (i) plus total return for year to date from Column (m).

Duke Energy Progress
Docket No. E-2, Subs 1193 and 1219
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 Exhibit I
Schedule 1-2

Line No.	Month	Charah Fulfillment Fee Adjustment ^{1/}	Asheville Transportation Adjustment ^{2/}	Lee Beneficiation Units ^{3/}	Cape Fear Beneficiation Units ^{3/}	Remove Costs of Extraction and Treatment of Contaminated Groundwater ^{4/}	Permanent Alternative Water Supplies and Treatment Systems ^{4/}	Total Public Staff Adjustment ^{5/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Sep-17	\$ -	\$ (1,069)	\$ (1,390)	\$ (1,384)	\$ (57)	\$ (70)	\$ (3,970)
2	Oct-17	-	(1,054)	(1,370)	(1,364)	(219)	(30)	(4,037)
3	Nov-17	-	(781)	(1,015)	(1,011)	(62)	(24)	(2,893)
4	Dec-17	-	(1,234)	(1,604)	(1,597)	(68)	(36)	(4,540)
5	Jan-18	-	(883)	(1,149)	(1,144)	(133)	(35)	(3,344)
6	Feb-18	-	(1,093)	(1,421)	(1,414)	(239)	(320)	(4,486)
7	Mar-18	-	(1,213)	(1,578)	(1,571)	(55)	74	(4,344)
8	Apr-18	-	(963)	(1,253)	(1,247)	(7)	(192)	(3,663)
9	May-18	-	(1,237)	(1,608)	(1,601)	(0)	(2,348)	(6,795)
10	Jun-18	-	(998)	(1,297)	(1,291)	(33)	1,478	(2,142)
11	Jul-18	-	(745)	(968)	(964)	(2)	(130)	(2,809)
12	Aug-18	-	(1,376)	(1,790)	(1,782)	(1)	(308)	(5,257)
13	Sep-18	-	(1,082)	(1,407)	(1,400)	-	(356)	(4,245)
14	Oct-18	-	(1,347)	(1,751)	(1,743)	-	(316)	(5,156)
15	Nov-18	-	(1,272)	(1,653)	(1,646)	(27)	(111)	(4,709)
16	Dec-18	-	(1,925)	(2,503)	(2,492)	(1)	(235)	(7,156)
17	Jan-19	-	(1,520)	(1,976)	(1,967)	-	(89)	(5,553)
18	Feb-19	-	(1,728)	(2,247)	(2,237)	(36)	(34)	(6,282)
19	Mar-19	-	(1,841)	(2,394)	(2,383)	-	(51)	(6,669)
20	Apr-19	-	(2,357)	(3,064)	(3,050)	(6)	(99)	(8,577)
21	May-19	-	(2,940)	(3,823)	(3,806)	(16)	(54)	(10,638)
22	Jun-19	-	(1,655)	(2,152)	(2,143)	(58)	(52)	(6,061)
23	Jul-19	-	(1,112)	(1,446)	(1,440)	(22)	(130)	(4,149)
24	Aug-19	-	(5,481)	(7,126)	(7,094)	(82)	(13)	(19,795)
25	Sep-19	(33,670)	(2,795)	(3,634)	(3,618)	(23)	(25)	(43,766)
26	Oct-19	-	(2,454)	(3,190)	(3,176)	(67)	(42)	(8,928)
27	Nov-19	-	(2,426)	(3,154)	(3,140)	-	(33)	(8,752)
28	Dec-19	-	(2,646)	(3,440)	(3,425)	(24)	(283)	(9,818)
29	Jan-20	-	(1,043)	(1,356)	(1,350)	-	(74)	(3,823)
30	Feb-20	-	(1,969)	(2,560)	(2,548)	-	(16)	(7,093)
31	Total	<u>\$ (33,670)</u>	<u>\$ (50,239)</u>	<u>\$ (65,321)</u>	<u>\$ (65,027)</u>	<u>\$ (1,240)</u>	<u>\$ (3,953)</u>	<u>\$ (219,450)</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 Lucas.

5/ Sum of Columns (a) thru (f).

Duke Energy Progress
Docket No. E-2, Subs 1193 and 1219
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 Exhibit I
Schedule 1-3

NET-OF-TAX RATE OF RETURN

Line No.	Item	Capital Structure ^{1/}	Embedded Costs ^{1/}	Weighted Cost Rates ^{2/}	Income Tax Factors	Net-of-Tax Weighted Cost Rates ^{4/}
		(a)	(b)	(c)	(d)	(e)
1	Long-term debt	48.00%	4.045%	1.9416%	0.7683070 ^{3/}	1.4917%
2	Common equity	52.00%	9.600%	4.9920%	1.00000	4.9920%
3	Total (L1 + L2)	<u>100.00%</u>		<u>6.9336%</u>		<u>6.4837%</u>

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	\$ 293,101 ^{5/}
5	Present value of ADIT (L4 x Schedule 1, Line 6).	(67,909) ^{6/}
6	Net-of-tax Present value (L4 + L5)	<u>\$ 225,191</u>
7	Amortization period	<u>25.00</u> ^{7/}

SHARING CALCULATION

	Amortization Year	Annual Amortization ^{8/}	Income Tax Expense ^{10/}	Net-of-Tax Expense ^{11/}	Discount factor ^{12/}	Discounted Net-of-Tax Expense ^{13/}
		(a)	(b)	(c)	(d)	(e)
8	1	\$ 11,724	\$ (2,716)	\$ 9,008	0.9695552	\$ 8,733
9	2	11,724	(2,716)	9,008	0.9105195	8,202
10	3	11,724	(2,716)	9,008	0.8550784	7,702
11	4	11,724	(2,716)	9,008	0.8030131	7,233
12	5	11,724	(2,716)	9,008	0.7541180	6,793
13	6	11,724	(2,716)	9,008	0.7082001	6,379
14	7	11,724	(2,716)	9,008	0.6650781	5,991
15	8	11,724	(2,716)	9,008	0.6245818	5,626
16	9	11,724	(2,716)	9,008	0.5865513	5,283
17	10	11,724	(2,716)	9,008	0.5508365	4,962
18	11	11,724	(2,716)	9,008	0.5172963	4,660
19	12	11,724	(2,716)	9,008	0.4857984	4,376
20	13	11,724	(2,716)	9,008	0.4562184	4,109
21	14	11,724	(2,716)	9,008	0.4284394	3,859
22	15	11,724	(2,716)	9,008	0.4023520	3,624
23	16	11,724	(2,716)	9,008	0.3778529	3,404
24	17	11,724	(2,716)	9,008	0.3548457	3,196
25	18	11,724	(2,716)	9,008	0.3332393	3,002
26	19	11,724	(2,716)	9,008	0.3129485	2,819
27	20	11,724	(2,716)	9,008	0.2938932	2,647
28	21	11,724	(2,716)	9,008	0.2759982	2,486
29	22	11,724	(2,716)	9,008	0.2591928	2,335
30	23	11,724	(2,716)	9,008	0.2434107	2,193
31	24	11,724	(2,716)	9,008	0.2285895	2,059
32	25	11,724	(2,716)	9,008	0.2146708	1,934
33	26	-	-	-	0.2015996	-
34	27	-	-	-	0.1893243	-
35	28	-	-	-	0.1777964	-
36	29	-	-	-	0.1669705	-
37	30	-	-	-	0.1568037	-
38	Total	<u>\$ 293,101</u>	<u>\$ (67,909)</u>	<u>\$ 225,191</u>		<u>\$ 113,607</u>

39 Ratepayer-borne percentage of net-of-tax present value cost 50.449% ^{14/}

40 Shareholder-borne percentage of net-of-tax present value cost (1 - L14) 49.551%

1/ Maness Second 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 PROGRESS
Docket No. E-2, Subs 1193 and 1219
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 Exhibit II

Line No.	Item	NC Retail Amount
Income statement impact		
1	Balance for Amortization	\$ 39,999 1/
2	Years to Amortize	<u>8 2/</u>
3	Annual amortization per Public Staff (L1 / L2)	5,000
4	Annual amortization per Company	<u>5,000 3/</u>
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	<u>\$ (0)</u>
6	Statutory tax rate	<u>23.16930% 4/</u>
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 0</u>
Rate base impact		
8	Deferred balance of non-ARO environmental costs (L1)	\$ 39,999
9	Annual amortization (-L3)	<u>(5,000)</u>
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	34,999
11	Deferred non-ARO regulatory asset per Company	<u>34,999 5/</u>
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	<u>\$ 0</u>
13	Adjustment to ADIT (-L12 x L6)	<u>\$ (0)</u>

- 1/ Smith Second Settlement Exhibit 1, NC-1101, Non-ARO column, Line 2.
2/ Amortization period recommended by Public Staff.
3/ Smith Second Settlement Exhibit 1, NC-1101, Non-ARO column, Line 8.
4/ Smith Second Settlement Exhibit 1, NC-1101, Line 10 (unrounded).
5/ Smith Second Settlement Exhibit 1, NC-1101, Non-ARO column, Line 20.

INDEX TO MANESS STIPULATION EXHIBIT 1

	<u>Title</u>	<u>Schedule Number</u>
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2	SUPPORT FOR RECONCILIATION SCHEDULE	1-1
3	CALCULATION OF GROSS REVENUE EFFECT FACTORS	1-2
4	CALCULATION OF WEIGHTED STATE INCOME TAX RATE	1-3
5	ORIGINAL COST RATE BASE	2
6	SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS	2-1
7	ADJUSTMENT TO UPDATE PLANT AND ACCUMULATED DEPRECIATION	2-1(a)
8	ADJUSTMENT TO UPDATE PLANT IN SERVICE TO FEBRUARY 29, 2020	2-1(a)(1)
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10	ADJUSTMENT TO RATE BASE FOR TREATMENT AS A RIDER	2-1(b)
11	ADJUSTMENT TO VANDERBILT - W. ASHEVILLE VANDERBILT 115KV PROJECT	2-1(c)
12	ADJUSTMENT TO COAL INVENTORY	2-1(d)
13	CALCULATION OF ORIGINAL COST RATE BASE, AS REALLOCATED BY PUBLIC STAFF	2-1(e)
14	RATES	2-1(f)
15	PUBLIC STAFF ADJUSTMENTS TO BE REFLECTED IN LEAD LAG CALCULATION	2-1(f)(1)
16	INCREASE	2-1(g)
17	SUMMARY OF REGULATORY ASSETS & LIABILITIES	2-2
18	NET OPERATING INCOME FOR RETURN	3
19	SUMMARY OF PUBLIC STAFF NET OPERATING INCOME ADJUSTMENTS	3-1
20	ADJUSTMENT TO DEPRECIATION EXPENSE AND PROPERTY TAXES FOR PLANT UPDATE	3-1(a)
21	CALCULATION OF DEPRECIATION EXPENSE ON PLANT UPDATE	3-1(a)(1)
22	ADJUSTMENT TO UPDATE REVENUES TO FEBRUARY 29, 2020	3-1(b)
23	CALCULATION OF ADJUSTMENT TO REVENUES AND FUEL RELATED EXPENSES TO UPDATE CUSTOMER GROWTH TO FEBRUARY 29, 2020	3-1(b)(1)
24	CALCULATION OF ADJUSTMENT TO REVENUES AND FUEL RELATED EXPENSES TO UPDATE CUSTOMER USAGE TO FEBRUARY 29, 2020	3-1(b)(2)
25	CALCULATION OF VARIABLE NON-FUEL O&M EXPENSE PER MWH	3-1(b)(3)
26	CALCULATION OF ADJUSTMENT TO TEST YEAR REVENUES AND FUEL RELATED EXPENSES FOR WEATHER	3-1(b)(4)
27	CALCULATION OF BILL-RELATED EXPENSES	3-1(b)(5)
28	ADJUSTMENT TO PAYMENT CARD FEES	3-1(c)
29	ADJUSTMENT TO FLOWBACK PROTECTED EDIT DUE TO TAX CUTS AND JOBS ACT	3-1(d)
30	ADJUSTMENT FOR CHANGE IN DEPRECIATION RATES	3-1(e)

INDEX TO MANESS STIPULATION EXHIBIT 1

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32	ADJUSTMENT TO INCENTIVES	3-1(g)
33	ADJUSTMENT TO SEVERANCE COSTS	3-1(h)
34	ADJUSTMENT TO EXECUTIVE COMPENSATION	3-1(i)
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36	ADJUSTMENT TO OUTSIDE SERVICES	3-1(k)
37	ADJUSTMENT TO NORMALIZE STORM COSTS	3-1(l)
38	ADJUSTMENT TO STORM DEFERRAL	3-1(m)
39	ADJUSTMENT TO CHARITABLE CONTRIBUTIONS, CORPORATE SPONSORSHIPS, AND CORPORATE DONATIONS	3-1(n)
40	ADJUSTMENT TO LOBBYING EXPENSE	3-1(o)
41	ADJUSTMENT TO BOARD OF DIRECTORS EXPENSE	3-1(p)
42	ADJUSTMENT TO END OF LIFE RESERVE FOR NUCLEAR MATERIALS AND SUPPLIES AMORTIZATION EXPENSE	3-1(q)
43	ADJUSTMENT TO RATE CASE EXPENSE AND AMORTIZATION	3-1(r)
44	NET OPERATING INCOME, AS REALLOCATED BY PUBLIC STAFF	3-1(s)
45	ADJUSTMENT TO ASHEVILLE COMBINED CYCLE PRO FORMA O&M EXPENSE AND REGULATORY ASSET	3-1(t)
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47	CALCULATION OF DEFERRED COSTS FOR ASHEVILLE COMBINED CYCLE - PRODUCTION	3-1(t)(2)
48	CALCULATION OF DEFERRED COSTS FOR ASHEVILLE COMBINED CYCLE - TRANSMISSION	3-1(t)(3)
49	NON-FUEL O&M DISPLACEMENT ADJUSTMENT	3-1(u)
50	ADJUSTMENT TO COMPANY'S INFLATION ADJUSTMENT	3-1(v)
51	CALCULATION OF INFLATION RATE	3-1(v)(1)
52	INTEREST SYNCHRONIZATION ADJUSTMENT	3-1(w)
53	CALCULATION OF COMPANY'S INTEREST SYNCHRONIZATION ADJUSTMENT	3-1(w)(1)
54	RETURN ON EQUITY AND ORIGINAL COST RATE BASE BEFORE AND AFTER PUBLIC STAFF PROPOSED INCREASE	4
55	CALCULATION OF PUBLIC STAFF'S ADDITIONAL GROSS REVENUE REQUIREMENT	5

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
REVENUE IMPACT OF PUBLIC STAFF ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 1

Line No.		Settlement Amount
1	Revenue requirement increase per Company application, base rates	\$ 585,961 ^{1/}
2	Revenue impact of Company rebuttal filing	(41,699)
3	Revenue requirement increase per Company at rebuttal filing	<u>\$ 544,262</u>
4	Revenue impact of Public Staff adjustments: ^{2/}	
	Unsettled Issues:	
5	Change in equity ratio from 53.00% to 50.00% equity	(\$29,844)
6	Change in return on equity from 10.30% to 9.00%	(90,509)
7	Adjust for cost of service reallocations - SWP&A	(15,818)
8	Update plant and accumulated depreciation to February 29, 2020	(794) ^{6/}
9	Update revenues, customer growth, and weather to February 29, 2020	(4,598) ^{7/}
10	Remove Unprotected Federal, State EDIT, and deferred Federal from base rates for treatment as a rider	42,722 ^{3/}
11	Adjust depreciation rates	(40,307)
12	Adjust deferred environmental costs	(98,932)
13	Adjust deferred non-ARO environmental costs	(3,732)
14	Adjust nuclear decommissioning expense	(16,599)
15	Adjust cash working capital under present rates	4,273
16	Adjust cash working capital under proposed rates	(5,140)
17	Rounding	2
18	Total Unsettled Items	<u>(\$259,276)</u>
	Settled Issues:	
19	Change in debt cost rate from 4.107% to 4.107%	-
20	Adjust payment card fees	-
21	Adjust for flowback of Protected Federal EDIT due to Tax Cuts and Jobs Act	(28,796)
22	Adjust aviation expenses	(205)
23	Adjust executive compensation	(161)
24	Adjust salaries & wage expense	-
25	Adjust outside services	(33)
26	Adjust rate case expense	(163)
27	Adjust to normalize storm costs	9,334
28	Adjust to remove storm deferral	(87,094)
29	Adjust for severance costs	(1,321)
30	Adjust incentives	(3,912)
31	Adjust Asheville CC Plant in Service	(1,266)
32	Adjust Asheville CC deferral	(1,386)
33	Adjust W. Asheville Vanderbilt 115kV Project	(120)
34	Adjust Asheville production displacement	(4,087)
35	Adjust coal inventory	-
36	Adjust EOL nuclear materials & supplies reserve expense	(1,813)
37	Adjust charitable contributions, corporate sponsorships, and corporate donations	(24)
38	Adjust lobbying expense	(1,484)
39	Adjust Board of Directors expense	(1,275)
40	Adjust inflation to February 29, 2020	(98)
41	Adjust to remove CertainTeed payment obligation	-
42	Total Settled Items	<u>(123,904)</u>
43	Total revenue impact of Public Staff adjustments	<u>(383,180)</u>
44	Public Staff recommended increase (decrease) in base rate revenue requirement	<u>\$ 161,082</u> ^{4/}
45	Public Staff recommended increase (decrease) in base rate revenue requirement (L44)	\$ 161,082
	Unsettled Issues Riders	
46	Annual Federal provisional EDIT Rider recommended by Public Staff for one year period	(113,983) ^{3/}
47	Annual State EDIT Rider recommended by Public Staff for one year period	(24,795) ^{3/}
48	Annual Federal unprotected EDIT Rider recommended by Public Staff for five year period	(93,565) ^{3/}
49	Total Unsettled Riders (Sum of L46 through L48)	<u>(232,343)</u>
	Settled Issues Rider	
50	Regulatory asset/liability rider for one year period recommended	(2,091) ^{5/}
51	Total Settled Rider	<u>(2,091)</u>
52	Public Staff recommended change in revenue requirement for first year (Sum of L45 + L49 + L51)	<u>\$ (73,352)</u>
53	Public Staff recommended change in revenue requirement for years 2 through 5 (L45 + L48)	<u>\$ 67,517</u>

1/ Smith Supplemental Supplemental Exhibit 1, Page 2, Line 8 (Prior to Company's rider-related revenue adjustment).

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

3/ The Public Staff is recommending that the Company's EDIT regulatory liabilities be refunded through one and five year riders. As a result, the Public Staff has removed the amounts included by the Company in its revenue requirement calculations associated with EDIT refunds, and instead has calculated separate riders that will credit customers for EDIT refunds over the corresponding periods. The calculation of all annual EDIT riders is shown on Dorgan Supplemental Exhibit 2.

4/ Maness Stipulation Exhibit 1, Schedule 5, Line 5.

5/ Smith Supplemental Exhibit 5.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUPPORT FOR RECONCILIATION SCHEDULE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 1-1

Line No.	Item	Rate Base Impact ^{1/}	Income Statement Impact ^{2/}	Total Revenue Impact ^{3/}
		(a)	(b)	(c)
1	Update plant and accumulated depreciation to February 29, 2020	(\$437)	(\$357)	(\$794)
2	Adjust unprotected EDIT for refund as a series of riders	42,722	-	42,722
3	Adjust for flowback of Protected EDIT	1,864	(30,660)	(28,796)
4	Adjust for severance costs	(1,321)	-	(1,321)
5	Adjust depreciation rates	3,462	(43,769)	(40,307)
6	Adjust for cost of service reallocations - SWP&A	(5,475)	(10,343)	(15,818)
7	Adjust deferred environmental costs	(21,479)	(77,453)	(98,932)
8	Adjust deferred non-ARO environmental costs	241	(3,973)	(3,732)
9	Adjust Asheville CC Plant in Service costs	(1,266)	-	(1,266)
10	Adjust Asheville CC deferral	-	(1,386)	(1,386)
11	Remove Storm Deferral	(42,134)	(44,960)	(87,094)
12	Adjust rate case expense	(163)	-	(163)

1/ Maness Stipulation Exhibit 1, Schedule 2-1, Line 15.

2/ Maness Stipulation Exhibit 1, Schedule 3-1, Line 18.

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF GROSS REVENUE EFFECT FACTORS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness 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	50.000% ^{1/}	4.107% ^{1/}	0.9963091 ^{2/}	0.0206132 ^{4/}
3	Common equity	50.000% ^{1/}	9.00% ^{1/}	0.7654709 ^{3/}	0.0587873 ^{4/}
4	Total (Sum of Lines 2 and 3)	<u>100.000%</u>			<u>0.0794005</u>
5	<u>Net Income Factor</u>				<u>Amount</u>
6	Total revenue				1.0000000
7	Uncollectibles				<u>0.0023940</u> ^{5/}
8	Balance (L6 - L7)				0.9976060
9	Regulatory fee (L8 x 0.130%) ^{6/}				<u>0.0012969</u>
10	Balance (L8 - L9)				0.9963091
11	State income tax (L10 x 2.7460%) ^{7/}				<u>0.0273586</u>
12	Balance (L10 - L11)				0.9689505
13	Federal income tax (L12 x 21%) ^{8/}				<u>0.2034796</u>
14	Retention factor (L12 - L13)				<u>0.7654709</u>

1/ Per Public Staff witness Woolridge.

2/ Line 10.

3/ Line 14.

4/ Column (a) multiplied by Column (b), divided by Column (c).

5/ NCUC Form E-1, Item No. 10, NC-0105, Line 3.

6/ Current NCUC regulatory fee rate effective.

7/ Maness Stipulation Exhibit 1, Schedule 1-3, Line 4, Column (a).

8/ Statutory rate.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF WEIGHTED
STATE INCOME TAX RATE

Public Staff
Maness Stipulation Exhibit 1
Schedule 1-3

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

Line No.	Item	Total System (a)	North Carolina (b)	South Carolina (c)
1	<u>Weighted state income tax rate</u>			
2	Apportionment factor		84.6380% ^{2/}	12.6000% ^{2/}
3	State income tax rate		<u>2.50% ^{3/}</u>	<u>5.00% ^{3/}</u>
4	Weighted state income tax rate	<u>2.7460% ^{1/}</u>	<u>2.11595% ^{4/}</u>	<u>0.63000% ^{4/}</u>
5	<u>Composite income tax rate</u>			
6	Weighted state income tax rate (L4)	2.7460%		
7	Federal income tax rate	21% ^{5/}		
8	Composite income tax rate	23.1693% ^{6/}		

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

2/ E-1, Item No. 10, NC-0104, Column (b), Lines 3 and 4.

3/ E-1, Item No. 10, NC-0104, Column (a), Lines 3 and 4.

4/ Line 2 times Line 3.

5/ Statutory rate.

6/ 1 minus ((1 minus Line 6) multiplied by (1 minus Line 7)).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)
For the Test Year Ended December 31, 2018

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1
Page 1 of 3

Line No.	Item	Update Plant and Accumulated Depreciation to 2/29/2020 ^{2/}	Remove EDIT Refund for Treatment as a Rider ^{3/}	Include Flowback of Protected EDIT due to Tax Cuts & Jobs Act ^{4/}	Adjust Depreciation Rates ^{5/}	Adjust Severance Costs ^{6/}	Adjust Storm Deferral ^{7/}	Adjust Coal Inventory ^{8/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Electric plant in service	\$0	\$0	\$0	\$0	\$0	(\$68,248)	\$0
2	Accumulated depreciation and amortization	(5,505)	-	-	43,608	-	1,812	-
3	Net electric plant in service (L1 + L2)	(5,505)	\$0	\$0	\$43,608	\$0	(\$66,436)	\$0
4	Materials and supplies	-	-	-	-	-	-	(0)
	<u>Other Working Capital</u>							
5	Operating funds per lead-lag study	-	-	-	-	-	-	-
6	Unamortized debt	-	-	-	-	-	-	-
7	Regulatory assets and liabilities	-	-	-	-	(21,655)	(604,202)	-
8	Other	-	-	-	-	-	-	-
9	Total Working Capital	-	-	-	-	(21,655)	(604,202)	-
10	ARO-related CCR regulatory assets and liabilities	-	-	-	-	-	-	-
11	Customer deposits	-	-	-	-	-	-	-
12	Accumulated deferred income taxes	-	538,063	-	-	5,017	139,989	-
13	Adjustments to federal excess deferred income taxes	-	-	23,470	-	-	-	-
14	Operating reserves	-	-	-	-	-	-	-
15	Construction work in progress	-	-	-	-	-	-	-
16	Total original cost rate base (L3 + L4 + L9 + sum of L10 through L15)	<u>(5,505)</u>	<u>\$538,063</u>	<u>\$23,470</u>	<u>\$43,608</u>	<u>(\$16,637)</u>	<u>(\$530,649)</u>	<u>(\$0)</u>
17	Revenue requirement impact	^{1/} <u>(\$437)</u>	<u>\$42,722</u>	<u>\$1,864</u>	<u>\$3,462</u>	<u>(\$1,321)</u>	<u>(\$42,134)</u>	<u>\$0</u>

1/ Line 14 times rate base retention factor of 0.0794134 from Maness Stipulation Exhibit 1, Schedule 1-2.

2/ Maness Stipulation Exhibit 1, Schedule 2-1(a).

3/ Maness Stipulation Exhibit 1, Schedule 2-1(b).

4/ Maness Stipulation Exhibit 1, Schedule 3-1(d).

5/ Maness Stipulation Exhibit 1, Schedule 3-1(e).

6/ Maness Stipulation Exhibit 1, Schedule 3-1(h).

7/ Maness Stipulation Exhibit 1, Schedule 3-1(m).

8/ Maness Stipulation Exhibit 1, Schedule 2-1(d).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)
For the Test Year Ended December 31, 2018

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1
Page 2 of 3

Line No.	Item	Adjustment to Reclassify CCR Reg. Assets & Liabilities (h)	Adjustment to Deferred Non-ARO Environmental Costs (i)	Adjustment to Remove Deferred Environmental Costs - ARO (j)	Adjustment to Remove Rate Case Expense (k)	Adjustment to COSS - SWP&A Reallocation (l)	Adjust Asheville CC Plant in Service Costs (m)	Adjust Asheville CC Deferral (n)
1	Electric plant in service	\$ -	\$ -	\$ -	\$ -	(\$144,521)	\$ -	\$ -
2	Accumulated depreciation and amortization	-	-	-	-	59,268	-	-
3	Net electric plant in service (L1 + L2)	\$0	\$0	\$0	\$0	(\$85,253)	\$0	\$0
4	Materials and supplies	-	-	-	-	(3,379)	(27)	-
Other Working Capital								
5	Operating funds per lead-lag study	-	-	-	(2,670)	5,091	-	-
6	Unamortized debt	-	-	-	-	-	-	-
7	Regulatory assets and liabilities	(494,329)	3,958	-	-	-	(20,722)	-
8	Other	-	-	-	-	-	-	-
9	Total Working Capital	(494,329)	3,958	-	(2,670)	5,091	(20,722)	-
10	ARO-related CCR regulatory assets and liabilities	494,329	-	(352,092)	-	-	-	-
11	Customer deposits	-	-	-	-	-	-	-
12	Accumulated deferred income taxes	-	(917)	81,577	\$619	14,327	4,801	-
13	Adjustments to federal excess deferred income taxes	-	-	-	-	-	-	-
14	Operating reserves	-	-	-	-	257	-	-
15	Construction work in progress	-	-	-	-	-	-	-
16	Total original cost rate base (L3 + L4 + L9 + sum of L10 through L15)	<u>\$0</u>	<u>\$3,041</u>	<u>(\$270,515)</u>	<u>(\$2,051)</u>	<u>(\$68,956)</u>	<u>(\$15,948)</u>	<u>\$0</u>
17	Revenue requirement impact	^{1/} <u>\$0</u>	<u>\$241</u>	<u>(\$21,479)</u>	<u>(\$163)</u>	<u>(\$5,475)</u>	<u>(\$1,266)</u>	<u>\$0</u>

9/ Based on recommendation of Public Staff witness Maness.

10/ Maness Stipulation Exhibit 1, Schedule 3-1(r).

11/ Maness Stipulation Exhibit 1, Schedule 2-1(e).

12/ Maness Stipulation Exhibit 1, Schedule 3-1(t).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF RATE BASE ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)
For the Test Year Ended December 31, 2018

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1
Page 3 of 3

Line No.	Item	Adjust W. Asheville Vanderbilt 115kV Project ^{13/} (o)	Adjust Cash Working Capital ^{14/} (p)	Total Rate Base Adjustments ^{15/} (q)
1	Electric plant in service	(\$1,507)	\$0	(\$214,276)
2	Accumulated depreciation and amortization	-	-	99,182
3	Net electric plant in service (L1 + L2)	(\$1,507)	\$0	(\$115,094)
4	Materials and supplies	-	-	(3,406)
<u>Other Working Capital</u>				
5	Operating funds per lead-lag study	-	53,813	56,234
6	Unamortized debt	-	-	-
7	Regulatory assets and liabilities	-	-	(1,136,950)
8	Other	-	-	-
9	Total Working Capital	-	53,813	(1,080,716)
10	ARO-related CCR regulatory assets and liabilities	-	-	142,237
11	Customer deposits	-	-	-
12	Accumulated deferred income taxes	-	-	783,477
13	Adjustments to federal excess deferred income taxes	-	-	23,470
14	Operating reserves	-	-	257
15	Construction work in progress	-	-	-
16	Total original cost rate base (L3 + L4 + L9 + sum of L10 through L15)	<u>(\$1,507)</u>	<u>\$53,813</u>	<u>(\$249,775)</u>
17	Revenue requirement impact	^{1/} <u>(\$120)</u>	<u>\$4,273</u>	<u>(\$19,832)</u>

13/ Maness Stipulation Exhibit 1, Schedule 2-1(c).

14/ Maness Stipulation Exhibit 1, Schedule 2-1(f), Line 83

15/ Sum of Columns (a) through Column (p).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ORIGINAL COST RATE BASE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2

Line No.	Item	Under Present Rates			After Public Staff	
		NC Retail, as Adjusted Per Company ^{1/}	Public Staff Adjustments ^{2/}	After Public Staff Adjustments ^{3/}	Recommended Increase Rate	After Rate Increase ^{5/}
		(a)	(b)	(c)	(d)	(e)
1	Electric plant in service	\$19,287,273	(\$214,276)	\$19,072,997	\$0	\$19,072,997
2	Accumulated depreciation and amortization	(8,099,540)	99,182	(8,000,357)	-	(8,000,357)
3	Net electric plant in service (L1 + L2)	\$11,187,733	(\$115,094)	\$11,072,639	\$0	\$11,072,639
4	Materials and supplies	582,130	(3,406)	578,724	-	578,724
	<u>Other Working Capital</u>					
5	Operating funds per lead-lag study	130,342	56,234	186,576	\$14,178 ^{4/}	200,754
6	Unamortized debt	32,019	-	32,019	-	32,019
7	Regulatory assets and liabilities	445,548	(1,136,950)	(691,402)	-	(691,402)
8	Other	(13,453)	-	(13,453)	-	(13,453)
9	Total other working capital (Sum of L5 through L8)	594,456	(1,080,716)	(486,259)	14,178	(472,081)
10	ARO-related CCR regulatory assets and liabilities	-	142,237	142,237	-	142,237
11	Customer deposits	(116,588)	-	(116,588)	-	(116,588)
12	Accumulated deferred income taxes	(1,534,206)	783,477	(750,729)	-	(750,729)
13	Adjustments to federal excess deferred income taxes	-	23,470	23,470	-	23,470
14	Operating reserves	(54,705)	257	(54,448)	-	(54,448)
15	Construction work in progress	-	-	-	-	-
16	Total original cost rate base (L3 + L4 + L9 + sum of L10 through L15)	\$10,658,820	(\$249,775)	\$10,409,045	\$14,178	\$10,423,223

1/ Based on Smith Supplemental Exhibit 1, Page 4.

2/ Maness Stipulation Exhibit 1, Schedule 2-1, Column (q).

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

4/ Maness Stipulation Exhibit 1, Schedule 2-1(g), Line 80, Column (k).

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO UPDATE PLANT AND ACCUMULATED DEPRECIATION
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(a)

Line No.	Item	Plant in Service (a)	Accumulated Depreciation (b)
1	Adjustment to update balances to 2/29/2020	\$0 ^{1/}	\$0 ^{2/}
2	Adjustment for annualization of depreciation expense	<u>0</u>	<u>(5,506) ^{3/}</u>
3	Total adjustment to update plant and accumulated depreciation (L1 + L2)	<u><u>\$0</u></u>	<u><u>(\$5,505)</u></u>

1/ Maness Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 24, Column (g).

2/ Maness Stipulation Exhibit 1, Schedule 2-1(a)(2), Line 14, Column (e).

3/ Maness Stipulation Exhibit 1, Schedule 3-1(a), negative of Line 4.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO UPDATE PLANT IN SERVICE TO
FEBRUARY 29, 2020
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(a)(1)

Line No.	Item	Total System			NC Retail Percentage ^{4/}	NC Retail Amount ^(g)
		Amount As Of ^{1/}	Amount As Of ^{2/}	Change in Plant in Service ^{3/}		
		12/31/2018 ^(a)	2/29/2020 ^(b)	^(c)		
1	Steam plant	\$3,923,116	\$3,730,947	(\$192,169)	60.8591%	(\$116,952) ^{5/}
2	Direct Assignment - NC steam production	(\$29,085)	(\$28,951)	134	100.0000%	134 ^{5/}
3	Direct Assignment - SC steam production	\$0	\$0	0	0.0000%	- ^{5/}
4	Direct Assignment - WSH steam production	(\$1,188)	(\$5,802)	(4,614)	0.0000%	- ^{5/}
5	Hydro plant	143,939	157,186	13,247	60.8591%	8,062 ^{5/}
6	Other production plant	3,137,412	3,994,088	856,677	60.8591%	521,366 ^{5/}
7	Direct Assignment - NC other production	(639)	(639)	0	100.0000%	- ^{5/}
8	Direct Assignment - SC other production	-	-	0	0.0000%	- ^{5/}
9	Direct Assignment - WSH other production	(1)	(301)	(300)	0.0000%	- ^{5/}
10	Nuclear plant	9,053,408	9,383,475	330,067	60.8591%	200,876 ^{5/}
11	Direct Assignment - NC nuclear production	(687,732)	(684,798)	2,934	100.0000%	2,934 ^{5/}
12	Direct Assignment - SC nuclear production	(88,565)	(88,213)	352	0.0000%	- ^{5/}
13	Direct Assignment - WSH nuclear production	(153,008)	(152,640)	368	0.0000%	- ^{5/}
14	Total production plant	15,297,657	16,304,352	1,006,695		
15	Transmission plant	2,745,782	3,009,889	264,107	58.8448%	155,413 ^{5/}
16	Distribution plant	6,779,513	7,410,982	631,469	87.1486%	550,316 ^{5/}
17	General plant	611,462	688,873	77,411	73.7686%	57,105 ^{5/}
18	Intangible plant	494,528	600,193	105,665	67.3953%	71,213 ^{5/}
19	Total plant in service	<u>\$25,928,941</u>	<u>\$28,014,289</u>	<u>\$2,085,347</u>		<u>\$1,450,467</u>
20	Update to plant per Public Staff (L19)					\$1,450,467
21	Less: Additional plant recovered in riders					<u>0</u>
22	Update to plant per Public Staff (L20 - L21)					\$1,450,467
23	Company Adjustment					<u>1,450,466</u> ^{6/}
24	Public Staff adjustment to update plant (L22 - L23)					<u>\$0</u>

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

2/ E-1, Item 10, NC-1008(F), Column (o).

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

4/ E-1, Item No. 45B.

5/ Column (e) multiplied by Column (f).

6/ E-1, NC-1001(F), Item No. 10, Total NC Retail column, Line 24, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO UPDATE ACCUMULATED
DEPRECIATION TO FEBRUARY 29, 2020
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(a)(2)

Line No.	Item	Total System			NC Retail Percentage ^{4/}	NC Retail Amount
		Amount As Of 12/31/2018 ^{1/}	Amount As Of 2/29/2020 ^{2/}	Change in Accumulated Depreciation ^{3/}		
		(a)	(b)	(c)	(d)	(e)
1	Production plant	(\$7,230,278)	(\$7,308,357)	(\$78,079)	60.8591%	(\$47,518) ^{5/}
2	Direct Assignment - NC Production	152,450	180,082	27,632	100.0000%	27,632 ^{5/}
3	Direct Assignment - SC Production	17,429	20,143	2,714	0.0000%	- ^{5/}
4	Direct Assignment - WSH Production	108,456	110,081	1,625	0.0000%	- ^{5/}
5	Transmission plant	(817,520)	(850,404)	(32,884)	58.8448%	(19,351) ^{5/}
6	Distribution plant	(3,191,028)	(3,199,578)	(8,550)	87.1486%	(7,451) ^{5/}
7	General plant	(162,646)	(182,168)	(19,522)	73.7686%	(14,401) ^{5/}
8	Intangible plant	(290,400)	(356,387)	(65,987)	67.3953%	(44,472) ^{5/}
9	Total accumulated depreciation	<u>(\$11,413,537)</u>	<u>(\$11,586,588)</u>	<u>(\$173,051)</u>		<u>(\$105,561)</u>
10	Change in accumulated depreciation (L9)					(\$105,561)
11	<u>Less:</u> Non-fuel rider activity					<u>0</u>
12	Public Staff adjustment to update through 2/29/2020					(\$105,561)
13	Company Adjustment					<u>(105,561) ^{6/}</u>
14	Public Staff adjustment (L10 - L11)					<u>\$0</u>

1/ E-1, Item No. 10, NC-1009(F).

2/ E-1, Item No. 10, NC-1009(F), Column (o).

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

4/ E-1, Item No. 45B

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

6/ E-1, Item No. 10, NC-1001(F), Line 35, Total NC Retail Column, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO ACCUMULATED DEPRECIATION
FOR ANNUALIZATION OF DEPRECIATION EXPENSE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(a)(3)

Line No.	Item	Annualized	Per Books	Difference	NC Retail	NC Retail
		Depreciation Expense at 2/29/2020	Depreciation Expense for Twelve Months Ended 2/29/2020		Percentage	Amount
		(a)	(b)	(c)	(d)	(e)
1	Production plant	\$579,343 ^{7/}	\$543,668	\$35,675	60.8591%	\$21,711 ^{5/}
2	Direct Assignment - NC Production	(418)	(437)	19	100.0000%	19
3	Direct Assignment - SC Production			-	0.0000%	-
4	Direct Assignment - WSH Production	(188)	2	(190)	0.0000%	-
5	Transmission plant	55,668	52,649	3,019	58.8448%	1,777 ^{5/}
6	Direct Assignment - OATT transmission	(94)	(89)	(5)	0.0000%	-
7	Distribution plant	184,551	176,426	8,125	87.1486%	7,081 ^{5/}
8	Direct Assignment - OATT distribution	(3)	(3)	-	0.0000%	-
9	General plant	22,746	28,613	(5,867)	73.7686%	(4,328) ^{5/}
10	Direct Assignment - OATT general	(7)	(7)	-	0.0000%	-
11	Intangible plant	55,511	55,293	218	67.3953%	147 ^{5/}
12	Total accumulated depreciation	<u>\$897,109</u>	<u>\$856,115</u>	<u>\$40,994</u>		<u>\$26,407</u>
13	Adjustment to accumulated depreciation (-L12)					(\$26,407)
14	Company Adjustment					<u>(20,901) ^{6/}</u>
15	Public Staff adjustment to accumulated depreciation					<u>(\$5,506)</u>

1/ E-1, Item No. 10, NC-1007(F), Current Rates Calculated Column.

2/ E-1, Item No. 10, NC-1007(F), Column (o).

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

4/ E-1, Item No. 45B

5/ Column (c) multiplied by Column (d).

6/ E-1, Item No. 10, NC-1001(F), Line 42, NC Retail Column, adjusted to SWPA.

7/ NC-1007(F), updated to include the Asheville plant.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO RATE BASE FOR TREATMENT AS A RIDER
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(b)

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	(\$403,750) ^{1/}
3	Adjustment to remove N.C. state EDIT from rate base	(23,998) ^{2/}
4	Adjustment to remove over collection of revenues due to FIT rate change from rate base	<u>(110,315) ^{3/}</u>
5	Public Staff Adjustments to rate base for tax changes (Sum of Lines 2 through 4)	<u>(\$538,063)</u>

1/ Smith Supplemental Exhibit 4, Line 8, Columns (b) and (c).

2/ Smith Supplemental Exhibit 4, Line 8, Columns (d).

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO VANDERBILT - W. ASHEVILLE VANDERBILT 115KV PROJECT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(c)

Line No.	Item	Amount
1	W. Asheville - Vanderbilt 115kV Project Allocated at 100% to NC Retail per Company at 12/2018	\$11,727 ^{1/}
2	W. Asheville - Vanderbilt 115kV Project Allocated at Transmission Level per Public Staff at 12/2018	<u>6,901</u> ^{2/}
3	Total Public Staff adjustment to W. Asheville - Vanderbilt 115kV Project at 12/2018 (L2 - L1)	<u><u>(\$4,826)</u></u>
4	W. Asheville - Vanderbilt 115kV Project distribution post test year additions at 12/2019	\$634 ^{1/}
5	NC Retail Distribution allocation per Public Staff	<u>87.1486%</u>
6	W. Asheville - Vanderbilt 115kV Project distribution post test year additions per Company	553
7	NC Retail Transmission allocation per Public Staff	<u>58.8448%</u>
8	W. Asheville - Vanderbilt 115kV Project transmission post test year additions per Public Staff	<u>373</u>
9	Total Public Staff adjustment to W. Asheville - Vanderbilt 115kV Project PTA (L8 - L6) at 12/2019	<u><u>(180)</u></u>
10	Total Public Staff adjustment to W. Asheville - Vanderbilt 115kV Project (L3 + L9)	(5,006)
11	Company adjustment to W. Asheville - Vanderbilt 115kV Project at SWPA	<u>(3,499)</u> ^{1/}
12	Public Staff adjustment to W. Asheville - Vanderbilt 115kV Project (L10 - L11)	<u><u>(1,507)</u></u>

1/ Based on information provided by Company.

2/ Line 1 times SWPA NC Retail Allocation factor for Transmission Plant (DT) of 58.8448%.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO COAL INVENTORY
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(d)

Line No.	Item	Total System	NC Retail Allocation	Total NC Retail
1	Estimated full load burn - excluding retirements, in tons	32,017 ^{1/}		
2	Target number of days inventory	35 ^{1/}		
3	Target coal inventory balance at December 31, 2018 (L1 x L2)	1,120,595		
4	Projected average delivered coal cost per ton	\$ 65.43 ^{2/}		
5	Projected coal inventory balance at target (L3 x L4/1,000)	\$ 73,321	61.1093% ^{3/}	\$44,806
6	Adjust for Fixed Transportation Costs	13,977 ^{4/}	61.1093% ^{3/}	8,541
7	Total coal inventory balance at target	\$ 87,298		\$ 53,347
8	Actual coal inventory balance per Company	106,285 ^{5/}	61.1093% ^{3/}	64,950
9	Impact to materials and supplies (L7 - L8)	(18,987)		(11,603)
10	Company Adjustment			(11,603) ^{6/}
11	Adjustment to coal inventory (L9 - L10)			(\$0)

1/ E-1, Item 46E, Coal Consumption and Inventory Data.

2/ Based on recommendation of Public Staff witness Metz.

3/ E-1, Item No. 45B, SWP&A Allocation Factor: E1.

4/ Per Public Staff witness Metz, the average delivered cost/ton does not include fixed transportation costs. The delivered cost of fuel used here is consistent with Docket No E-2, Sub 1204 with a projected period of 12/1/2019 - 11/30/2020.

=Target inventory balance in tons/estimated coal delivered in tons * Transportation Cost

5/ E-1, Item 10, NC-2401, Line 10.

6/ E-1, Item No. 10, NC-2401(C), Line 12, N.C. Retail Column, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF ORIGINAL COST RATE BASE, AS
REALLOCATED BY PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 2-1(e)

Line No.	Item	North Carolina Retail Operations		
		SWP&A Company Rate Base Reallocated By Public Staff ^{1/}	Summer CP Company Rate Base - Company Allocations ^{2/}	Public Staff Adjustment: SWP&A Reallocation ^{3/}
		(a)	(b)	(c)
1	Electric plant in service	\$19,142,751	\$19,287,273	(\$144,521)
2	Accumulated depreciation and amortization	(8,040,272)	(8,099,540)	59,268
3	Net electric plant in service (L1 + L2)	\$11,102,480	\$11,187,733	(\$85,253)
4	Materials and supplies	578,751	582,130	(3,379)
5	Working capital investment	482,960	477,868	5,091
6	Accumulated deferred taxes	(1,519,879)	(1,534,206)	14,327
7	Operating reserves	(54,448)	(54,705)	257
8	Construction work in progress	-	-	-
9	Total Original Cost Rate Base (Sum of L3 through L8)	\$10,589,864	\$10,658,820	(\$68,956)

1/ Maness Stipulation Exhibit 3, Schedule 1, Column (c).

2/ Maness Stipulation Exhibit 1, Schedule 2, Column (a).

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

DUKE ENERGY PROGRESS, LLC
 Docket No. E-2, Sub 1219
 North Carolina Retail Operations
**CALCULATION OF WORKING CAPITAL FROM LEAD / LAG
 STUDY UNDER PRESENT RATES**
 For the Test Year Ended December 31, 2018
 (Dollar Amounts Expressed in Thousands)

Public Staff
 Maness Stipulation Exhibit 1
 Schedule 2-1(f)

Line No.	Item	Per Books Amounts ^{1/}	Company Rate-making 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	\$3,575,788	\$ (296,495)	\$3,279,293	\$3,145	\$3,282,437	41.88	\$376,626
3	Sales for resale revenues	134,915	-	134,915	-	134,915	33.73	12,468
4	Provisions for rate refunds	(104,546)	-	(104,546)	-	(104,546)	41.88	(11,996)
5	Forfeited discounts	7,664	-	7,664	-	7,664	72.30	1,518
6	Miscellaneous service revenues	5,506	-	5,506	-	5,506	76.00	1,146
7	Rent revenues - production plant related	4,466	-	4,466	-	4,466	41.83	509
8	Rent revenues - distribution pole rental revenue	10,901	-	10,901	-	10,901	182.00	5,436
9	Rent revenues - transmission plant related	382	-	382	-	382	41.63	44
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-	-
11	Rent revenues - additional facilities - ret.X lighting	4,617	-	4,617	-	4,617	41.63	527
12	Rent revenues - additional facilities - lighting	3,849	-	3,849	-	3,849	41.63	439
13	Rent revenues - other	3,413	-	3,413	-	3,413	69.21	638
14	Other revenues - production plant related	1,184	-	1,184	-	1,184	41.88	136
15	Other revenues - transmission related	6,208	-	6,208	-	6,208	41.88	712
16	Other revenues - wholesale D/A	368	-	368	-	368	41.88	42
17	Other revenues - REPS	1,114	-	1,114	-	1,114	41.88	128
18	Other revenues - other energy	-	-	-	-	-	-	-
19	Other revenues - distribution plant related	1,404	-	1,404	-	1,404	41.88	161
20	Other revenues - NC retail specific	271	-	271	-	271	41.88	31
21	Electric operating revenues	3,657,503	(296,495)	3,361,008	3,145	3,364,153	42.16	388,565
22	Fuel used in electric generation:							
23	O&M production energy - fuel	863,120	(29,989)	833,131	442	833,573	28.49	65,064
24	RECS consumption expense	18,522	-	18,522	-	18,522	28.49	1,446
25	Fuel used in electric generation	881,642	(29,989)	851,653	442	852,095	28.49	66,510
26	Purchased power:							
27	O&M production purchases - capacity cost	67,280	-	67,280	-	67,280	30.29	5,583
28	O&M production purchases - energy cost	365,384	(1,965)	363,419	(710)	362,709	30.29	30,100
29	O&M deferred fuel expense	(273,901)	-	(273,901)	-	(273,901)	28.49	(21,379)
30	Purchased power	158,763	(1,965)	156,798	(710)	156,088	33.45	14,304
31	Other O&M expense:							
32	Labor expense	430,295	(22,193)	408,102	(5,536)	402,566	37.07	40,885
33	Pension & benefits	76,271	(6,358)	69,913	-	69,913	13.97	2,676
34	Regulatory commission expense	7,038	(234)	6,804	-	6,804	93.25	1,738
35	Property insurance	(526)	-	(526)	-	(526)	(222.30)	320
36	Injuries & damages - workman's compensation	197	-	197	-	197	-	-
37	Uncollectible accounts	8,937	-	8,937	-	8,937	-	-
38	Other O&M expense	528,607	4,836	533,443	(17,255)	516,188	40.52	57,304
39	Adjust for other revenue	-	(1,025)	-	-	(1,025)	37.32	(105)
40	Adjust for non fuel riders/aviation/merger	-	(141,634)	(141,634)	-	(141,634)	37.32	(14,482)
41	Adjust for non-labor O&M	-	4,241	4,241	-	4,241	33.30	387
42	Adjust for rate case expense/reg assets & liabilities	-	2,304	2,304	-	2,304	-	-
43	Adjust for Severance	-	(24,140)	(24,140)	-	(24,140)	37.07	(2,452)
44	Adjust for Outside Services	-	-	-	(32)	(32)	37.07	(3)
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	(3,800)	(3,800)	-	(3,800)	37.32	(389)
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-	-
47	Total Other O&M expenses	1,050,819	(188,003)	862,816	(22,822)	839,994	37.32	85,879
48	Depreciation | amortization | P&C losses:							
49	Depreciation & amortization	669,787	290,680	960,467	(179,457)	781,010	-	-
50	Adjust other amortization expense	-	-	-	(30,548)	(30,548)	-	-
51	Total depreciation & amortization expense	669,787	290,680	960,467	(210,005)	750,463	-	-
52	Taxes other than income taxes:							
53	Payroll taxes	26,288	(1,228)	25,060	-	25,060	48.41	3,324
54	Property taxes	68,133	9,087	77,220	-	77,220	186.50	39,456
55	Other taxes - federal heavy vehicle use tax	48	-	48	62	110	-	-
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-	-
57	Other taxes - privilege tax	12,244	-	12,244	-	12,244	(11.97)	(402)
58	Miscellaneous taxes - NC	(4,517)	-	(4,517)	(702)	(5,219)	60.00	(858)
59	Miscellaneous taxes - SC & other states	1	-	1	-	1	-	-
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-	-
61	Adjust costs recovered through non-fuel riders	-	(6,458)	(6,458)	-	(6,458)	137.26	(2,429)
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	186.50	-
63	Total taxes other than income taxes	102,197	1,401	103,598	(640)	102,958	138.58	39,091
64	Interest on customer deposits	7,971	-	7,971	-	7,971	137.50	3,003
65	Income taxes:							
66	Federal income taxes	(49,091)	-	(49,091)	-	(49,091)	44.75	-
67	State income taxes	(2,917)	-	(2,917)	-	(2,917)	44.75	-
68	Income taxes - deferred	164,994	-	164,994	-	164,994	-	-
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	(129,831)	(129,831)	-	(129,831)	20.60	(7,327)
70	Adjust costs recovered through non-fuel riders	-	63,168	63,168	-	63,168	-	-
71	Adjust for Federal & State income taxes	-	(912)	(912)	53,188	52,276	20.60	2,950
72	Total income taxes	112,986	(67,575)	45,411	53,188	98,600	(16.20)	(4,377)
73								
74	Amortization of ITC	(2,134)	(1,481)	(3,615)	34	(3,581)	-	-
75	Total utility operating expenses	2,982,032	3,068	2,985,100	(180,513)	2,804,587	26.60	204,410
76	Interest expense	211,661	(5,484)	206,177	6,848	213,026	-	-
77	Income available for common equity	463,810	(294,079)	169,731	-	169,731	-	-
78	Net operating income for return	675,472	(299,563)	375,908	6,848	382,756	-	-
79	Total requirement	3,657,503	(296,495)	3,361,008	(173,665)	3,187,343	23.41	204,410
80	Cash working capital per Public Staff, before Sales Tax Adjustment (L21 - (L75 + L76))							184,155
81	Amount per Books per Company application					160,141	^{8/}	
82	ADD(LESS): Accounting Adjustments					(29,799)	^{8/}	130,342
83	Adjustment to cash working capital							53,813

^{1/} E-1, Item No. 14, Lead Lag Summary Detail, NC Retail Jurisdictional Amount.

^{2/} Smith Rebuttal Exhibit 1.

^{3/} Column (a) plus Column (b).

^{4/} Maness Stipulation Exhibit 1, Schedule 2-1(f)(1), Column (adj).

^{5/} Column (c) plus Column (d).

^{6/} E-1, Item No. 14, Lead Lag Summary Detail, as corrected by the Company.

^{7/} Column (e) divided by 365 days, multiplied by Column (f).

^{8/} Smith Rebuttal Exhibit 1, Page 4d, Line 1, Columns (2), (3), and (4)

DUKE ENERGY PROGRESS, LLC
 Docket No. E-2, Sub 1219
 North Carolina Retail Operations
**PUBLIC STAFF ADJUSTMENTS TO BE REFLECTED IN
 LEAD LAG CALCULATION**
 For the Test Year Ended December 31, 2018
 (Dollar Amounts Expressed in Thousands)

Public Staff
 Maness Stipulation Exhibit 1
 Schedule 2-1 (f)(1)
 Page 1 of 5

Line No.	Item	Update		Adjust Credit Card Fees	Remove		Include		Adjust Depreciation Rates	Adjust Salaries & Wages
		Update Plant to 2/29/2020	Revenues/ Customer Growth/ Weather to 2/29/2020		EDIT Refunds for Treatment as Riders	Flowback EDIT due to Tax Cuts & Jobs Act				
		(a) 1/	(b) 1/	(c) 1/	(d) 1/	(e) 1/	(f) 1/	(g) 1/		
1	Electric operating revenues:									
2	Rate revenues	\$0	\$3,311	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-	-	-	-	-
4	Provisions for rate refunds	-	-	-	-	-	-	-	-	-
5	Forfeited discounts	-	-	-	-	-	-	-	-	-
6	Miscellaneous service revenues	-	-	-	-	-	-	-	-	-
7	Rent revenues - production plant related	-	-	-	-	-	-	-	-	-
8	Rent revenues - distribution pole rental revenue	-	-	-	-	-	-	-	-	-
9	Rent revenues - transmission plant related	-	-	-	-	-	-	-	-	-
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-	-	-	-
11	Rent revenues - additional facilities - ret X lighting	-	-	-	-	-	-	-	-	-
12	Rent revenues - additional facilities - lighting	-	-	-	-	-	-	-	-	-
13	Rent revenues - other	-	-	-	-	-	-	-	-	-
14	Other revenues - production plant related	-	-	-	-	-	-	-	-	-
15	Other revenues - transmission related	-	-	-	-	-	-	-	-	-
16	Other revenues - wholesale D/A	-	-	-	-	-	-	-	-	-
17	Other revenues - REPS	-	-	-	-	-	-	-	-	-
18	Other revenues - other energy	-	-	-	-	-	-	-	-	-
19	Other revenues - distribution plant related	-	-	-	-	-	-	-	-	-
20	Other revenues - NC retail specific	-	-	-	-	-	-	-	-	-
21	Electric operating revenues	-	3,311	-	-	-	-	-	-	-
22	Fuel used in electric generation:									
23	O&M production energy - fuel	-	442	-	-	-	-	-	-	-
24	RECS consumption expense	-	-	-	-	-	-	-	-	-
25	Fuel used in electric generation	-	442	-	-	-	-	-	-	-
26	Purchased power:									
27	O&M production purchases - capacity cost	-	-	-	-	-	-	-	-	-
28	O&M production purchases - energy cost	-	-	-	-	-	-	-	-	-
29	O&M deferred fuel expense	-	-	-	-	-	-	-	-	-
30	Purchased power	-	-	-	-	-	-	-	-	-
31	Other O&M expense:									
32	Labor expense	-	-	-	-	-	-	-	-	-
33	Pension & benefits	-	-	-	-	-	-	-	-	-
34	Regulatory commission expense	-	-	-	-	-	-	-	-	-
35	Property insurance	-	-	-	-	-	-	-	-	-
36	Injuries & damages - workman's compensation	-	-	-	-	-	-	-	-	-
37	Uncollectible accounts	-	-	-	-	-	-	-	-	-
38	Other O&M expense	-	(1,712)	-	-	-	-	-	-	-
39	Adjust for other revenue	-	-	-	-	-	-	-	-	-
40	Adjust for non fuel riders/aviation/merger	-	-	-	-	-	-	-	-	-
41	Adjust for non-labor O&M	-	-	-	-	-	-	-	-	-
42	Adjust for rate case expense/reg assets & liabilities	-	-	-	-	-	-	-	-	-
43	Adjust for Severance	-	-	-	-	-	-	-	-	-
44	Adjust for Outside Services	-	-	-	-	-	-	-	-	-
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	-	-	-	-	-	-	-	-
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-	-	-	-
47	Total Other O&M expenses	-	(1,712)	-	-	-	-	-	-	-
48	Depreciation | amortization | P&C losses:									
49	Depreciation & amortization	(417)	-	-	-	-	-	(43,608)	-	-
50	Adjust other amortization expense	-	-	-	-	-	(30,548)	-	-	-
51	Total depreciation & amortization expense	(417)	-	-	-	-	(30,548)	(43,608)	-	-
52	Taxes other than income taxes:									
53	Payroll taxes	-	-	-	-	-	-	-	-	-
54	Property taxes	-	-	-	-	-	-	-	-	-
55	Other taxes - federal heavy vehicle use tax	62	-	-	-	-	-	-	-	-
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-	-	-	-
57	Other taxes - privilege tax	-	-	-	-	-	-	-	-	-
58	Miscellaneous taxes - NC	-	-	-	-	-	-	-	-	-
59	Miscellaneous taxes - SC & other states	-	-	-	-	-	-	-	-	-
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-	-	-	-
61	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-	-	-
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	-	-	-	-
63	Total taxes other than income taxes	62	-	-	-	-	-	-	-	-
64	Interest on customer deposits	-	-	-	-	-	-	-	-	-
65	Income taxes:									
66	Federal income taxes	-	-	-	-	-	-	-	-	-
67	State income taxes	-	-	-	-	-	-	-	-	-
68	Income taxes - deferred	-	-	-	-	-	-	-	-	-
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	-	-	-	-	-	-	-	-
70	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-	-	-
71	Adjust for Federal & State income taxes	82	1,061	-	-	7,078	10,104	-	-	-
72	Adjust for Federal & State income taxes	82	1,061	-	-	7,078	10,104	-	-	-
73	Total income taxes	-	-	-	-	-	-	-	-	-
74	Amortization of ITC	-	-	-	-	-	-	-	-	-
75	Total utility operating expenses	(273)	(209)	-	-	(23,470)	(33,504)	-	-	-
76	Interest expense	-	-	-	-	-	-	-	-	-
77	Income available for common equity	273	3,520	-	-	23,470	33,504	-	-	-
78	Net operating income for return	273	3,520	-	-	23,470	33,504	-	-	-
79	Total requirement	-	3,311	-	-	-	-	-	-	-

1/ Based on adjustments made by Public Staff in Maness Stipulation Exhibit 1, Schedule 3-1.

2/ Line 21 minus Line 75 minus Line 77.

3/ Sum of Columns (a) through Column (ad).

DUKE ENERGY PROGRESS, LLC
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**PUBLIC STAFF ADJUSTMENTS TO BE REFLECTED IN
 LEAD LAG CALCULATION**
 For the Test Year Ended December 31, 2018
 (Dollar Amounts Expressed in Thousands)

Public Staff
 Maness Stipulation Exhibit 1
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Line No.	Item	Adjust Incentives (h)	Adjust Severance Costs (i)	Adjust Executive Compensation (j)	Adjust Aviation Expenses (k)	Adjust EOL Nuclear M&S Reserve Amortization (l)	Adjustment to Remove Deferred Environmental Costs - ARO (m)	Adjustment to Remove Deferred Non-ARO Environmental Costs (n)
1	Electric operating revenues:							
2	Rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-	-	-
4	Provisions for rate refunds	-	-	-	-	-	-	-
5	Forfeited discounts	-	-	-	-	-	-	-
6	Miscellaneous service revenues	-	-	-	-	-	-	-
7	Rent revenues - production plant related	-	-	-	-	-	-	-
8	Rent revenues - distribution pole rental revenue	-	-	-	-	-	-	-
9	Rent revenues - transmission plant related	-	-	-	-	-	-	-
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-	-
11	Rent revenues - additional facilities - ret X lighting	-	-	-	-	-	-	-
12	Rent revenues - additional facilities - lighting	-	-	-	-	-	-	-
13	Rent revenues - other	-	-	-	-	-	-	-
14	Other revenues - production plant related	-	-	-	-	-	-	-
15	Other revenues - transmission related	-	-	-	-	-	-	-
16	Other revenues - wholesale D/A	-	-	-	-	-	-	-
17	Other revenues - REPS	-	-	-	-	-	-	-
18	Other revenues - other energy	-	-	-	-	-	-	-
19	Other revenues - distribution plant related	-	-	-	-	-	-	-
20	Other revenues - NC retail specific	-	-	-	-	-	-	-
21	Electric operating revenues	-	-	-	-	-	-	-
22	Fuel used in electric generation:							
23	O&M production energy - fuel	-	-	-	-	-	-	-
24	RECS consumption expense	-	-	-	-	-	-	-
25	Fuel used in electric generation	-	-	-	-	-	-	-
26	Purchased power:							
27	O&M production purchases - capacity cost	-	-	-	-	-	-	-
28	O&M production purchases - energy cost	-	-	-	-	-	-	-
29	O&M deferred fuel expense	-	-	-	-	-	-	-
30	Purchased power	-	-	-	-	-	-	-
31	Other O&M expense:							
32	Labor expense	(3,898)	-	(160)	-	-	-	-
33	Pension & benefits	-	-	-	-	-	-	-
34	Regulatory commission expense	-	-	-	-	-	-	-
35	Property insurance	-	-	-	-	-	-	-
36	Injuries & damages - workman's compensation	-	-	-	-	-	-	-
37	Uncollectible accounts	-	-	-	-	-	-	-
38	Other O&M expense	-	(0)	-	(204)	-	-	-
39	Adjust for other revenue	-	-	-	-	-	-	-
40	Adjust for non fuel riders/aviation/merger	-	-	-	-	-	-	-
41	Adjust for non-labor O&M	-	-	-	-	-	-	-
42	Adjust for rate case expense/reg assets & liabilities	-	-	-	-	-	-	-
43	Adjust for Severance	-	-	-	-	-	-	-
44	Adjust for Outside Services	-	-	-	-	-	-	-
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	-	-	-	-	-	-
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-	-
47	Total Other O&M expenses	(3,898)	(0)	(160)	(204)	-	-	-
48	Depreciation | amortization | P&C losses:							
49	Depreciation & amortization	-	-	-	-	(1,807)	(77,167)	(3,958)
50	Adjust other amortization expense	-	-	-	-	-	-	-
51	Total depreciation & amortization expense	-	-	-	-	(1,807)	(77,167)	(3,958)
52	Taxes other than income taxes:							
53	Payroll taxes	-	-	-	-	-	-	-
54	Property taxes	-	-	-	-	-	-	-
55	Other taxes - federal heavy vehicle use tax	-	-	-	-	-	-	-
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-	-
57	Other taxes - privilege tax	-	-	-	-	-	-	-
58	Miscellaneous taxes - NC	-	-	-	-	-	-	-
59	Miscellaneous taxes - SC & other states	-	-	-	-	-	-	-
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-	-
61	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	-	-
63	Total taxes other than income taxes	-	-	-	-	-	-	-
64	Interest on customer deposits	-	-	-	-	-	-	-
65	Income taxes:							
66	Federal income taxes	-	-	-	-	-	-	-
67	State income taxes	-	-	-	-	-	-	-
68	Income taxes - deferred	-	-	-	-	-	-	-
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	-	-	-	-	-	-
70	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-
71	Adjust for Federal & State income taxes	903	-	37	47	419	17,879	917
72	Total income taxes	903	-	37	47	419	17,879	917
73	Amortization of ITC	-	-	-	-	-	-	-
74	Amortization of ITC	-	-	-	-	-	-	-
75	Total utility operating expenses	(2,995)	(0)	(123)	(157)	(1,388)	(59,288)	(3,041)
76	Interest expense	-	-	-	-	-	-	-
77	Income available for common equity	2,995	0	123	157	1,388	59,288	3,041
78	Net operating income for return	2,995	0	123	157	1,388	59,288	3,041
79	Total requirement	-	-	-	-	-	-	-

DUKE ENERGY PROGRESS, LLC
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Public Staff
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Line No.	Item	Adjust to	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust
		Normalize	Storm	Lobbying	Board of	Outside	Charitable	Inflation	
		Storm	Deferral	Expense	Directors	Services	Contributions,	Adjustment to	
		Costs			Expense		and Corporate	Inflation	
		(c)	(p)	(q)	(r)	(s)	Sponsorships	Adjustment	
		1/	1/	1/	1/	1/	& Donations		
							(t)	(u)	
1	Electric operating revenues:								
2	Rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3	Sales for resale revenues	-	-	-	-	-	-	-	
4	Provisions for rate refunds	-	-	-	-	-	-	-	
5	Forfeited discounts	-	-	-	-	-	-	-	
6	Miscellaneous service revenues	-	-	-	-	-	-	-	
7	Rent revenues - production plant related	-	-	-	-	-	-	-	
8	Rent revenues - distribution pole rental revenue	-	-	-	-	-	-	-	
9	Rent revenues - transmission plant related	-	-	-	-	-	-	-	
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-	-	
11	Rent revenues - additional facilities - ret X lighting	-	-	-	-	-	-	-	
12	Rent revenues - additional facilities - lighting	-	-	-	-	-	-	-	
13	Rent revenues - other	-	-	-	-	-	-	-	
14	Other revenues - production plant related	-	-	-	-	-	-	-	
15	Other revenues - transmission related	-	-	-	-	-	-	-	
16	Other revenues - wholesale D/A	-	-	-	-	-	-	-	
17	Other revenues - REPS	-	-	-	-	-	-	-	
18	Other revenues - other energy	-	-	-	-	-	-	-	
19	Other revenues - distribution plant related	-	-	-	-	-	-	-	
20	Other revenues - NC retail specific	-	-	-	-	-	-	-	
21	Electric operating revenues	-	-	-	-	-	-	-	
22	Fuel used in electric generation:								
23	O&M production energy - fuel	-	-	-	-	-	-	-	
24	RECS consumption expense	-	-	-	-	-	-	-	
25	Fuel used in electric generation	-	-	-	-	-	-	-	
26	Purchased power:								
27	O&M production purchases - capacity cost	-	-	-	-	-	-	-	
28	O&M production purchases - energy cost	-	-	-	-	-	-	-	
29	O&M deferred fuel expense	-	-	-	-	-	-	-	
30	Purchased power	-	-	-	-	-	-	-	
31	Other O&M expense:								
32	Labor expense	-	-	(\$1,478)	-	-	-	-	
33	Pension & benefits	-	-	-	-	-	-	-	
34	Regulatory commission expense	-	-	-	-	-	-	-	
35	Property insurance	-	-	-	-	-	-	-	
36	Injuries & damages - workman's compensation	-	-	-	-	-	-	-	
37	Uncollectible accounts	-	-	-	-	-	-	-	
38	Other O&M expense	9,300	-	-	(\$1,270)	-	(\$23)	(98)	
39	Adjust for other revenue	-	-	-	-	-	-	-	
40	Adjust for non fuel riders/aviation/merger	-	-	-	-	-	-	-	
41	Adjust for non-labor O&M	-	-	-	-	-	-	-	
42	Adjust for rate case expense/reg assets & liabilities	-	-	-	-	-	-	-	
43	Adjust for Severance	-	-	-	-	-	-	-	
44	Adjust for Outside Services	-	-	-	-	(32)	-	-	
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	-	-	-	-	-	-	
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-	-	
47	Total Other O&M expenses	9,300	-	(1,478)	(1,270)	(32)	(23)	(98)	
48	Depreciation | amortization | P&C losses:								
49	Depreciation & amortization	-	(44,793)	-	-	-	-	-	
50	Adjust other amortization expense	-	-	-	-	-	-	-	
51	Total depreciation & amortization expense	-	(44,793)	-	-	-	-	-	
52	Taxes other than income taxes:								
53	Payroll taxes	-	-	-	-	-	-	-	
54	Property taxes	-	-	-	-	-	-	-	
55	Other taxes - federal heavy vehicle use tax	-	-	-	-	-	-	-	
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-	-	
57	Other taxes - privilege tax	-	-	-	-	-	-	-	
58	Miscellaneous taxes - NC	-	-	-	-	-	-	-	
59	Miscellaneous taxes - SC & other states	-	-	-	-	-	-	-	
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-	-	
61	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-	
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	-	-	
63	Total taxes other than income taxes	-	-	-	-	-	-	-	
64	Interest on customer deposits	-	-	-	-	-	-	-	
65	Income taxes:								
66	Federal income taxes	-	-	-	-	-	-	-	
67	State income taxes	-	-	-	-	-	-	-	
68	Income taxes - deferred	-	-	-	-	-	-	-	
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	-	-	-	-	-	-	
70	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-	-	
71	Adjust for Federal & State income taxes	(2,155)	10,378	342	294	7	5	23	
72	Total income taxes	(2,155)	10,378	342	294	7	5	23	
73	Amortization of ITC	-	-	-	-	-	-	-	
74	Amortization of ITC	-	-	-	-	-	-	-	
75	Total utility operating expenses	7,145	(34,415)	(1,136)	(976)	(25)	(18)	(75)	
76	Interest expense	-	-	-	-	-	-	-	
77	Income available for common equity	(7,145)	34,415	1,136	976	25	18	75	
78	Net operating income for return	(7,145)	34,415	1,136	976	25	18	75	
79	Total requirement	-	-	-	-	-	-	-	

DUKE ENERGY PROGRESS, LLC
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North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO BE REFLECTED IN
LEAD LAG CALCULATION
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Line No.	Item	Adjustment to Remove CertainTeeed Payment Obligation		Adjustment to Nuclear Decommissioning Expense		Adjustment to Remove Rate Case Expense		Adjustment to COSS - SWP&A Reallocation		Adjust Asheville CC Plant in Service Costs		Adjust Asheville CC Deferral	
		1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/
		(v)	(w)	(x)	(y)	(z)	(aa)						
1	Electric operating revenues:												
2	Rate revenues	\$0	\$0	\$0	(\$166)	\$0	\$0						
3	Sales for resale revenues	-	-	-	-	-	-						
4	Provisions for rate refunds	-	-	-	-	-	-						
5	Forfeited discounts	-	-	-	-	-	-						
6	Miscellaneous service revenues	-	-	-	-	-	-						
7	Rent revenues - production plant related	-	-	-	-	-	-						
8	Rent revenues - distribution pole rental revenue	-	-	-	-	-	-						
9	Rent revenues - transmission plant related	-	-	-	-	-	-						
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-						
11	Rent revenues - additional facilities - ret X lighting	-	-	-	-	-	-						
12	Rent revenues - additional facilities - lighting	-	-	-	-	-	-						
13	Rent revenues - other	-	-	-	-	-	-						
14	Other revenues - production plant related	-	-	-	-	-	-						
15	Other revenues - transmission related	-	-	-	-	-	-						
16	Other revenues - wholesale D/A	-	-	-	-	-	-						
17	Other revenues - REPS	-	-	-	-	-	-						
18	Other revenues - other energy	-	-	-	-	-	-						
19	Other revenues - distribution plant related	-	-	-	-	-	-						
20	Other revenues - NC retail specific	-	-	-	-	-	-						
21	Electric operating revenues	-	-	-	(166)	-	\$0						
22	Fuel used in electric generation:												
23	O&M production energy - fuel	-	-	-	-	-	-						
24	RECS consumption expense	-	-	-	-	-	-						
25	Fuel used in electric generation	-	-	-	-	-	-						
26	Purchased power:												
27	O&M production purchases - capacity cost	-	-	-	-	-	-						
28	O&M production purchases - energy cost	-	-	-	(710)	-	-						
29	O&M deferred fuel expense	-	-	-	-	-	-						
30	Purchased power	-	-	-	(710)	-	-						
31	Other O&M expense:												
32	Labor expense	-	-	-	-	-	-						
33	Pension & benefits	-	-	-	-	-	-						
34	Regulatory commission expense	-	-	-	-	-	-						
35	Property insurance	-	-	-	-	-	-						
36	Injuries & damages - workman's compensation	-	-	-	-	-	-						
37	Uncollectible accounts	-	-	-	-	-	-						
38	Other O&M expense	-	(16,537)	-	(2,639)	(0)	-						
39	Adjust for other revenue	-	-	-	-	-	-						
40	Adjust for non fuel riders/aviation/merger	-	-	-	-	-	-						
41	Adjust for non-labor O&M	-	-	-	-	-	-						
42	Adjust for rate case expense/reg assets & liabilities	-	-	-	-	-	-						
43	Adjust for Severance	-	-	-	-	-	-						
44	Adjust for Outside Services	-	-	-	-	-	-						
45	Adjust for Asheville Plants (Steam & CC) and CertainTeeed	-	-	-	-	-	-						
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-						
47	Total Other O&M expenses	-	(16,537)	-	(2,639)	(0)	-						
48	Depreciation | amortization | P&C losses:												
49	Depreciation & amortization	-	-	-	(6,326)	-	(1,381)						
50	Adjust other amortization expense	-	-	-	-	-	-						
51	Total depreciation & amortization expense	-	-	-	(6,326)	-	(1,381)						
52	Taxes other than income taxes:												
53	Payroll taxes	-	-	-	-	-	-						
54	Property taxes	-	-	-	-	-	-						
55	Other taxes - federal heavy vehicle use tax	-	-	-	-	-	-						
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-						
57	Other taxes - privilege tax	-	-	-	-	-	-						
58	Miscellaneous taxes - NC	-	-	-	(702)	-	-						
59	Miscellaneous taxes - SC & other states	-	-	-	-	-	-						
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-						
61	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-						
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	-						
63	Total taxes other than income taxes	-	-	-	(702)	-	-						
64	Interest on customer deposits	-	-	-	-	-	-						
65	Income taxes:												
66	Federal income taxes	-	-	-	-	-	-						
67	State income taxes	-	-	-	-	-	-						
68	Income taxes - deferred	-	-	-	-	-	-						
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	-	-	-	-	-						
70	Adjust costs recovered through non-fuel riders	-	-	-	-	-	-						
71	Adjust for Federal & State income taxes	-	3,831	-	2,260	-	320						
72	Adjust for Federal & State income taxes	-	3,831	-	2,260	-	320						
73	Total income taxes	-	3,831	-	2,260	-	320						
74	Amortization of ITC	-	-	-	34	-	-						
75	Total utility operating expenses	-	(12,706)	-	(8,083)	(0)	(1,061)						
76	Interest expense	-	-	-	-	-	-						
77	Income available for common equity	2/	12,706	-	7,917	0	1,061						
78	Net operating income for return	-	12,706	-	7,917	0	1,061						
79	Total requirement	-	-	-	(166)	-	-						

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO BE REFLECTED IN
LEAD LAG CALCULATION
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(Dollar Amounts Expressed in Thousands)

Public Staff
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Line No.	Item	Adjust for Asheville Production Displacement (ab) 1/	Interest Synchronization (ac) 1/	Total Public Staff Adjustments (ad) 3/
1	Electric operating revenues:			
2	Rate revenues	\$0	\$0	\$3,145
3	Sales for resale revenues	-	-	-
4	Provisions for rate refunds	-	-	-
5	Forfeited discounts	-	-	-
6	Miscellaneous service revenues	-	-	-
7	Rent revenues - production plant related	-	-	-
8	Rent revenues - distribution pole rental revenue	-	-	-
9	Rent revenues - transmission plant related	-	-	-
10	Rent revenues - additional facilities - wholesale	-	-	-
11	Rent revenues - additional facilities - ret X lighting	-	-	-
12	Rent revenues - additional facilities - lighting	-	-	-
13	Rent revenues - other	-	-	-
14	Other revenues - production plant related	-	-	-
15	Other revenues - transmission related	-	-	-
16	Other revenues - wholesale D/A	-	-	-
17	Other revenues - REPS	-	-	-
18	Other revenues - other energy	-	-	-
19	Other revenues - distribution plant related	-	-	-
20	Other revenues - NC retail specific	-	-	-
21	Electric operating revenues	<u>\$0</u>	<u>-</u>	<u>\$3,145</u>
22	Fuel used in electric generation:			
23	O&M production energy - fuel	-	-	442
24	RECS consumption expense	-	-	-
25	Fuel used in electric generation	<u>-</u>	<u>-</u>	<u>442</u>
26	Purchased power:			
27	O&M production purchases - capacity cost	-	-	-
28	O&M production purchases - energy cost	-	-	(710)
29	O&M deferred fuel expense	-	-	-
30	Purchased power	<u>-</u>	<u>-</u>	<u>(710)</u>
31	Other O&M expense:			
32	Labor expense	-	-	(5,536)
33	Pension & benefits	-	-	-
34	Regulatory commission expense	-	-	-
35	Property insurance	-	-	-
36	Injuries & damages - workman's compensation	-	-	-
37	Uncollectible accounts	-	-	-
38	Other O&M expense	(4,072)	-	(17,255)
39	Adjust for other revenue	-	-	-
40	Adjust for non-fuel riders/aviation/merger	-	-	-
41	Adjust for non-labor O&M	-	-	-
42	Adjust for rate case expense/reg assets & liabilities	-	-	-
43	Adjust for Severance	-	-	-
44	Adjust for Outside Services	-	-	(32)
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	-	-
46	Other adjustments to regulatory fees and uncollectibles	-	-	-
47	Total Other O&M expenses	<u>(4,072)</u>	<u>-</u>	<u>(22,822)</u>
48	Depreciation | amortization | P&C losses:			
49	Depreciation & amortization	-	-	(179,457)
50	Adjust other amortization expense	-	-	(30,548)
51	Total depreciation & amortization expense	<u>-</u>	<u>-</u>	<u>(210,005)</u>
52	Taxes other than income taxes:			
53	Payroll taxes	-	-	-
54	Property taxes	-	-	-
55	Other taxes - federal heavy vehicle use tax	-	-	62
56	Other taxes - electric excise tax - SC	-	-	-
57	Other taxes - privilege tax	-	-	-
58	Miscellaneous taxes - NC	-	-	(702)
59	Miscellaneous taxes - SC & other states	-	-	-
60	Other taxes - PUC license tax - SC	-	-	-
61	Adjust costs recovered through non-fuel riders	-	-	-
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-
63	Total taxes other than income taxes	<u>-</u>	<u>-</u>	<u>(640)</u>
64	Interest on customer deposits	<u>-</u>	<u>-</u>	<u>-</u>
65	Income taxes:			
66	Federal income taxes	-	-	-
67	State income taxes	-	-	-
68	Income taxes - deferred	-	-	-
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	-	-
70	Adjust costs recovered through non-fuel riders	-	-	-
71	Adjust for Federal & State income taxes	943	(1,587)	53,188
72	Total income taxes	<u>943</u>	<u>(1,587)</u>	<u>53,188</u>
73	Amortization of ITC	<u>-</u>	<u>-</u>	<u>34</u>
74	Amortization of ITC	<u>-</u>	<u>-</u>	<u>34</u>
75	Total utility operating expenses	<u>(3,129)</u>	<u>(1,587)</u>	<u>(180,513)</u>
76	Interest expense	-	6,848	6,848
77	Income available for common equity	<u>3,129</u>	<u>(5,261)</u>	<u>176,809</u>
78	Net operating income for return	<u>3,129</u>	<u>1,587</u>	<u>183,658</u>
79	Total requirement	<u>-</u>	<u>0</u>	<u>3,145</u>

DUKE ENERGY PROGRESS, LLC
 Docket No. E-2, Sub 1219
 North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM LEAD / LAG
 STUDY AFTER RATE INCREASE
 For the Test Year Ended December 31, 2018
 (Dollar Amounts Expressed in Thousands)

Public Staff
 Maness Stipulation Exhibit 1
 Schedule 2-1(g)
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Line No.	Item	Under	Lead Lag Days	Iteration 1		CWC Change
		Present Rates Alter Adjustments		Increase	With Increase	
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Rate revenues	\$3,282,437	41.88	\$390,186 ^{5/}	\$3,672,624	\$44,770
3	Sales for resale revenues	134,915	33.73	-	134,915	-
4	Provisions for rate refunds	(104,546)	41.88	-	(104,546)	-
5	Forfeited discounts	7,664	72.30	-	7,664	-
6	Miscellaneous service revenues	5,506	76.00	-	5,506	-
7	Rent revenues - production plant related	4,466	41.63	-	4,466	-
8	Rent revenues - distribution pole rental revenue	10,901	182.00	-	10,901	-
9	Rent revenues - transmission plant related	382	41.63	-	382	-
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-
11	Rent revenues - additional facilities - ret. X lighting	4,617	41.63	-	4,617	-
12	Rent revenues - additional facilities - lighting	3,849	41.63	-	3,849	-
13	Rent revenues - other	3,413	68.21	-	3,413	-
14	Other revenues - production plant related	1,184	41.88	-	1,184	-
15	Other revenues - transmission related	6,208	41.88	-	6,208	-
16	Other revenues - wholesale DIA	368	41.88	-	368	-
17	Other revenues - REPS	1,114	41.88	-	1,114	-
18	Other revenues - other energy	-	-	-	-	-
19	Other revenues - distribution plant related	1,404	41.88	-	1,404	-
20	Other revenues - NC retail specific	271	41.88	-	271	-
21	Electric operating revenues	<u>\$3,364,153</u>	42.16	<u>\$390,186 ^{6/}</u>	<u>3,754,339</u>	<u>44,770</u>
22	Fuel used in electric generation:					
23	O&M production energy - fuel	833,573	28.49	-	833,573	-
24	RECS consumption expense	18,522	28.49	-	18,522	-
25	Fuel used in electric generation	<u>852,095</u>	28.49	-	<u>852,095</u>	-
26	Purchased power:					
27	O&M production purchases - capacity cost	67,280	30.29	-	67,280	-
28	O&M production purchases - energy cost	362,709	30.29	-	362,709	-
29	O&M deferred fuel expense	(273,901)	28.49	-	(273,901)	-
30	Purchased power	<u>156,088</u>	33.45	-	<u>156,088</u>	-
31	Other O&M expense:					
32	Labor expense	402,566	37.07	-	402,566	-
33	Pension & benefits	69,913	13.97	-	69,913	-
34	Regulatory commission expense	6,804	93.25	-	6,804	-
35	Property insurance	(526)	(222.30)	-	(526)	-
36	Injuries & damages - workman's compensation	197	-	-	197	-
37	Uncollectible accounts	8,937	-	-	8,937	-
38	Other O&M expense	516,189	40.52	-	516,189	-
39	Adjust for other revenue	(1,025)	37.32	-	(1,025)	-
40	Adjust for non fuel riders/aviation/merger	(141,634)	37.32	-	(141,634)	-
41	Adjust for non-labor O&M	4,241	33.30	-	4,241	-
42	Adjust for rate case expense/reg assets & liabilities	2,304	-	-	2,304	-
43	Adjust for Severance	(24,140)	37.07	-	(24,140)	-
44	Adjust for Outside Services	(32)	37.07	-	(32)	-
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	(3,800)	37.32	-	(3,800)	-
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-
47	Total Other O&M expenses	<u>839,994</u>	37.32	-	<u>839,994</u>	-
48	Depreciation | amortization | P&C losses:					
49	Depreciation & amortization	781,010	-	-	781,010	-
50	Adjust other amortization expense	(30,548)	-	-	(30,548)	-
51	Total depreciation & amortization expense	<u>750,463</u>	-	-	<u>750,463</u>	-
52	Taxes other than income taxes:					
53	Payroll taxes	25,060	48.41	-	25,060	-
54	Property taxes	77,220	186.50	-	77,220	-
55	Other taxes - federal heavy vehicle use tax	110	-	-	110	-
56	Other taxes - electric excise tax - SC	-	-	-	-	-
57	Other taxes - privilege tax	12,244	(11.97)	-	12,244	-
58	Miscellaneous taxes - NC	(5,219)	60.00	-	(5,219)	-
59	Miscellaneous taxes - SC & other states	1	129.46	-	1	-
60	Other taxes - PUC license tax - SC	-	-	-	-	-
61	Adjust costs recovered through non-fuel riders	(6,458)	137.26	-	(6,458)	-
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	186.50	-	-	-
63	Total taxes other than income taxes	<u>102,958</u>	139.58	-	<u>102,958</u>	-
64	Interest on customer deposits	7,971	137.50	-	7,971	-
65	Income taxes:					
66	Federal income taxes	(49,091)	44.75	-	(49,091)	-
67	State income taxes	(2,917)	44.75	-	(2,917)	-
68	Income taxes - deferred	164,994	-	-	164,994	-
69	Adjust NC income taxes for rate change | Synchronize interest expense	(129,831)	20.60	-	(129,831)	-
70	Adjust costs recovered through non-fuel riders	63,168	-	-	63,168	-
71	Adjust for Federal & State income taxes	52,276	20.60	-	52,276	-
72	Total income taxes	<u>98,600</u>	(16.20)	-	<u>98,600</u>	-
73						
74	Amortization of ITC	(3,581)	-	-	(3,581)	-
75	Total electric operating expenses	<u>2,804,587</u>	-	-	<u>2,804,587</u>	-
76	Interest expense	213,026	-	-	213,026	-
77	Income available for common equity	169,731	-	298,676 ^{7/}	468,407 ^{8/}	-
78	Net operating income for return	<u>382,756</u>	-	<u>298,676</u>	<u>681,433</u>	-
79	Total requirement	<u>\$3,187,344</u>	-	<u>\$298,676</u>	<u>\$3,486,020</u>	<u>\$0</u>
80	Cumulative change in working capital					\$44,770
81	Rate base under present rates					10,409,045
82	Rate base after rate increase	<u>\$10,409,045 ^{9/}</u>				<u>\$10,453,815</u>
83	Overall rate of return (L78 / L82)	3.68%				6.52%
84	Target rate of return	6.55% ^{10/}				6.55%

1/ Maness Stipulation Exhibit 1, Schedule 2-1(f), Column (e).
 2/ Maness Stipulation Exhibit 1, Schedule 2, Line 16, Column (c).
 3/ Maness Stipulation Exhibit 1, Schedule 4, Line 3, Column (h).
 4/ Maness Stipulation Exhibit 1, Schedule 2-1(f), Column (f).
 5/ Line 21 minus (Sum of Line 3 through Line 20).

6/ Line 77 divided by equity retention factor of 0.7654709 from Maness Stipulation Exhibit 1, Schedule 1-2, Line 14.
 7/ Column (d) minus Column (a).
 8/ Column (a) plus Column (c), unless footnoted otherwise.
 9/ Line 82, Column (a) multiplied by 50.000% multiplied by 9.0000%.
 10/ Column (c) divided by 365 days multiplied by Column (b).

DUKE ENERGY PROGRESS, LLC
 Docket No. E-2, Sub 1219
 North Carolina Retail Operations
**CALCULATION OF WORKING CAPITAL FROM LEAD / LAG
 STUDY AFTER RATE INCREASE**
 For the Tact Year Ended December 31, 2018
 (Dollar Amounts Expressed in Thousands)
0

Public Staff
 Maness Stipulation Exhibit 1
 Schedule 2-1(g)
 Page 2 of 2

Line No.	Item	Iteration 2			Iteration 3			After Increase	
		Increase (f)	With Increase (g)	CWC Change (h)	Increase (i)	With Increase (j)	CWC Change (k)	Cumulative Increase (l)	After Increase (m)
1	Electric operating revenues:								
2	Rate revenues	(264,638) ^{11/}	\$3,407,986	(\$30,364)	(\$1,991) ^{17/}	\$3,405,995	(\$228)	\$123,557	\$3,405,995
3	Sales for resale revenues	-	134,915	-	-	134,915	-	-	134,915
4	Provisions for rate refunds	-	(104,546)	-	-	(104,546)	-	-	(104,546)
5	Forfeited discounts	-	7,664	-	-	7,664	-	-	7,664
6	Miscellaneous service revenues	-	5,506	-	-	5,506	-	-	5,506
7	Rent revenues - production plant related	-	4,466	-	-	4,466	-	-	4,466
8	Rent revenues - distribution pole rental revenue	-	10,901	-	-	10,901	-	-	10,901
9	Rent revenues - transmission plant related	-	382	-	-	382	-	-	382
10	Rent revenues - additional facilities - wholesale	-	-	-	-	-	-	-	-
11	Rent revenues - additional facilities - ret. X lighting	-	4,617	-	-	4,617	-	-	4,617
12	Rent revenues - additional facilities - lighting	-	3,849	-	-	3,849	-	-	3,849
13	Rent revenues - other	-	3,413	-	-	3,413	-	-	3,413
14	Other revenues - production plant related	-	1,184	-	-	1,184	-	-	1,184
15	Other revenues - transmission related	-	6,208	-	-	6,208	-	-	6,208
16	Other revenues - wholesale D/A	-	368	-	-	368	-	-	368
17	Other revenues - REPS	-	1,114	-	-	1,114	-	-	1,114
18	Other revenues - other energy	-	-	-	-	-	-	-	-
19	Other revenues - distribution plant related	-	1,404	-	-	1,404	-	-	1,404
20	Other revenues - NC retail specific	-	271	-	-	271	-	-	271
21	Electric operating revenues	(264,638) ^{11/}	3,489,701 ^{13/}	(30,364)	(1,991) ^{17/}	3,487,710 ^{20/}	(228)	123,557	\$3,487,710
22	Fuel used in electric generation:								
23	O&M production energy - fuel	-	833,573	-	-	833,573	-	-	833,573
24	RECS consumption expense	-	18,522	-	-	18,522	-	-	18,522
25	Fuel used in electric generation	-	852,095	-	-	852,095	-	-	852,095
26	Purchased power:								
27	O&M production purchases - capacity cost	-	67,280	-	-	67,280	-	-	67,280
28	O&M production purchases - energy cost	-	362,709	-	-	362,709	-	-	362,709
29	O&M deferred fuel expense	-	(273,901)	-	-	(273,901)	-	-	(273,901)
30	Purchased power	-	156,088	-	-	156,088	-	-	156,088
31	Other O&M expense:								
32	Labor expense	-	402,566	-	-	402,566	-	-	402,566
33	Pension & benefits	-	69,913	-	-	69,913	-	-	69,913
34	Regulatory commission expense	-	6,804	-	-	6,804	-	-	6,804
35	Property insurance	-	(526)	-	-	(526)	-	-	(526)
36	Injuries & damages - workman's compensation	-	197	-	-	197	-	-	197
37	Uncollectible accounts	-	8,937	-	-	8,937	-	-	8,937
38	Other O&M expense	-	516,189	-	-	516,189	-	-	516,189
39	Adjust for other revenue	-	(1,025)	-	-	(1,025)	-	-	(1,025)
40	Adjust for non fuel riders/aviation/merger	-	(141,634)	-	-	(141,634)	-	-	(141,634)
41	Adjust for non-labor O&M	-	4,241	-	-	4,241	-	-	4,241
42	Adjust for rate case expense/reg assets & liabilities	-	2,304	-	-	2,304	-	-	2,304
43	Adjust for Severance	-	(24,140)	-	-	(24,140)	-	-	(24,140)
44	Adjust for Outside Services	-	(32)	-	-	(32)	-	-	(32)
45	Adjust for Asheville Plants (Steam & CC) and CertainTeed	-	(3,800)	-	-	(3,800)	-	-	(3,800)
46	Other adjustments to regulatory fees and uncollectibles	-	-	-	-	-	-	-	-
47	Total Other O&M expenses	-	839,994	-	-	839,994	-	-	839,994
48	Depreciation | amortization | P&C losses:								
49	Depreciation & amortization	-	781,010	-	-	781,010	-	-	781,010
50	Adjust other amortization expense	-	(30,548)	-	-	(30,548)	-	-	(30,548)
51	Total depreciation & amortization expense	-	750,463	-	-	750,463	-	-	750,463
52	Taxes other than income taxes:								
53	Payroll taxes	-	25,060	-	-	25,060	-	-	25,060
54	Property taxes	-	77,220	-	-	77,220	-	-	77,220
55	Other taxes - federal heavy vehicle use tax	-	110	-	-	110	-	-	110
56	Other taxes - electric excise tax - SC	-	-	-	-	-	-	-	-
57	Other taxes - privilege tax	-	12,244	-	-	12,244	-	-	12,244
58	Miscellaneous taxes - NC	-	(5,219)	-	-	(5,219)	-	-	(5,219)
59	Miscellaneous taxes - SC & other states	-	1	-	-	1	-	-	1
60	Other taxes - PUC license tax - SC	-	-	-	-	-	-	-	-
61	Adjust costs recovered through non-fuel riders	-	(6,458)	-	-	(6,458)	-	-	(6,458)
62	Adjust to reflect retirement of Asheville Steam Generating Plant	-	-	-	-	-	-	-	-
63	Total taxes other than income taxes	-	102,958	-	-	102,958	-	-	102,958
64	Interest on customer deposits	-	7,971	-	-	7,971	-	-	7,971
65	Income taxes:								
66	Federal income taxes	-	(49,091)	-	-	(49,091)	-	-	(49,091)
67	State income taxes	-	(2,917)	-	-	(2,917)	-	-	(2,917)
68	Income taxes - deferred	-	164,994	-	-	164,994	-	-	164,994
69	Adjust NC income taxes for rate change | Synchronize interest expense	-	(129,831)	-	-	(129,831)	-	-	(129,831)
70	Adjust costs recovered through non-fuel riders	-	63,168	-	-	63,168	-	-	63,168
72	Adjust for Federal & State income taxes	-	52,276	-	-	52,276	-	-	52,276
73	Total income taxes	-	98,600	-	-	98,600	-	-	98,600
74	Amortization of ITC	-	(3,581)	-	-	(3,581)	-	-	(3,581)
75	Total electric operating expenses	-	2,804,587	-	-	2,804,587	-	-	2,804,587
76	Interest expense	1,666 ^{11/}	214,692 ^{14/}	-	(624) ^{18/}	214,068 ^{21/}	-	1,042	214,068
77	Income available for common equity	2,015 ^{11/}	470,422 ^{15/}	-	(1,367) ^{18/}	469,055 ^{22/}	-	299,324	469,055
78	Net operating income for return	3,681	685,114	-	(1,991)	683,123	-	300,367	683,123
79	Total requirement	3,681	3,489,701	-	(1,991)	3,487,710	-	300,367	3,487,710
80	Cumulative change in working capital	-	-	\$14,406	-	-	\$14,178	-	\$14,178
81	Rate base under present rates	-	-	10,409,045	-	-	10,409,045	-	10,409,045
82	Rate base after rate increase	-	-	\$10,423,451	-	-	\$10,423,223	-	\$10,423,223
83	Overall rate of return (L78 / L82)			6.57%		6.55%		6.55%	6.55%
84	Target rate of return			6.55% ^{3/}		6.55% ^{3/}		6.55% ^{3/}	6.55% ^{3/}

11/ Column (g) minus Column (d).

12/ Column (d) plus Column (f), unless footnoted otherwise.

13/ Column (g), Line 79.

14/ Line 82, Column (e) multiplied by 50.000% multiplied by 4.107%.

15/ Line 82, Column (e) multiplied by 50.000% multiplied by 9.000%.

16/ Column (f) divided by 365 days multiplied by Column (b).

17/ Column (g) minus Column (g).

18/ Column (g) minus Column (g).

19/ Column (g) plus Column (i), unless footnoted otherwise.

20/ Column (j), Line 79.

21/ Line 82, Column (h) multiplied by 50.000% multiplied by 4.107%.

22/ Line 82, Column (h) multiplied by 50.000% multiplied by 9.000%.

23/ Column (i) divided by 365 days multiplied by Column (b).

24/ Column (c) plus Column (f) plus Column (i).

25/ Column (a) plus Column (l), unless footnoted otherwise.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
NET OPERATING INCOME FOR RETURN
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3

Line No.		Under Present Rates			After Public Staff	
		NC Retail Adjusted Per Company ^{1/}	Public Staff Adjustments ^{2/}	After Public Staff Adjustments ^{3/}	Recommended Increase Rate	After Rate Increase ^{7/}
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Sales of electricity	\$ 3,361,009	\$3,145	\$3,364,154	\$161,082 ^{4/}	\$3,525,236
3	Other revenues	-	-	-	-	-
4	Electric operating revenues (Sum of L2 through L3)	<u>\$3,361,009</u>	<u>\$3,145</u>	<u>\$3,364,154</u>	<u>\$161,082</u>	<u>\$3,525,236</u>
5	Electric operating expenses:					
6	Operations and maintenance:					
7	Fuel used in electric generation	851,653	442	852,095	-	852,095
8	Purchased power	156,798	(710)	156,088	-	156,088
9	Other operations and maintenance expenses	862,817	(22,822)	839,995	595 ^{5/}	840,590
10	Depreciation and amortization	960,468	(179,457)	781,011	-	781,011
11	General taxes	103,598	(640)	102,958	-	102,958
12	Interest on customer deposits	7,971	-	7,971	-	7,971
13	Net income taxes	45,506	45,843	91,349	37,116 ^{6/}	128,465
14	Amortization of protected EDIT, net of tax	-	(23,470)	(23,470)	-	(23,470)
15	Amortization of investment tax credit	(3,614)	34	(3,580)	-	(3,580)
16	Total electric operating expenses (Sum of L6 through L15)	<u>2,985,197</u>	<u>(180,780)</u>	<u>2,804,417</u>	<u>37,711</u>	<u>2,842,128</u>
17	Net operating income for return (L4 minus L16)	<u>\$375,812</u>	<u>\$183,925</u>	<u>\$559,737</u>	<u>\$123,371</u>	<u>\$683,108</u>

1/ Based on updated Smith Supplemental Rebuttal 1.

2/ Maness Stipulation Exhibit 1, Schedule 3-1, Column (ad).

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

4/ Maness Stipulation Exhibit 1, Schedule 5, Line 5, Column (c).

5/ Line 4 times (1 minus retention factor after uncollectibles and regulatory fee of 0.9963091 from Maness Stipulation Exhibit 1, Schedule 1-2, Line 10).

6/ (Line 4 minus Line 9) minus (increase in debt expense from Maness Stipulation Exhibit 1, Schedule 5, Line 5, Column (a) multiplied by composite income tax rate of 23.1693%).

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1
Page 1 of 4

Line No.	Item	Update Plant to 2/29/2020 (a)	Update Revenues/ Customer Growth/ Weather to 2/29/2020 (b)	Adjust Credit Card Fees (c)	Remove EDIT Refunds for Treatment as Riders (d)	Include Flowback of Protected EDIT due to Tax Cuts & Jobs Act (e)	Adjust Depreciation Rates (f)	Adjust Salaries & Wages (g)
1	Electric operating revenues:							
2	Sales of electricity	\$0	\$3,311 ^{4/}	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-	-	-
4	Electric operating revenues (Sum of L2 through L3)	-	3,311	-	-	-	-	-
5	Electric operating expenses:							
6	Operations and maintenance:							
7	Fuel used in electric generation	-	442 ^{4/}	-	-	-	-	-
8	Purchased power	-	-	-	-	-	-	-
9	Other operations and maintenance expenses	-	(1,712) ^{4/}	\$0 ^{5/}	-	-	-	- ^{8/}
10	Depreciation and amortization	(417) ^{3/}	-	-	-	- ^{6/}	(43,608) ^{7/}	-
11	General taxes	62 ^{3/}	-	-	-	-	-	- ^{8/}
12	Interest on customer deposits	-	-	-	-	-	-	-
13	Net income taxes	82 ^{2/}	1,061 ^{2/}	- ^{2/}	-	- ^{2/}	10,104 ^{2/}	- ^{2/}
14	Amortization of protected EDIT, net of tax	-	-	-	-	(23,470)	-	-
15	Amortization of investment tax credit	-	-	-	-	-	-	-
16	Total electric operating expenses (Sum of L6 through L15)	(273)	(209)	-	-	(23,470)	(33,504)	-
17	Net operating income for return (L4 minus L16)	273	3,520	-	-	23,470	33,504	-
18	Calculated revenue requirement impact ^{1/}	(\$357)	(\$4,598)	\$0	\$0	(\$30,660)	(\$43,769)	\$0

1/ Negative of Line 16 divided by equity retention factor 0.7635890 from Maness Stipulation Exhibit 1, Schedule 1-2, Line 14.

2/ Line 4 minus Sum of Lines 7 through 12 times composite income tax rate of 23.1693%.

3/ Maness Stipulation Exhibit 1, Schedule 3-1(a).

4/ Maness Stipulation Exhibit 1, Schedule 3-1(b).

5/ Maness Stipulation Exhibit 1, Schedule 3-1(c).

6/ Maness Stipulation Exhibit 1, Schedule 3-1(d).

7/ Maness Stipulation Exhibit 1, Schedule 3-1(e).

8/ Maness Stipulation Exhibit 1, Schedule 3-1(f).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1
Page 2 of 4

Line No.	Item	Adjust Incentives (h)	Adjust Severance Costs (i)	Adjust Executive Compensation (j)	Adjust Aviation Expenses (k)	Adjust Outside Services (l)	Adjust to Normalize Storm Costs (m)	Adjust Storm Deferral (n)
1	Electric operating revenues:							
2	Sales of electricity	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-	-	-
4	Electric operating revenues (Sum of L2 through L3)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
5	Electric operating expenses:							
6	Operations and maintenance:							
7	Fuel used in electric generation	-	-	-	-	-	-	-
8	Purchased power	-	-	-	-	-	-	-
9	Other operations and maintenance expenses	(3,898) ^{9/}	(0) ^{10/}	(160) ^{11/}	(204) ^{12/}	(32) ^{13/}	9,300 ^{14/}	-
10	Depreciation and amortization	-	-	-	-	-	-	(44,793) ^{15/}
11	General taxes	-	-	-	-	-	-	-
12	Interest on customer deposits	-	-	-	-	-	-	-
13	Net income taxes	903 ^{2/}	-	37 ^{2/}	47 ^{2/}	7 ^{2/}	(2,155) ^{2/}	10,378 ^{2/}
14	Amortization of protected EDIT, net of tax	-	-	-	-	-	-	-
15	Amortization of investment tax credit	-	-	-	-	-	-	-
16	Total electric operating expenses (Sum of L6 through L15)	<u>(2,995)</u>	<u>(0)</u>	<u>(123)</u>	<u>(157)</u>	<u>(25)</u>	<u>7,145</u>	<u>(34,415)</u>
17	Net operating income for return (L4 minus L16)	<u>2,995</u>	<u>0</u>	<u>123</u>	<u>157</u>	<u>25</u>	<u>(7,145)</u>	<u>34,415</u>
18	Calculated revenue requirement impact ^{1/}	<u>(\$3,912)</u>	<u>\$0</u>	<u>(\$161)</u>	<u>(\$205)</u>	<u>(\$33)</u>	<u>\$9,334</u>	<u>(\$44,960)</u>

9/ Maness Stipulation Exhibit 1, Schedule 3-1(g).

10/ Maness Stipulation Exhibit 1, Schedule 3-1(h).

11/ Maness Stipulation Exhibit 1, Schedule 3-1(i).

12/ Maness Stipulation Exhibit 1, Schedule 3-1(j).

13/ Maness Stipulation Exhibit 1, Schedule 3-1(k).

14/ Maness Stipulation Exhibit 1, Schedule 3-1(l).

15/ Maness Stipulation Exhibit 1, Schedule 3-1(m).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1
Page 3 of 4

Line No.	Item	Adjust Charitable Contributions, and Corporate Sponsorships & Donations	Adjust Lobbying Expense	Adjust Board of Directors Expense	Adjust EOL Nuclear M&S Reserve Amortization	Adjustment to Remove Deferred Environmental Costs - ARO	Adjustment to Remove Deferred Non-ARO Environmental Costs	Adjustment to Remove Certain Teed Payment Obligation	Adjustment to Inflation Adjustment
		(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)
1	Electric operating revenues:								
2	Sales of electricity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Other revenues	-	-	-	-	-	-	-	-
4	Electric operating revenues (Sum of L2 through L3)	-	-	-	-	-	-	-	-
5	Electric operating expenses:								
6	Operations and maintenance:								
7	Fuel used in electric generation	-	-	-	-	-	-	-	-
8	Purchased power	-	-	-	-	-	-	-	-
9	Other operations and maintenance expenses	(23) ^{16/}	(1,478) ^{17/}	(1,270) ^{18/}	-	-	-	- ^{21/}	(98) ^{22/}
10	Depreciation and amortization	-	-	-	(1,807) ^{19/}	(77,167) ^{20/}	(3,958) ^{20/}	-	-
11	General taxes	-	-	-	-	-	-	-	-
12	Interest on customer deposits	-	-	-	-	-	-	-	-
13	Net income taxes	5 ^{2/}	342 ^{2/}	294 ^{2/}	419 ^{2/}	17,879	917	- ^{2/}	23 ^{2/}
14	Amortization of protected EDIT, net of tax	-	-	-	-	-	-	-	-
15	Amortization of investment tax credit	-	-	-	-	-	-	-	-
16	Total electric operating expenses (Sum of L6 through L15)	(18)	(1,136)	(976)	(1,388)	(59,288)	(3,041)	-	(75)
17	Net operating income for return (L4 minus L16)	18	1,136	976	1,388	59,288	3,041	-	75
18	Calculated revenue requirement impact	^{1/} (\$24)	(\$1,484)	(\$1,275)	(\$1,813)	(\$77,453)	(\$3,973)	\$0	(\$98)

16/ Maness Stipulation Exhibit 1, Schedule 3-1(n).

17/ Maness Stipulation Exhibit 1, Schedule 3-1(o).

18/ Maness Stipulation Exhibit 1, Schedule 3-1(p).

19/ Maness Stipulation Exhibit 1, Schedule 3-1(q).

20/ Based on recommendation of Public Staff witness Maness.

21/ Moved to fuel case docket per NCUC order (Docket E-2, Sub 1204).

22/ Maness Stipulation Exhibit 1, Schedule 3-1(v).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1
Page 4 of 4

Line No.	Item	Adjustment to Nuclear Decommissioning Expense (w)	Adjustment to Remove Rate Case Expense (x)	Adjustment to COSS - SWP&A Reallocation (y)	Adjust Asheville CC Plant in Service Costs (z)	Adjust Asheville CC Deferral (aa)	Adjust for Asheville Production Displacement (ab)	Interest Synchronization Adjustment (ac)	Total NOI Adjustments (ad) ^{30/}
1	Electric operating revenues:								
2	Sales of electricity	\$0	\$0	(\$166)	\$0	\$0	\$0	\$0	\$3,145
3	Other revenues	-	-	-	-	-	-	-	-
4	Electric operating revenues (Sum of L2 through L3)	-	-	(166)	-	-	-	-	3,145
5	Electric operating expenses:								
6	Operations and maintenance:								
7	Fuel used in electric generation	-	-	-	-	-	-	-	442
8	Purchased power	-	-	(710) ^{25/}	-	-	-	-	(710)
9	Other operations and maintenance expenses	(16,537) ^{23/}	- ^{24/}	(2,639) ^{25/}	(0) ^{26/}	-	(4,072) ^{28/}	-	(22,822)
10	Depreciation and amortization	-	-	(6,326) ^{25/}	-	(1,381) ^{27/}	-	-	(179,457)
11	General taxes	-	-	(702) ^{25/}	-	-	-	-	(640)
12	Interest on customer deposits	-	-	-	-	-	-	-	-
13	Net income taxes	3,831 ^{2/}	- ^{2/}	2,260 ^{25/}	- ^{2/}	320 ^{2/}	943 ^{2/}	(1,854) ^{29/}	45,843
14	Amortization of protected EDIT, net of tax	-	-	-	-	-	-	-	(23,470)
15	Amortization of investment tax credit	-	-	34 ^{25/}	-	-	-	-	34
16	Total electric operating expenses (Sum of L6 through L15)	(12,706)	-	(8,083)	(0)	(1,061)	(3,129)	(1,854)	(180,780)
17	Net operating income for return (L4 minus L16)	12,706	-	7,917	0	1,061	3,129	1,854	183,925
18	Calculated revenue requirement impact ^{1/}	(\$16,599)	\$0	(\$10,343)	\$0	(\$1,386)	(\$4,087)	(\$2,422)	(\$240,277)

23/ Per Recommendation of Public Staff witness Hinton.

24/ Maness Stipulation Exhibit 1, Schedule 3-1(r).

25/ Maness Stipulation Exhibit 1, Schedule 3-1(s).

26/ Maness Stipulation Exhibit 1, Schedule 3-1(t).

27/ Maness Stipulation Exhibit 1, Schedule 3-1(t)(1).

28/ Maness Stipulation Exhibit 1, Schedule 3-1(u).

29/ Maness Stipulation Exhibit 1, Schedule 3-1(w).

30/ Sum of Columns (a) through Column (ad).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO DEPRECIATION EXPENSE AND PROPERTY TAXES FOR PLANT
UPDATE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(a)

Line No.	Item	Amount
1	<u>Depreciation expense</u>	
2	Depreciation expense on increase in plant per Public Staff	\$61,942 ^{1/}
3	Company Adjustment	<u>62,359</u> ^{2/}
4	Public Staff adjustment to depreciation expense for update of plant (L2 - L3)	<u><u>(\$417)</u></u>
5	<u>General taxes</u>	
6	Update to plant per Public Staff	\$1,450,467 ^{3/}
7	<u>Less:</u> Adjustment to intangible plant	<u>57,105</u> ^{4/}
8	Adjustment to plant excluding intangible plant (L6 - L7)	\$1,393,362
9	Average property tax rate	<u>0.36259%</u> ^{5/}
10	Impact to property taxes of Public Staff update (L8 x L9)	\$5,052
11	Company Adjustment	<u>4,990</u> ^{6/}
12	Public Staff adjustment to property taxes (L10 - L11)	<u><u>\$62</u></u>

1/ Maness Stipulation Exhibit 1, Schedule 3-1(a)(1), Line 20, Column (e).

2/ E-1, Item No. 10, NC-1001(F), Line 89 , as adjusted to SWPA.

3/ Maness Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 11, Column (g).

4/ Maness Stipulation Exhibit 1, Schedule 2-1(a)(1), Line 10, Column (g).

5/ E-1, Item No. 10, NC-1001(F), Line 93.

6/ E-1, Item No. 10, NC-1001(F), Line 101, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF DEPRECIATION
EXPENSE ON PLANT UPDATE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(a)(1)

Line No.	Item	Increase in Plant in Service ^{1/}	Depreciation Rate ^{2/}	Increase in Depreciation ^{4/}	NC Retail Percentage ^{5/}	NC Retail Amount ^{6/}
		(a)	(b)	(c)	(d)	(e)
1	Steam plant	(\$192,169)	4.13%	(\$7,937)	60.8591%	(\$4,830)
2	Direct Assignment - NC steam production	134	4.13%	6	100.0000%	6
3	Direct Assignment - SC steam production	0	4.13%	-	0.0000%	-
4	Direct Assignment - WSH steam production	(4,614)	4.13%	(191)	0.0000%	-
5	Hydro plant	13,247	3.65%	484	60.8591%	295
6	Other production plant	856,677	5.03%	43,091	60.8591%	26,225
7	Direct Assignment - NC other production	0	5.03%	-	100.0000%	-
8	Direct Assignment - SC other production	0	5.03%	-	0.0000%	-
9	Direct Assignment - WSH other production	(300)	5.03%	(15)	0.0000%	-
10	Nuclear plant	330,067	3.31%	10,925	60.8591%	6,649
11	Direct Assignment - NC nuclear production	2,934	3.31%	97	100.0000%	97
12	Direct Assignment - SC nuclear production	352	3.31%	12	0.0000%	-
13	Direct Assignment - WSH nuclear production	368	3.31%	12	0.0000%	-
14	Total production plant	<u>\$1,006,695</u>		<u>\$46,484</u>		
15	Transmission plant	264,107	2.23%	5,890	58.8448%	3,466
16	Distribution plant	692,508	2.26%	15,651	87.1486%	13,640
17	Distribution plant - AMR meter retirements	(61,039)				
18	General plant	77,411	4.39%	3,398	73.7686%	2,507
19	Intangible plant	105,665	various ^{3/}	20,607	67.3953%	13,888
20	Total	<u>\$2,085,347</u>		<u>\$92,030</u>		<u>\$61,942</u>

1/ Maness Stipulation Exhibit 1, Schedule 2-1(a)(1), Column (e).

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

3/ Based on information provided by the Company.

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

5/ E-1, Item No. 45B.

6/ Column (c) multiplied by Column (d).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO UPDATE REVENUES TO FEBRUARY 29, 2020
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)

Line No.	Item	2/	Adjustment	3/
	<u>Revenues</u>			
1	Update revenues for customer growth		\$64,452	1/
2	Update revenues for usage		(61,464)	2/
3	Update revenues for weather		<u>323</u>	3/
4	Adjust revenues for update (L1 + L2 + L3)		<u>\$3,311</u>	
	<u>Fuel and Fuel Related Expense</u>			
5	Adjust fuel and fuel-related expense for customer growth update		\$17,904	1/
6	Adjust fuel and fuel-related expense for usage update		(17,618)	2/
7	Adjust fuel and fuel-related expense for weather update		<u>156</u>	3/
8	Adjust fuel expense for change in kWh (L5 + L6 + L7)		<u>\$442</u>	
	<u>Other O&M Expense</u>			
9	Public Staff update adjustment to mWh sales for customer growth (kWh/1000)		655,895	1/
10	Public Staff update adjustment to mWh sales for customer usage (kWh/1000)		(731,113)	2/
11	Public Staff update adjustment to mWh sales for weather (kWh/1000)		<u>(858,188)</u>	3/
12	Public Staff adjustment to mWh sales (kWh/1000) (L9 + L10 + L11)		(933,407)	
13	Energy-related non-fuel variable O&M expense (in dollars per mWh)		<u>2,94222</u>	4/
14	Adjustment to energy-related non-fuel variable O&M expense (L12 x L13 / 1000)		<u>(\$2,746)</u>	
15	Public Staff change in bills		<u>473,731</u>	5/
16	Annual customer-related variable O&M expense per bill (in dollars)		<u>2,15834</u>	6/
17	Adjustment to customer-related variable O&M expense (L14 x L15 / 1,000)		<u>\$1,022</u>	
18	Adjust variable non-fuel O&M expense (L14 + L17)		(\$1,724)	
19	Adjust uncollectibles for increase in revenues		8	7/
20	Adjust regulatory fee for increase in revenues, net of uncollectibles		<u>4</u>	8/
21	Total adjustment to other O&M expenses (L18 + L19 + L20)		<u>(\$1,712)</u>	

1/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(1), Line 21.

2/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(2), Line 20.

3/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(4), Line 7.

4/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(3), Line 24.

5/ Based on the recommendation of Public Staff witness Saillor.

6/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(5), Line 19.

7/ Line 4 times uncollectibles rate of 0.2394%.

8/ (Line 4 minus Line 19) multiplied by regulatory fee rate of 0.13%.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF ADJUSTMENT TO REVENUES AND FUEL RELATED
EXPENSES TO UPDATE CUSTOMER GROWTH TO FEBRUARY 29, 2020
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)(1)

Line No.	Item	Revenues			Fuel Costs in Cents per KWH ^{4/}	Public Staff Adjustment ^{5/}
		Public Staff Growth in NC KWH Adjustment ^{1/}	Cents per KWH ^{2/}	Public Staff Adjustment ^{3/}		
		(a)	(b)	(c)	(d)	(e)
1	Residential (excluding TOU)	446,610,250	8.85	\$39,529	2.3260	\$10,388
2	Residential TOU	8,703,408	8.70	757	2.3260	202
3	BCF Revenues			5,658		
4	Total NC Residential Service (sum of L 1 thru L3)	<u>455,313,658</u>		<u>\$45,944</u>		<u>\$10,590</u>
5	SGS (excluding Constant Load Rate)	28,621,309	10.81	\$3,095	2.4990	\$715
6	SGS Constant Load Rate	1,074,850	11.20	120	2.4990	27
7	Total NC Small General Service (L5 + L6)	<u>29,696,159</u>		<u>\$3,215</u>		<u>\$742</u>
8	Medium General Service (excluding Time of Use)	61,472,997	8.73	\$5,368	2.4560	\$1,510
9	SGS Time of Use	81,504,976	6.72	5,480	2.4560	2,002
10	Seasonal and Intermittent Service	3,141,764	10.95	344	2.4560	77
11	Total NC Medium General Service (L7+ L8 + L9)	<u>146,119,738</u>		<u>\$11,192</u>		<u>\$3,589</u>
12	LGS (excluding TOU and RTP)	6,988,823	6.92	\$484	2.0540	\$144
13	LGS Time of Use	9,609,632	6.29	605	2.0540	197
14	LGS Real Time Pricing	6,512,313	5.08	331	2.0540	134
15	Total NC Large General Service (L11+ L12 + L13)	<u>23,110,768</u>		<u>\$1,420</u>		<u>\$475</u>
16	Street Lighting Service	1,677,242	30.84	\$517	2.2170	\$37
17	Traffic Signal Lighting Service	(103,515)	9.15	(9)	2.2170	(2)
18	Sports Field Lighting Service	80,635	17.81	14	2.2170	2
19	Total Area and Outdoors Lighting - NC Retail (L15 + L16 + L17)	<u>1,654,362</u>		<u>\$522</u>		<u>\$37</u>
20	Total NC Retail (L3 + L6 + L10 + L14 + L18)	<u>655,894,685</u>		\$62,293		\$15,433
21	Company Adjustments			(2,159) ^{6/}		(2,471) ^{7/}
22	Public Staff adjustment to revenues			<u>\$64,452</u>		<u>\$17,904</u>

1/ Amounts per Public Staff witness Saillor.

2/ E-1, Item No. 10, NC-0402(E), Column (b).

3/ (Column (a) times Column (b)) divided by 100,000.

4/ E-1, Item No. 10, NC-0401(E), Line 4.

5/ (Column (a) times Column (d)) divided by 100,000.

6/ E-1, Item No. 10, NC-0401(E), Line 2, Total NC Retail Column, as adjusted to SWPA.

7/ E-1, Item No. 10, NC-0401(E), Line 6, Total NC Retail Column, as adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF ADJUSTMENT TO REVENUES AND FUEL RELATED
EXPENSES TO UPDATE CUSTOMER USAGE TO FEBRUARY 29, 2020
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)(2)

Line No.	Item	Revenues				
		Public Staff Usage in NC KWH	Cents per KWH	Public Staff Adjustment	Fuel Costs in Cents per KWH	Public Staff Adjustment
		Adjustment ^{1/}	^{2/}	Adjustment ^{3/}	^{4/}	Adjustment ^{5/}
		(a)	(b)	(c)	(d)	(e)
1	Residential (excluding TOU)	(381,918,196)	8.85	(\$33,803)	2.3260	(\$8,883)
2	Residential TOU	(7,442,708)	8.70	(647)	2.3260	(173)
3	Total NC Residential Service (L1 + L2)	(389,360,904)		(\$34,450)		(\$9,056)
4	SGS (excluding Constant Load Rate)	(75,526,849)	8.76	(\$6,614)	2.4990	(\$1,887)
5	SGS Constant Load Rate	(2,836,350)	6.39	(181)	2.4990	(71)
6	Total NC Small General Service (L4 + L5)	(78,363,199)		(\$6,795)		(\$1,958)
7	Medium General Service (excluding Time of Use)	(124,868,375)	8.53	(\$10,651)	2.4560	(\$3,067)
8	SGS Time of Use	(165,558,772)	6.61	(10,952)	2.4560	(4,066)
9	Seasonal and Intermittent Service	(6,381,778)	10.42	(665)	2.4560	(157)
10	Total NC Medium General Service (L7+ L8 + L9)	(296,808,924)		(\$22,268)		(\$7,290)
11	LGS (excluding TOU and RTP)	10,097,727	6.90	\$697	2.0540	\$207
12	LGS Time of Use	13,884,375	6.26	870	2.0540	285
13	LGS Real Time Pricing	9,409,246	5.08	478	2.0540	193
14	Total NC Large General Service (L11+ L12 + L13)	33,391,348		\$2,045		\$685
15	Total NC General (L3 + L6 + L10 + L14)	(731,141,680)		(\$61,468)		(\$17,619)
16	Street Lighting Service	-	15.46	-	2.2170	-
17	Traffic Signal Lighting Service	-	9.15	-	2.2170	-
18	Sports Field Lighting Service	28,533	15.46	4	2.2170	1
19	Total NC Street Lighting (L15 + L16 + L17)	28,533		4		1
20	Total NC Retail (L15 + L19)	(731,113,146)		(\$61,464)		(\$17,618)

1/ Amounts per Public Staff witness Sailior.

2/ E-1, Item No. 10, NC-0402(E), Column (b).

3/ (Column (a) multiplied by Column (b)) divided by 100,000.

4/ E-1, Item No. 10, NC-0401(E), Line 4.

5/ (Column (a) multiplied by Column (d)) divided by 100,000.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF VARIABLE NON-FUEL O&M EXPENSE PER MWH
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)(3)

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	\$346,881 ^{1/}	
2	Non-fuel rider energy-related costs removed from base rates	(135,418) ^{2/}	
3	Less labor included elsewhere	(104,725) ^{15/}	
4	Total non-fuel, non-payroll energy related production O&M expense (L1 - L2 - L3)	<u>\$106,738</u>	
5	Total O&M expense, excluding A&G expense	2,816,946 ^{3/}	
6	Less: fuel expense	1,115,110 ^{4/}	
7	Total non-fuel O&M expense, excluding A&G expense (L5 - L6)	<u>1,701,836</u>	
8	Ratio (L4 / L7)	<u>0.062720</u>	
9	Total per books A&G expense	\$302,537 ^{5/}	
10	Salaries and wages - system amount		\$144,924 ^{6/}
11	Per books employee pensions and benefits - system amount		<u>133,210</u> ^{7/}
12	Subtotal (L10 + L11)		\$278,134
13	NC Retail Allocation Factor		<u>65.8950%</u> ^{8/}
14	NC retail per books - salaries, wages, pensions, and employee benefits (L12 x L13)		\$183,276
15	Aviation expense removed elsewhere		1,656 ^{9/}
16	NC regulatory fee adjusted elsewhere		3,274 ^{10/}
17	Outside services removed elsewhere		32 ^{11/}
18	Sponsorships and donations removed elsewhere		23 ^{12/}
19	Board of Directors expense removed elsewhere		1,270 ^{13/}
20	Total of A&G items adjusted elsewhere (Sum of Lines 14 through L19)	189,531	<u>\$189,531</u>
21	Total A&G expense not adjusted elsewhere (L9 - L19)	<u>\$113,006</u>	
22	Portion of A&G not adjusted elsewhere related to non-fuel non-payroll energy-related production O&M expense (L8 x L21)	<u>7,088</u>	
23	Total non-fuel, non-payroll energy-related production O&M expense plus related non-payroll A&G expense (L4 + L22)	\$113,826	
24	Per books NC retail mWh sales	<u>38,687,268</u> ^{14/}	
25	Cost per mWh (in dollars) (L23 x 1,000 / L24)	<u>\$2.94222</u>	

1/ E-1, Item No. 45B, SWPA, Total Production O&M-Energy.

2/ E-1, Item No. 10, NC-0601, Other O&M expense excluding Line 23, Total NC Retail Column, adjusted to SWPA.

3/ E-1, Item No. 45B, SWPA, NC Retail Column, O&M expenses, Total of Tab 1.

4/ E-1, Item No. 10, NC-0201, Total NC Retail Column, Sum of Lines 2, 4, and 5; adjusted to SWPA.

5/ E-1, Item No. 45B, SWPA, A&G expenses, Tab 2.

6/ E-1, Item No. 10, NC-1306, Line 27.

7/ E-1, Item No. 10, NC-1309, Line 6.

8/ NC Retail Allocation Factor SWPA - LAB (labor).

9/ E-1, Item No. 10, NC-1701, Line 2 plus Maness Stipulation Exhibit 1, Schedule 3-1(m), Line 9 plus Line

10/ E-1, Item 10, NC-3101, Line 7.

11/ Maness Stipulation Exhibit 1, Schedule 3-1(k), Line 6.

12/ Maness Stipulation Exhibit 1, Schedule 3-1(n), Line 6.

13/ Maness Stipulation Exhibit 1, Schedule 3-1(p), Line 15.

14/ E-1, Item No. 10, NC-0201, Line 15 divided by 1,000.

15/ E-1, Item 45B, SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
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
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)(4)

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	(626,372,114)	8.8115	(\$55,193)	2.3260	(\$14,569)
2	Total NC Small General Service	(34,111,482)	8.7198	(2,974)	2.4990	(852)
3	Total NC Medium General Service	(197,377,245)	7.0942	(14,002)	2.4560	(4,848)
4	Total NC Large General Service	<u>(327,342)</u>	5.5487	<u>(18)</u>	2.0540	<u>(7)</u>
5	Total NC Retail (L1 + L2 + L3 + L4)			(\$72,187)		(\$20,276)
6	Company Adjustment			(72,510) ^{6/}		(20,432) ^{7/}
7	Public Staff adjustment to revenues (L5 - L6)	<u>(858,188,182)</u>		<u>\$323</u>		<u>\$156</u>

1/ Amounts per Public Staff witness Saillor.

2/ NCUC Form E-1, Item No. 10, NC-0301(E), Line 10.

3/ (Column (a) multiplied by Column (b)) divided by 100,000.

4/ NCUC Form E-1, Item No. 10, NC-0301(E), Line 14.

5/ (Column (a) multiplied by Column (d)) divided by 100,000.

6/ NCUC Form E-1, Item No. 10, NC-0301(E), Line 7, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF BILL-RELATED EXPENSES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(b)(5)

Line No.	Item	NC Retail Amount (a)	Sub-Calculations (b)
1	2018 per books bill-related O&M expenses:		
2	Account 586 - Meters (operation)	\$6,592 ^{1/}	
3	Account 587 - Customer - installations	4,525 ^{1/}	
4	Accounts 901-905 - Customer accounts	49,620 ^{2/}	
5	Accounts 908-910 - Customer service and information	<u>3,202</u> ^{2/}	
6	Total 2018 per books bill-related expenses (Sum of Lines 2 through 5)	\$63,939	
7	Salaries and wages included in Line 6 - system amount		30,686 ^{3/}
8	NC Retail Allocation Factor		<u>65.8950%</u> ^{4/}
9	NC retail salaries and wages included in Line 7 (L7 x L8)	20,221	<u>\$20,221</u>
10	Uncollectibles expense adjusted elsewhere	<u>8,937</u> ^{5/}	
11	Total non-payroll bill-related O&M expenses not adjusted elsewhere (L6 - L9 - L10)	\$34,781	
12	Total O&M expense, excluding A&G expense	<u>2,816,946</u> ^{6/}	
13	Total non-fuel O&M expense, excluding A&G expense	<u>1,701,836</u> ^{7/}	
14	Ratio (L11 / L13)	<u>0.020437</u>	
15	Total A&G expense not adjusted elsewhere	<u>\$113,006</u> ^{8/}	
16	Portion of A&G not adjusted elsewhere related to non-payroll bill-related O&M expense (L14 x L15)	<u>\$2,310</u>	
17	Total non-payroll bill-related O&M expenses plus related non-payroll A&G expense (L11 + L16)	\$37,091	
18	Per books NC retail 2018 bills	<u>17,184,948</u> ^{3/}	
19	Cost per bill (\$) (L17 x 1,000 / L18)	<u>\$2.15834</u>	

1/ E-1, Item No. 45A, SWPA, Lines 198 and 221.

2/ E-1, Item No. 45A, SWPA, Lines 240 and 246.

3/ Based on information provided by Company.

4/ NC Retail Allocation Factor SWPA - LAB (labor).

5/ E-1, Item No. 45A, SWPA, Account 904 - Uncollectible Accounts, Line 238, NC Retail amount.

6/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(3), Line 4.

7/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(3), Line 6.

8/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(3), Line 20.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO PAYMENT CARD FEES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(c)

Line No.	Item	Amount
1	Annualized 2018 residential payment card transactions	3,060,671 ^{1/}
2	Annualized residential payment card transactions through supplemental update period	<u>3,538,318</u> ^{2/}
3	Increase in annualized residential payment card transactions (L2 - L1)	477,647
4	Transaction fees included in COS for non-payment card transactions	<u>0.0800</u> ^{3/}
5	Remove O&M transaction costs included in COS (-L3 x L4 /1000)	(\$38)
6	Company adjustment	<u>(38)</u> ^{4/}
7	Public Staff adjustment to remove O&M transaction costs (L5 - L6)	<u><u>\$0</u></u>

1/ Per Company response to PSDR 31-1.

2/ E-1, Item No. 10, NC-2503(E), Line 18

3/ Based on information provided by Company.

4/ E-, Item No. 10, NC-2501(F), Line 3.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO FLOWBACK PROTECTED EDIT DUE TO TAX CUTS AND JOBS
ACT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(d)

Line No.	Item	Amount
<u>Income Statement Impact</u>		
1	Annual amortization of protected EDIT - NC retail	(\$30,548) ^{1/}
2	Income tax impact	<u>7,078</u> ^{2/}
3	Annual amortization of protected EDIT - NC retail, net of tax (L1 + L2)	<u><u>(\$23,470)</u></u>
<u>Rate Base Impact</u>		
4	Adjustment to regulatory assets and liabilities (-L3)	\$30,548
5	Composite income tax rate	<u>23.1693%</u> ^{3/}
6	Impact to accumulated deferred income taxes (-L4 x L5)	<u>(7,078)</u>
7	Adjustment to rate base (L4 + L6)	<u><u>\$23,470</u></u>

1/ Smith Supplemental Exhibit 4, Column (a), Line 11.

2/ Line 1 times negative composite tax rate on Line 5.

3/ Maness Stipulation Exhibit 1, Schedule 1-3, Line 8.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT FOR CHANGE IN DEPRECIATION RATES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(e)

Line No.	Item	Total System (a)	NC Retail Percentage (b)	NC Retail Amount (c)
	<u>Change in depreciation and amortization per Public Staff</u>			
1	Production	\$76,506	60.8591% ^{2/}	\$46,561 ^{6/}
2	Transmission	8,514	58.8448% ^{3/}	5,010 ^{6/}
3	Distribution	(12,537)	87.1486% ^{4/}	(10,926) ^{6/}
4	Distribution COR adjustment - directly assigned	-	100.0000%	- ^{6/}
5	General	(4,765)	73.7686% ^{5/}	(3,515) ^{6/}
6	General Plant Amortization	9,544	73.7686% ^{5/}	7,041 ^{6/}
7	Adjust to deprec. and amort. for costs recovered in riders	-	60.8591% ^{2/}	- ^{6/}
8	Public Staff adjustment to depreciation and amortization expense	<u>\$77,263</u>		44,171
9	Company Adjustment			<u>87,779</u> ^{7/}
10	Adjustment to depreciation and amortization expense (L8 - L9)			<u>(\$43,608)</u>
11	Adjustment to accumulated depreciation (-L10)			<u>\$43,608</u>

1/ Based on recommendation of Public Staff witness McCullar.

2/ E-1, Item No. 45B, NC Retail Allocation Factor - DPALL, adjusted to SWPA.

3/ E-1, Item No. 45B, NC Retail Allocation Factor - DTALL, adjusted to SWPA.

4/ E-1, Item No. 45B, NC Retail Allocation Factor - RB PLT O DI, adjusted to SWPA.

5/ E-1, Item No. 45B, NC Retail Allocation Factor - NC Retail Allocation Factor - RB PLT O GN, adjusted to SWPA.

6/ Column (a) multiplied by Column (b).

7/ E-1, Item No. 10, NC-2601(D), Line 12, Total NC Retail Column, as adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO SALARIES AND WAGES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(f)

Line No.	Item	Duke Energy Carolinas (a)	Duke Energy Progress (b)	Service Company (DEBS) (c)	Total (d)
1	Total labor cost per payroll company	\$801,709 ^{1/}	\$435,428 ^{1/}	\$745,091 ^{1/}	
2	Allocation percentages	<u>10.21% ^{1/}</u>	<u>91.79% ^{1/}</u>	<u>17.30% ^{1/}</u>	
3	Annualized salaries per Public Staff (L1 x L2)	81,894	399,697	128,906	
4	Per books salaries, 2018 test year	<u>85,883 ^{2/}</u>	<u>425,470 ^{2/}</u>	<u>133,040 ^{2/}</u>	
5	Public Staff adjustment to salaries and wages for employees	(3,989)	(25,773)	(4,134)	(\$33,897) ^{4/}
6	Company Adjustment	<u>(3,990) ^{3/}</u>	<u>(25,774) ^{3/}</u>	<u>(4,134) ^{3/}</u>	<u>(33,897) ^{4/}</u>
7	Adjustment to salaries and wages (L5 - L6)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>0</u>
8	Public Staff adjustment to total salaries and wages (L7)				\$0
9	Percent charged to electric expense				<u>75.98% ^{5/}</u>
10	Adjustment to net electric O&M salaries and wages (L8 x L9)				<u>\$0</u>
11	Adjustment to net electric O&M salaries and wages (L10)				\$0
12	Fringe benefits contribution rate				<u>20.50% ^{6/}</u>
13	Adjustment to fringe benefits (L11 x L12)				<u>\$0</u>
14	Total adjustment to O&M expense - total system (L10 + L13)				\$0
15	NC Retail Allocation Factor				<u>65.8950% ^{7/}</u>
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 ^{9/}</u>
19	Adjustment to payroll taxes - total system (L17 + L18)				\$0
20	NC Retail Allocation Factor				<u>65.8950% ^{7/}</u>
21	Adjustment to payroll taxes - NC retail (L19 x L20)				<u>\$0</u>

1/ E-1, Item No. 10, NC-1304(E), Lines 2 through 12.

2/ E-1, Item No. 10, NC-1301(E), Lines 3 through 5, Labor per Books Column.

3/ E-1, Item No. 10, NC-1301(E), Lines 3 through 5, Pro Forma HR Salaries Column.

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

5/ E-1, Item No. 10, NC-1301(E), Line 16.

6/ E-1, Item No. 10, NC-1301(E), Line 34.

7/ NC Retail Allocation Factor SWPA - LAB (labor).

8/ Line 10 multiplied by 86.49% subject to OASDI (NCUC E-1, Item No. 10, NC-1301(E), Line 21) multiplied by 6.2% OASDI tax rate.

9/ Line 10 multiplied by 1.45% Medicare tax rate.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO INCENTIVES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(g)

Line No.	Item	Amount
<u>Short Term Incentive Plan (STIP)</u>		
1	Total Company STIP pay accrued expense associated with earnings per share (EPS)	\$6,190 ^{1/}
2	Total Company STIP accrual	<u>341,536</u> ^{1/}
3	Percentage of STIP related to EPS	1.81%
4	STIP at target level associated with O&M expense per Company	<u>69,054</u> ^{2/}
5	Adjustment to remove STIP related to EPS outcomes - total system (L3 x -L4)	(1,250)
6	NC Retail Allocation Factor	<u>65.8950%</u> ^{3/}
7	Adjustment to remove STIP related to EPS outcomes - NC retail (L5 x L6)	(824)
8	Executive STIP already removed in executive compensation adjustment	<u>6</u> ^{4/}
9	Adjustment to STIP (L7 + L8)	<u><u>(\$818)</u></u>
<u>Long Term Incentive Plan (LTIP)</u>		
10	Performance shares for EPS at target	\$7,249 ^{5/}
11	Percentage associated with EPS and TSR	<u>75.00%</u>
12	Adjustment to remove LTIP associated with EPS and TSR - total system (-L10 x L11)	(5,437)
13	NC Retail Allocation Factor	<u>65.8950%</u> ^{3/}
14	Adjustment to remove LTIP associated with EPS and TSR - NC retail (L12 x L13)	(3,583)
15	Executive LTIP already removed in executive compensation adjustment	<u>503</u> ^{4/}
16	Adjustment to LTIP (L14 + L15)	<u><u>(\$3,080)</u></u>
17	Total adjustment to incentive pay (L9 + L16)	<u><u>(\$3,898)</u></u>

1/ Company Response to Public Staff Data Request No. 32, Item 10, updated per Stipulation.

2/ E-1, Item No. 10, NC-1310(E), Line 6.

3/ NC Retail Allocation Factor SWPA - LAB (labor).

4/ Based on executive compensation adjustment.

5/ E-1, Item 10, NC-1310-3(E), Page 1, Line 13, Column (b).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO SEVERANCE COSTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(h)

Line No.	Item	Amount
<u>Income Statement Impact</u>		
1	Remove actual severance costs in 2018	(\$52,890) ^{1/}
2	Annual amortization related to severance costs based on 5 year amortization	<u>16,431</u> ^{2/}
3	Total Carolinas adjustment to remove actual severance costs (L1 + L2)	(36,459)
4	NC Retail Allocation Factor	<u>65.8950%</u> ^{3/}
5	NC Retail adjustment to remove severance costs (L3 x L4)	(24,025)
6	Company adjustment	<u>(24,025)</u> ^{4/}
7	Public Staff adjustment to O&M related to severance costs (L5 - L6)	<u>(\$0)</u>
<u>Rate Base Impact</u>		
8	Impact to working capital investment per Company	\$21,655 ^{5/}
9	Impact to working capital investment per Public Staff	<u>0</u> ^{6/}
10	Adjustment to working capital investment (L9 - L8)	<u>(\$21,655)</u>
11	Impact to ADIT per Company	(\$5,017) ^{7/}
12	Impact to ADIT per Public Staff	<u>0</u> ^{6/}
13	Adjustment to ADIT (L12 - L11)	<u>\$5,017</u>

1/ E-1, Item No. 10, NC-2001(E), Line 2, Total System Column.

2/ E-1, Item No. 10, NC-2001(E), Line 3, Total System Column.

3/ NC Retail Allocation Factor SWPA - LAB (labor).

4/ E-1, Item No. 10, NC-2001(E), Line 4, NC Retail Column.

5/ E-1, Item No. 10, NC-2001(E), Line 14, NC Retail Column.

6/ Public Staff recommendation.

7/ E-1, Item No. 10, NC-2001(E), Line 17, NC Retail Column.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO EXECUTIVE COMPENSATION
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(i)

Line No.	Item	Amount
1	Executive compensation for top 5 executives per Company	\$7,246 ^{1/}
2	Inclusion of executive benefits in adjustment	486 ^{2/}
3	Executive compensation subject to exclusion adjustment per Public Staff (L1 + L2)	\$7,732
4	NC Retail Allocation Factor	65.8950% ^{3/}
5	NC retail portion of executive compensation subject exclusion adjustment (L3 x L4)	\$5,095
6	Exclusion percentage	50.00% ^{4/}
7	Public Staff adjustment to exclude executive compensation (L6 x L7)	(\$2,548)
8	Company adjustment	(2,387) ^{5/}
9	Adjustment to remove additional executive compensation (L7 - L8)	(\$160)

1/ E-1, Item No. 10, NC-0701, Line 3.

2/ Based on Company response to PSDR-41, Item 2.

3/ NC Retail Allocation Factor SWPA - LAB (labor).

4/ E-1, Item No. 10, NC-0701, Line 10.

5/ E-1, Item No. 10, NC-0701, Line 11, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO AVIATION EXPENSES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(j)

Line No.	Item	Amount
<u>Wages, benefits, materials, etc.</u>		
1	Corporate aviation O&M and depreciation expense	\$4,386 ^{1/}
2	Percentage to be excluded per Public Staff	<u>50.00%</u> ^{2/}
3	Corporate aviation expenses to be excluded per Public Staff (L1 x L2)	\$2,193
4	Specific charter flights to be excluded	<u>-</u>
5	Total corporate aviation expenses to be excluded per Public Staff (L3 + L4)	\$2,193
6	Company adjustment	<u>2,193</u> ^{3/}
7	Additional aviation O&M expenses to be excluded (L5 - L6)	(\$0)
8	NC Retail Allocation Factor	<u>65.8950%</u> ^{4/}
9	Public Staff adjustment to aviation O&M expenses (-L7 x L8)	<u>\$0</u>
<u>General taxes</u>		
10	Corporate aviation general taxes	\$53 ^{5/}
11	Percentage to be excluded per Public Staff	<u>50.00%</u> ^{2/}
12	Corporate aviation general taxes to be excluded per Public Staff (L10 x L11)	\$27
13	Company adjustment	<u>27</u> ^{6/}
14	Additional aviation general taxes to be excluded (L12 - L13)	\$0
15	NC Retail Allocation Factor	<u>65.8950%</u> ^{4/}
16	Public Staff adjustment to aviation general taxes (-L14 x L15)	<u>\$0</u>
<u>Commercial flights</u>		
17	International flight expense	\$1,325 ^{7/}
18	Allocation percentage from DEBS to DEP	<u>23.35%</u> ^{8/}
19	International flight expense allocated to DEP (L17 x L18)	\$309
20	NC Retail Allocation Factor	<u>65.8950%</u> ^{4/}
21	Public Staff adjustment to O&M for commercial flights (-L19 x L20)	<u>(\$204)</u>

1/ E-1, Item No. 10, NC-1702, Line 19.

2/ Per Stipulation.

3/ E-1, Item No. 10, NC-1702, Line 22.

4/ NC Retail Allocation Factor: SWPA - LAB (labor).

5/ E-1, Item No. 10, NC-1702, Line 1, Total Duke Energy Progress Column.

6/ E-1, Item No. 10, NC-1702, Line 3, Total Duke Energy Progress Column.

7/ Calculated by Public Staff based on Company response to Public Staff Data Requests.

8/ Based on Company response to PSDR-28, Item 7(b).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO OUTSIDE SERVICES
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(k)

Line No.	Item	Amount
1	Remove non-legal invoices	\$179 1/
2	Remove items identified that Company has agreed to remove	19 1/
3	Remove additional items identified by Public Staff that should be removed	<u>0 1/</u>
4	Total Public Staff adjustment to outside services (L1 + L2 + L3)	\$197
5	Amount removed by Company in COS exclusion adjustment	<u>(\$145)</u>
6	Total outside services to be removed (L4 + L5)	\$52
7	NC Retail Allocation Factor	<u>60.8591% 2/</u>
8	Public Staff adjustment to outside services - NC retail (-L6 x L7)	<u><u>(\$32)</u></u>

1/ Based on information provided by Company in response to PSDR-75, Items 1 and 2, and advice of legal counsel.

2/ NC Retail Allocation Factor: SWPA - DP (production demand).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZE STORM COSTS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(I)

Line No.	Item	Amount
<u>Normalized storm expense</u>		
1	NC retail amount of storm costs considered normal for 2018	\$25,078 ^{1/}
2	NC Retail Allocation Factor	83.9171% ^{2/}
3	2018 storm costs to be included in calculation of normalized level (L1 / L2)	29,884
4	2010 through 2019 costs adjusted for inflation, excluding 2018	114,099 ^{3/}
5	Total storm costs for ten years adjusted for inflation (L3 + L4)	143,983
6	Number of years	10
7	Normalized level of storm costs - total system (L5 x L6)	14,398
8	NC Retail Allocation Factor	83.9171% ^{2/}
9	Normalized level of storm costs per Public Staff (L7 x L8)	12,082
10	2018 Storm costs	2,782 ^{4/}
11	Total Public Staff adjustment to storm expense (L11 + L12)	9,300

1/ E-1, Item No. 10, NC-2905(E), Line 2, NC Retail column

2/ NC Retail Allocation Factor SWPA - RB_PLT_O_DI_OH_LN (distribution plant, overhead lines).

3/ Per Company response to PSDR 27-1, and storm costs included in Sub 1142.

4/ Per Company response to PSDR 27-1.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO STORM DEFERRAL
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(m)

Line No.	Item	Amount
<u>Income Statement Impact</u>		
1	Impact to depreciation and amortization for storm deferral per Company	\$43,157 ^{1/}
2	Impact to depreciation and amortization to remove storm assets from rate base	(1,636) ^{2/}
3	Impact to depreciation and amortization for storm deferral per Public Staff	- ^{3/}
4	Adjustment to depreciation and amortization for storm deferral (L1 + L2 + L3)	<u>(44,793)</u>
<u>Rate Base Impact</u>		
5	Projected storm deferral balance per Company	\$604,202 ^{4/}
6	Projected storm deferral balance per Public Staff	- ^{3/}
7	Adjustment to working capital for storm deferral (L6 - L5)	<u>(\$604,202)</u>
8	Impact to ADIT for storm deferral per Company	(\$139,989) ^{5/}
9	Impact to ADIT for storm deferral per Public Staff	- ^{3/}
10	Adjustment to ADIT for storm deferral (L9 - L8)	<u>\$139,989</u>
11	Adjustment to remove storm assets from rate base	(\$68,248) ^{2/}
12	Adjustment to remove accumulated depreciation for storm assets from rate base	<u>1,812</u> ^{2/}
13	Adjustment to rate base to remove storm assets (L11 + L12)	<u>(\$66,436)</u>

1/ E-1, Item No. 10, NC-2901(E), Line 4, as adjusted to SWPA.

2/ Provided by Company.

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

4/ E-1, Item No. 10, NC-2901(E), Line 16, as adjusted to SWPA.

5/ E-1, Item No. 10, NC-2901(E), Line 19, as adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO CHARITABLE CONTRIBUTIONS, CORPORATE SPONSORSHIPS,
AND CORPORATE DONATIONS
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(n)

Line No.	Item	Amount
1	Remove charitable contributions not sought for recovery	\$13 ^{1/}
2	Remove corporate sponsorships not sought for recovery and miscellaneous dues	37 ^{2/}
3	Removal of corporate donations and membership dues related to unregulated products	9 ^{3/}
4	Total sponsorships and donations to be removed per Public Staff (L1 + L2 + L3)	<u>\$59</u>
5	Amount removed by Company in COS exclusion adjustment	<u>(\$21)</u>
6	Total sponsorships and donations to be removed	\$38
7	NC Retail Allocation Factor	<u>60.8591% ^{4/}</u>
8	Public Staff adjustment to remove charitable contributions and corporate sponsorships & donations - NC retail (-L6 x L7)	<u><u>(\$23)</u></u>

1/ Company Response to PSDR 34-4.

2/ Company Response to PSDR 34-3.

3/ Company Response to PSDR 34-6.

4/ NC Retail Allocation Factor SWPA - DP (production demand).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO LOBBYING EXPENSE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(o)

Line No.	Item	Amount
1	Remove Stakeholder Engagement O&M charges related to lobbying	\$1,343 ^{1/}
2	Remove State Government Affairs O&M charges related to lobbying	94 ^{1/}
3	Remove Federal Affairs O&M charges related to lobbying	992 ^{2/}
4	Remove Edison Electric Institute (EEI) O&M charges related to lobbying	<u>0</u> ^{1/}
5	Total lobbying costs to be removed from O&M expense (L1 + L2 + L3 + L4)	\$2,429
6	NC Retail Allocation Factor	<u>60.8591%</u> ^{3/}
7	Public Staff adjustment to remove lobbying costs (-L5 x L6)	<u><u>(\$1,478)</u></u>

1/ Based upon Company response to PSDR-35, Item 2(g).

2/ Based on Company response to PSDR-35, Item 5, and NCUC Form E-1, Item 16(b).

3/ NC Retail Allocation Factor: SWPA - DP (production demand).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO BOARD OF DIRECTORS EXPENSE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(p)

Line No.	Item	Amount
1	Total Board of Directors (BOD) cash compensation	\$421 ^{1/}
2	Percentage of exclusion per Public Staff	<u>50% ^{2/}</u>
3	Public Staff adjustment to BOD compensation (-L1 x L2)	<u>(\$210)</u>
4	Board of Directors (BOD) expenses	\$155
5	Percentage of exclusion per Public Staff	<u>50%</u>
6	Public Staff adjustment to BOD expenses (-L4 x L5)	<u>(\$78)</u>
7	BOD insurance charged to DEP	3,514 ^{3/}
8	Percentage of exclusion per Public Staff	<u>50% ^{2/}</u>
9	Public Staff adjustment to BOD insurance (-L7 x L8)	<u>(\$1,757)</u>
10	BOD and executive members expenses allocated to DEP	81 ^{4/}
11	Percentage of exclusion per Public Staff	<u>50% ^{2/}</u>
12	Public Staff adjustment to BOD and executive members expenses (-L10 x L11)	<u>(\$41)</u>
13	Total Public Staff adjustment to BOD compensation and expenses (L3 + L6 + L9 + L12)	<u>(\$2,086)</u>
14	NC Retail Allocation Factor	<u>60.8591% ^{5/}</u>
15	Public Staff adjustment to BOD expenses - NC retail (L13 x L14)	<u>(\$1,270)</u>

1/ Amount from 2018 Proxy Statement, allocated to DEP.

2/ Recommended by Public Staff.

3/ Company Response to PSDR-40, Items 2 and 4.

4/ Company Response to PSDR-40, Item 1(a).

5/ NC Retail Allocation Factor SWPA - DP (production demand).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO END OF LIFE RESERVE FOR NUCLEAR MATERIALS AND
SUPPLIES AMORTIZATION EXPENSE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(q)

Line No.	Item	Brunswick 1 (a)	Brunswick 2 (b)	Harris (c)	Robinson (d)	Total (e)
1	Inventory as of December 31, 2018	\$97,698 ^{1/}	\$97,698 ^{1/}	\$126,342 ^{1/}	\$75,117 ^{1/}	\$396,855 ^{7/}
2	Adjustment to remove inventory	<u>(2,335) ^{2/}</u>	<u>(2,320) ^{2/}</u>	<u>(2,400) ^{2/}</u>	<u>(1,845) ^{2/}</u>	<u>(8,900) ^{8/}</u>
3	Inventory balance per Public Staff (L1 + L2)	95,363	95,378	123,942	73,272	<u>\$387,955</u>
4	Percentage of M&S with salvage value or transferrable	<u>10% ^{8/}</u>	<u>10% ^{8/}</u>	<u>10% ^{8/}</u>	<u>10% ^{8/}</u>	
5	Nuclear M&S inventory base for amortization per Public Staff (L3 x (1-L4))	85,827	85,840	111,548	65,945	
6	NC Retail Allocation Factor	<u>60.859% ^{3/}</u>	<u>60.859% ^{3/}</u>	<u>60.859% ^{3/}</u>	<u>60.859% ^{3/}</u>	
7	NC retail nuclear M&S base for amortization (L5 x L6)	52,234	52,241	67,887	40,134	
8	<u>Less:</u> Projected inventory reserve at 8/31/2020	<u>11,309 ^{4/}</u>	<u>12,278 ^{4/}</u>	<u>9,071 ^{4/}</u>	<u>13,703 ^{4/}</u>	
9	NC nuclear reserve required at rates effective date (L7 - L8)	40,925	39,963	58,816	26,431	
10	Years of remaining plant life	<u>16.00 ^{5/}</u>	<u>14.00 ^{5/}</u>	<u>26.00 ^{5/}</u>	<u>10.00 ^{5/}</u>	
11	NC retail annual expense for reserve per Public Staff (L9 / L10)	2,558	2,855	2,262	2,643	\$10,318 ^{8/}
12	Amount required per Company	<u>3,006 ^{6/}</u>	<u>3,295 ^{6/}</u>	<u>2,594 ^{6/}</u>	<u>3,230 ^{6/}</u>	<u>12,125 ^{8/}</u>
13	Public Staff adjustment to nuclear M&S reserve amortization expense (L11 - L12)	<u>(\$448)</u>	<u>(\$440)</u>	<u>(\$332)</u>	<u>(\$587)</u>	<u>(\$1,807)</u>

1/ E-1, Item 10, NC-2803, Line 2, adjusted to SWPA.

2/ Total adjustment from Column (e) allocated based on inventory amounts from Line 1.

3/ NC Retail Allocation Factor SWPA - DP (production demand).

4/ E-1, Item 10, NC-2803, Line 16, adjusted to SWPA.

5/ E-1, Item 10, NC-2803, Line 22, adjusted to SWPA.

6/ E-1, Item 10, NC-2803, Line 24, adjusted to SWPA.

7/ Sum of Columns (a) through (d).

8/ Based on recommendation of Public Staff witness Metz.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO RATE CASE EXPENSE AND AMORTIZATION
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(r)

Line No.	Item	Amount
<u>Income Statement Impact</u>		
1	Actual rate case expense incurred through February 29, 2020	\$3,505 ^{1/}
2	Amortization period in years	5 ^{2/}
3	Annual normalized level of rate case expense per Public Staff (L1 / L2)	\$701
4	Annual normalized level of rate case expense per Company	701 ^{3/}
5	Adjustment to annual normalized rate case expense (L3 - L4)	<u>\$0</u>
<u>Rate Base Impact</u>		
6	Projected working capital after first year of amortization per Company	\$2,670 ^{4/}
7	Public Staff recommended regulatory asset amount for rate case expense	0
8	Adjustment to rate base for rate case expense (L6 - L7)	<u>(\$2,670)</u>
9	Impact to ADIT for storm deferral per Company	(\$619)
10	Impact to ADIT for storm deferral per Public Staff	0
11	Adjustment to ADIT for storm deferral (L10 - L9)	<u>\$619</u>

1/ NCUC Form E-1, Item No. 10, NC-1602(E), Line 28.

2/ NCUC Form E-1, Item No. 10, NC-1601(E), Line 5.

3/ NCUC Form E-1, Item No. 10, NC-1601(E), Line 6.

4/ NCUC Form E-1, Item No. 10, NC-1601(E), Line 18.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
NET OPERATING INCOME, AS REALLOCATED BY PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(s)

Line No.	Item	North Carolina Retail Operations		
		SWPA Company NOI Reallocated By Public Staff (a)	Summer CP Company NOI - Company Allocations 2/ (b)	Cost of Service Study Adjustments 3/ (c)
1	Electric operating revenue	\$3,360,843	\$3,361,009	(\$166)
	Electric operating expenses:			
	Operation and maintenance:			
2	Fuel used in electric generation	\$851,653	\$851,653	\$0
3	Purchased power	156,088	156,798	(710)
4	Other operation and maintenance expense	860,178	862,817	(2,639)
5	Depreciation and amortization	954,142	960,468	(6,326)
6	General taxes	102,896	103,598	(702)
7	Interest on customer deposits	7,971	7,971	-
8	Net income taxes	47,766	45,506	2,260
9	Amortization of investment tax credit	(3,580)	(3,614)	34
10	Total electric operating expenses (Sum of L2 through L9)	<u>\$2,977,114</u>	<u>\$2,985,197</u>	<u>(\$8,083)</u>
11	Operating income (L1 - L10)	<u>\$383,730</u>	<u>\$375,812</u>	<u>\$7,917</u>

1/ Maness Stipulation Exhibit 3, Schedule 2, Column (c).

2/ Maness Stipulation Exhibit 1, Schedule 3, Column (a).

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
**ADJUSTMENT TO ASHEVILLE COMBINED CYCLE PRO FORMA O&M EXPENSE
AND REGULATORY ASSET**
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(t)

Line No.	Item	NC Retail Amount
<u>Income Statement Impact</u>		
1	Average Annual Asheville Combined Cycle O&M - NC Retail per Company	\$2,604 ^{1/}
2	Average Annual Asheville Combined Cycle O&M - NC Retail Per Public Staff	<u>\$2,604 ^{2/}</u>
3	Adjustment to Asheville CC O&M expense (L2 - L1)	<u>(\$0)</u>
<u>Rate Base Impact</u>		
4	Asheville CC Inventory per Company	\$3,488 ^{3/}
5	Asheville CC inventory per Public Staff	<u>3,461 ^{2/}</u>
6	Adjustment to Asheville Inventory (L5 - L4)	<u>(\$27)</u>
7	Regulatory Asset for Asheville CCs as of Sep 1, 2020 per Company	\$20,722 ^{4/}
8	Regulatory Asset for Asheville CCs as of Sep 1, 2020 per Public Staff	<u>0 ^{5/}</u>
9	Adjustment to Asheville CC Regulatory Asset (L7 - L8)	<u>(\$20,722)</u>
10	Accumulated deferred income taxes related to the regulatory asset per Company	(\$4,801) ^{6/}
11	Accumulated deferred income taxes related to the regulatory asset per Public Staff	<u>0 ^{5/}</u>
12	Adjustment to accumulated deferred income taxes	<u>\$4,801</u>
13	Adjustment to rate base for regulatory asset for Asheville CC (L6 + L9 + L12)	<u>(\$15,948)</u>

1/ E-1, Item No. 10, NC-3401(F), Line 2, adjusted to SWPA.

2/ Per Public Staff witness Dustin Metz, adjusted to SWPA for the Asheville CC.

3/ E-1, Item No. 10, NC-3401(F), Line 16, adjusted to SWPA.

4/ E-1, Item No. 10, NC-3401(F), Line 21, adjusted to SWPA.

5/ Public Staff removed the regulatory asset since the annuity method was used for determining the amortization.

6/ E-1, Item No. 10, NC-3401(F), Line 24, adjusted to SWPA.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO ASHEVILLE COMBINED CYCLE DEFERRAL
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1 (t)(1)

Line No.	Item	Amount
Annuity Factor		
1	Amortization period recommended by Public Staff in years	4 ^{1/}
2	Payment per period	1
3	After tax rate of return (L18)	6.0780%
4	Present value of 1 dollar over number of years with 1 payment per year	3.4589
5	1 plus (interest rate divided by two)	<u>1.0304</u>
6	Annuity factor (L4 x L5)	<u><u>3.5641</u></u>
7	Deferred costs per Public Staff	\$32,007 ^{2/}
8	Annuity factor per Public Staff (L6)	<u>3.5641</u>
9	Annual levelized amortization expense per Public Staff (L7 / L8)	\$8,980
10	Annual amortization expense per Company	<u>10,361 ^{3/}</u>
11	Adjustment to Asheville CC deferral amortization expense (L9 - L10)	<u><u>(\$1,381)</u></u>

	Capital Structure (a)	Cost Rates (b)	Overall Rate of Return ^{8/} (c)	Net of Tax Rate (d)
After Tax Rate of Return				
12	50.00% ^{4/}	4.107% ^{6/}	2.054%	1.578% ^{9/}
13	<u>50.00% ^{5/}</u>	<u>9.000% ^{7/}</u>	<u>4.500%</u>	<u>4.500% ^{10/}</u>
14	<u><u>100.00%</u></u>		<u><u>6.554%</u></u>	<u><u>6.078%</u></u>

1/ Rider period per Stipulation.

2/ Maness Stipulation Exhibit 1, Schedule 3-1(t)(2), Column (j), Line 22 plus Maness Stipulation Exhibit 1, Schedule 3-1(t)(3), Column (j), Line 22.

3/ E-1, Item No. 10, NC-3401(F), Line 7 adjusted to SWPA.

4/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

5/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (a).

6/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (g).

7/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (g).

8/ Column (a) multiplied by Column (b).

9/ Column (c) multiplied by (1 minus combined income tax rate of 23.1693%).

10/ Amount from Column (c).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF DEFERRED COSTS FOR ASHEVILLE
COMBINED CYCLE - PRODUCTION
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(t)(2)

Line No.	Item	December 2019	January 2020	February 2020	March 2020	April 2020	May 2020	June 2020	July 2020	August 2020	Totals
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Production Plant placed into service - NC Retail	1/ 298,976	343,497	343,497	343,497	\$451,250	\$451,250	\$451,250	\$451,250	\$451,250	\$451,250
2	ADIT balance	1/ (27,708)	(31,834)	(31,834)	(31,834)	(41,821)	(41,821)	(41,821)	(41,821)	(41,821)	(41,821)
3	Average inventory balance	1/ 3,460	3,460	3,460	3,460	3,460	3,460	3,460	3,460	3,460	3,460
4	Accumulated Depreciation	1/ 0	(1,024)	(2,200)	(3,376)	(4,552)	(6,098)	(7,644)	(9,190)	(10,736)	(10,736)
5	Remove CWIP in Rate Base	1/ (102,930)	(102,930)	(102,930)	(102,930)	(102,930)	(102,930)	(102,930)	(102,930)	(102,930)	(102,930)
6	Rate base balance for return (L3 + L4 + L5)	171,797	211,168	209,992	208,816	305,407	303,861	302,315	300,769	299,223	299,223
7	Pre-tax cost of capital rate	2/ 8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%
8	Deferred monthly cost of capital (L6 x L7/12)	3/ 160	1,521	1,513	1,504	2,200	2,189	2,178	2,167	2,156	15,588
9	Plant balance (L3)	\$0	298,976	343,497	343,497	343,497	451,250	451,250	451,250	451,250	
10	Annual depreciation rate	4/ 4.11%	4.11%	4.11%	4.11%	4.11%	4.11%	4.11%	4.11%	4.11%	
11	Deferred monthly depreciation expense (L9 x L10/12)	0	1,024	1,176	1,176	1,176	1,546	1,546	1,546	1,546	10,736
12	Deferred O&M expense	5/ 28	218	218	218	218	218	218	218	218	1,770
13	Plant balance (L3)	\$298,976	\$343,497	\$343,497	\$343,497	\$451,250	\$451,250	\$451,250	\$451,250	\$451,250	
14	Annual Property tax rate	6/ 0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	
15	Deferred monthly property tax expense (L13 x L14/12)	12	104	104	104	136	136	136	136	136	1,004
16	Cumulative deferred costs (L8 + L11+L12+L15)	200	3,067	6,078	9,079	12,809	16,898	20,976	25,042	29,098	
17	Composite income tax rate	7/ 23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	
18	Income tax on deferred expenses (-L16 x L17)	(46)	(711)	(1,408)	(2,104)	(2,968)	(3,915)	(4,860)	(5,802)	(6,742)	
19	Deferred costs, net of tax (L16 + L18)	154	2,356	4,670	6,975	9,841	12,983	16,116	19,240	22,356	
20	Pre-tax cost of capital rate (L7)	2/ 8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	
21	Pre-tax return on monthly deferred expenses (L19 x L20)	0	17	34	50	71	94	116	139	161	681
22	Total deferred costs per Public Staff (L8 + L11 + L12 + L15 + L21)	\$200	\$2,884	\$3,044	\$3,052	\$3,801	\$4,182	\$4,194	\$4,205	\$4,217	\$29,779

1/ E-1, Item No. 10, NC-3403(F), Columns (d) through (n).

2/ Pre-tax costs of capital per Order Granting General Rate Increase issued on February 23, 2018, in Docket No. E-2, Sub 1142.

3/ Monthly deferred cost of capital multiplied by 4 days, divided by 31 days.

4/ E-1, Item No. 10, NC-3403(F), Page 1 of 2, Column (p), Line 30.

5/ Per Public Staff witness Metz. First month multiplied by 4 days, divided by 31 days.

6/ E-1, Item No. 10, NC-3403(F), Page 1 of 2, Column (p), Line 31.

7/ Maness Stipulation Exhibit 1, Schedule 1-3, Line 8, Column (a).

8/ Sum of Columns (a) through (d).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF DEFERRED COSTS FOR ASHEVILLE
COMBINED CYCLE - TRANSMISSION
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(t)(3)

Line No.	Item	December 2019	January 2020	February 2020	March 2020	April 2020	May 2020	June 2020	July 2020	August 2020	Total
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Transmission Plant placed into service	1/ \$7,319	\$7,328	\$7,333	7,333	7,333	7,333	7,333	7,333	7,333	7,333
2	ADIT balance	1/ (67)	(67)	(67)	(67)	(67)	(67)	(67)	(67)	(67)	(67)
3	Average inventory balance	1/ 0	0	0	0	0	0	0	0	0	-
4	Accumulated Depreciation	1/ 0	(12)	(24)	(36)	(48)	(60)	(72)	(84)	(96)	(96)
5	Remove CWIP in Rate Base	1/ 0	0	0	0	0	0	0	0	0	-
6	Rate base balance for return (L3 + L4 + L5)	7,252	7,249	7,242	7,230	7,218	7,206	7,194	7,182	7,170	\$7,170
7	Monthly pre-tax cost of capital rate	2/ 8.6444%	8.6444%	8.6444% 4/	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%	8.6444%
8	Deferred monthly cost of capital (L6 x L7/12)	3/ 52	52	52	52	52	52	52	52	52	467
9	Plant balance (L3)	\$0	7,319	7,328	7,333	7,333	7,333	7,333	7,333	7,333	
10	Annual depreciation rate	4/ 1.90%	1.90%	1.90% 5/	1.90%	1.90%	1.90%	1.90%	1.90%	1.90%	
11	Deferred monthly depreciation expense (L9 x L10/12)	0	12	12	12	12	12	12	12	12	96
12	Deferred O&M expense	5/ 0	0	0 6/	0	0	0	0	0	0	0
13	Plant balance (L3)	\$7,319	\$7,328	\$7,333	\$7,333	\$7,333	\$7,333	\$7,333	\$7,333	\$7,333	
14	Annual Property tax rate	6/ 0.3626%	0.3626%	0.3626% 7/	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	0.3626%	
15	Deferred monthly property tax expense (L13 x L14/12)	2	2	2	2	2	2	2	2	2	18
16	Cumulative deferred costs (L8 + L11+L12+L15)	54	120	186 8/	252	318	384	450	516	581	2,862
17	Composite income tax rate	7/ 23.1693%	23.1693%	23.1693% 9/	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	23.1693%	
18	Income tax on deferred expenses (-L16 x L17)	(28)	(28)	(43)	(58)	(74)	(89)	(104)	(119)	(135)	(650)
19	Deferred costs, net of tax (L16 + L18)	54	92	143	194	244	295	346	397	446	
20	Pre-tax cost of capital rate (L7)	2/ 8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	8.644%	
21	Pre-tax return on monthly deferred expenses (L19 x L20)	0	1	1	1	2	2	2	3	3	16
22	Total deferred costs per Public Staff (L8 + L11 + L12 + L15 + L21)	\$54	\$93	\$144	\$196	\$246	\$297	\$348	\$400	\$450	\$2,228

1/ E-1, Item No. 10, NC-3404(F), Page 1 of 2, Columns (d) through (n).

2/ Pre-tax costs of capital per Order Granting General Rate Increase issued on February 23, 2018, in Docket No. E-2, Sub 1142.

3/ Monthly deferred cost of capital times 4 days, divided by 31 days.

4/ E-1, Item No. 10, NC-3404(F), Column (p), Line 30.

5/ Per Public Staff witness Metz. First month multiplied by 4 days, divided by 31 days.

6/ E-1, Item No. 10, NC-3404(F), Column (p), Line 31.

7/ Maness Stipulation Exhibit 1, Schedule 1-3, Line 8, Column (a).

8/ Sum of Columns (a) through (d).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
NON-FUEL O&M DISPLACEMENT ADJUSTMENT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(u)

Line No.	Item	Amount
1	Asheville Coal Plant generation MW Retired per Company	400 ^{1/}
2	Capacity Factor	36% ^{2/}
3	Hours per year	8,760
4	Total mWh for Asheville Coal generation (L1 x L2 x L3)	<u>1,261,440</u>
5	Asheville CC generation mWh	580 ^{3/}
6	Capacity Factor	70% ^{4/}
7	Hours per year	8,760
8	Total mWh for Asheville CC generation at (L5 x L6 x L7)	<u>3,556,560</u>
9	Additional mWh generation added - system (L8 - L4)	2,295,120
10	NC retail allocation percentage	<u>60.2976% ^{5/}</u>
11	NC retail additional mWh generation added	1,383,902
12	Non-fuel energy-related expense factor used by Public Staff	<u>0.00294222 ^{6/}</u>
13	NC retail displacement adjustment (L11 x -L12)	<u>\$ (4,072)</u>

1/ Based on DEP Application.

2/ 2018 test year capacity factor provided by Public Staff witness Metz.

3/ Based on Asheville CC MW closed to plant.

4/ Based on discussions with Public Staff witness Metz.

5/ NC retail allocation factor SWPA_RB_PLT_O_PR

6/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(3), Line 24, divided by 1,000

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO COMPANY'S INFLATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(v)

Line No.	Item	Amount
1	Total non-labor O&M expense to be adjusted per Company	\$212,332 ^{1/}
2	Public Staff adjustment to variable O&M expenses for changes in customer growth	(2,746) ^{2/}
3	Public Staff adjustment to aviation expense - Salary & Wage component	0 ^{3/}
4	Public Staff adjustment to outside services	(32) ^{4/}
5	Public Staff adjustment to sponsorships and donations	(23) ^{5/}
6	Public Staff adjustment to lobbying	(1,478) ^{6/}
7	Public Staff adjustment to Board of Directors expenses	<u>(1,270) ^{7/}</u>
8	Total adjusted O&M subject to inflation (Sum of L1 through L7)	\$206,783
9	Inflation percentage based on January 31, 2020 update	<u>2.03% ^{8/}</u>
10	Public Staff inflation adjustment (L7 x L8)	\$4,198
11	Company adjustment	<u>4,296 ^{9/}</u>
12	Public Staff adjustment to inflation (L9 - L10)	<u><u>(\$98)</u></u>

1/ E-1, Item No. 10, NC-1201(F), Line 28, NC Retail Column.

2/ Maness Stipulation Exhibit 1, Schedule 3-1(b)(1), Line 14.

3/ Maness Stipulation Exhibit 1, Schedule 3-1(j), Line 9.

4/ Maness Stipulation Exhibit 1, Schedule 3-1(k), Line 6.

5/ Maness Stipulation Exhibit 1, Schedule 3-1(n), Line 6.

6/ Maness Stipulation Exhibit 1, Schedule 3-1(o), Line 7.

7/ Maness Stipulation Exhibit 1, Schedule 3-1(p), Line 15.

8/ Maness Stipulation Exhibit 1, Schedule 3-1(v)(1), Line 4, Column (e).

9/ E-1, Item No. 10, NC-1201(F), Line 30, NC Retail Column.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF INFLATION RATE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(v)(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	February 2020	258.7 ^{1/}	209.1 ^{1/}	199.2 ^{1/}		
2	Thirteen month average for test year	250.8 ^{2/}	203.2 ^{2/}	201.4 ^{2/}		
3	Increase (decrease) from average to January 2020 (L1 - L2)	7.9	5.9	(2.2)		
4	Percentage increase (decrease)	3.14% ^{3/}	2.90% ^{3/}	-1.09% ^{3/}	0.91% ^{4/}	<u>2.03%</u> ^{5/}

1/ E-1, Item No. 10, NC-1203(E), 1204(E), and 1205(E) January 2020.

2/ E-1, Item No. 10, NC-1202(E), Line 15.

3/ Line 3 divided by Line 2.

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

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
INTEREST SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(w)

Line No.	Item	Amount
1	Public Staff original cost rate base	\$10,409,045 ^{1/}
2	Public Staff long term debt ratio	50.000% ^{2/}
3	Public Staff embedded cost of debt	4.107% ^{3/}
4	Public Staff interest expense income tax deduction (L1 x L2 x L3)	<u>\$213,772</u>
5	Company interest expense income tax deduction	<u>205,768 ^{4/}</u>
6	Adjustment to interest expense (L4 - L5)	\$8,004
7	Composite tax rate	<u>23.1693% ^{5/}</u>
8	Adjustment to income taxes (-L6 x L7)	<u><u>(\$1,854)</u></u>

1/ Maness Stipulation Exhibit 1, Schedule 2, Line 16, Column (c).

2/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (c).

4/ Maness Stipulation Exhibit 1, Schedule 3-1(w)(1), Line 4.

5/ Maness Stipulation Exhibit 1, Schedule 1-3, Line 8.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations

Public Staff
Maness Stipulation Exhibit 1
Schedule 3-1(w)(1)

CALCULATION OF COMPANY'S INTEREST SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Line No.	Item	Amount
1	NC retail rate base per Company	\$10,658,820 ^{1/}
2	Long term debt ratio per Company	47.000% ^{2/}
3	Long term debt cost rate per Company	4.107% ^{3/}
4	Interest tax deduction per Company (L1 x L2 x L3)	<u>\$205,768</u>

1/ Maness Stipulation Exhibit 1, Schedule 2, Line 16, Column (a).

2/ Smith Rebuttal Exhibit 1, Page 2, Line 1, Column 2.

3/ Smith Rebuttal Exhibit 1, Page 2, Line 1, Column 7.

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
RETURN ON EQUITY AND ORIGINAL COST RATE BASE BEFORE
AND AFTER PUBLIC STAFF PROPOSED INCREASE
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 1
Schedule 4

Line No.	Item	Capitalization Ratio (a)	Before Public Staff Proposed Increase			After Public Staff Proposed Increase				
			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	50.000% ^{1/}	\$5,204,523 ^{2/}	4.11% ^{1/}	2.05% ^{5/}	\$213,772 ^{6/}	\$5,211,612 ^{9/}	4.11% ^{1/}	2.0537% ^{11/}	\$214,063 ^{12/}
2	Common equity	50.000% ^{1/}	5,204,523 ^{2/}	6.65% ^{4/}	3.33% ^{5/}	345,965 ^{7/}	5,211,612 ^{9/}	9.00% ^{1/}	4.500% ^{11/}	469,045 ^{12/}
3	Total (L1 + L2)	100.000%	\$10,409,045 ^{3/}		5.38%	\$559,737 ^{8/}	\$10,423,223 ^{10/}		6.5537%	\$683,108

1/ Per Public Staff witness Woolridge.

2/ Column (b), Line 3 multiplied by Column (a), Lines 1 and 2

3/ Maness Stipulation Exhibit 1, Schedule 2, Line 16, Column (c).

4/ Line 2, Column (e) divided by Line 2, Column (b).

5/ Column (a) multiplied by Column (c).

6/ Line 1, Column (b) multiplied by Line 1, Column (c).

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

8/ Maness Stipulation Exhibit 1, Schedule 3, Line 17, Column (c).

9/ Line 3, Column (f) multiplied by Column (a), Lines 1 and 2

10/ Maness Stipulation Exhibit 1, Schedule 2, Line 16, Column (e).

11/ Column (a) multiplied by Column (g).

12/ Column (f) multiplied by Column (g).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF PUBLIC STAFF'S ADDITIONAL GROSS
REVENUE REQUIREMENT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness 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	\$214,063 ^{1/}	469,045 ^{4/}	\$683,108
2	Net operating income before proposed increase	<u>213,772 ^{2/}</u>	<u>345,965 ^{5/}</u>	<u>559,737</u>
3	Additional net operating income requirement (L1 - L2)	\$291	\$123,080	\$123,371
4	Retention factor	<u>0.9963091 ^{3/}</u>	<u>0.7654709 ^{6/}</u>	
5	Additional revenue requirement (L3 ÷ L4)	<u><u>\$292</u></u>	<u><u>\$160,790</u></u>	<u><u>\$161,082</u></u>

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

INDEX TO MANESS STIPULATION EXHIBIT 2

	<u>Title</u>	<u>Schedule Number</u>
1	CALCULATION OF LEVELIZED EDIT RIDER CREDIT	1
2	CALCULATION OF ANNUITY FACTOR FOR EDIT LIABILITY RIDER	1(a)
3	CALCULATION OF LEVELIZED FEDERAL PROVISIONAL EDIT RIDER CREDIT	2
4	CALCULATION OF ANNUITY FACTOR FOR EDIT LIABILITY RIDER	2(a)
5	CALCULATION OF LEVELIZED STATE EDIT RIDER CREDIT	3

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF LEVELIZED EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation 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	(\$403,750) ^{1/}	($403,750) ^{1/}	($403,750) ^{1/}	($403,750) ^{1/}	($403,750) ^{1/}	
2	Annuity factor	<u>4.3312</u> ^{2/}	4.3312 ^{2/}	4.3312 ^{2/}	4.3312 ^{2/}	4.3312 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(93,219)	(93,219)	(93,219)	(93,219)	(93,219)	(\$466,095) ^{5/}
4	One minus composite income tax rate	<u>76.8307%</u> ^{3/}	<u>76.8307%</u>				
5	Net operating income effect (L3 x L4)	(71,621)	(71,621)	(71,621)	(71,621)	(71,621)	(358,104)
6	Retention factor	<u>0.7654709</u> ^{4/}	<u>0.7654709</u>				
7	Levelized rider EDIT credit (L5 / L6)	<u>(\$93,565)</u>	<u>(\$93,565)</u>	<u>(\$93,565)</u>	<u>(\$93,565)</u>	<u>(\$93,565)</u>	<u>(\$467,822)</u>

1/ Smith Supplemental Exhibit 4, Page 1, Columns (b) and (c), Line 10.

2/ Maness Stipulation Exhibit 2, Schedule 1(a), Line 6.

3/ One minus composite income tax rate of 23.1693%.

4/ Maness Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).

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

DUKE ENERGY PROGRESS, LLC **Public Staff**
Docket No. E-2, Sub 1219 **Maness Stipulation Exhibit 2**
North Carolina Retail Operations **Schedule 1(a)**
CALCULATION OF ANNUITY FACTOR FOR EDIT
LIABILITY RIDER
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

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)	6.078%
4	Present value of 1 dollar over "number of years" with with 1 payment per year	4.2034
5	1 plus (interest rate divided by two)	<u>1.0304</u>
6	Annuity factor (L4 x L5)	<u><u>4.3312</u></u>

	Capital Structure	Cost Rates	Overall Rate of Return ^{6/}	Net of Tax Rate
	(a)	(b)	(c)	(d)
<u>After Tax Rate of Return</u>				
7	Long-term debt	50.00% ^{2/}	4.107% ^{4/}	2.054%
8	Common equity	<u>50.00% ^{3/}</u>	<u>9.000% ^{5/}</u>	<u>4.500% ^{8/}</u>
9	Total	<u><u>100.00%</u></u>	<u><u>6.554%</u></u>	<u><u>6.078%</u></u>

1/ Rider period recommended by Public Staff.

2/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (a).

4/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (g).

5/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (g).

6/ Column (a) multiplied by Column (b).

7/ Column (c) multiplied by (One minus combined income tax rate of 23.1693%).

8/ Amount from Column (c).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF LEVELIZED FEDERAL PROVISIONAL
EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 2
Schedule 2

Line No.	Item	Year 1 Revenue Requirement (a)	Total Revenue Requirement (b)
1	Total NC retail regulatory liability to be amortized	(\$110,315) ^{1/}	
2	Annuity factor	0.9714 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(113,563)	(\$113,563)
4	One minus composite income tax rate	76.8307% ^{3/}	76.8307%
5	Net operating income effect (L3 x L4)	(87,251)	(87,251)
6	Retention factor	0.7654709 ^{4/}	0.7654709
7	Levelized rider EDIT credit (L5 / L6)	(\$113,983)	(\$113,983)

1/ Smith Supplemental Exhibit 4, Page 1, Column (e), Line 8.

2/ Maness Stipulation Exhibit 2, Schedule 2(a), Line 6.

3/ One minus composite income tax rate of 23.1693%.

4/ Maness Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF ANNUITY FACTOR FOR EDIT LIABILITY RIDER
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 2
Schedule 2(a)

Line No.	Item	Amount			
<u>Annuity Factor</u>					
1	Number of years	1 ^{1/}			
2	Payment per period	1			
3	After tax rate of return (L9)	6.078%			
4	Present value of 1 dollar over "number of years" with with 1 payment per year	0.9427			
5	One plus (interest rate divided by two)	1.0304			
6	Annuity factor (L4 x L5)	<u>0.9714</u>			
	Capital <u>Structure</u> (a)	Cost <u>Rates</u> (b)	Overall Rate of Return ^{6/} (c)	Net of Tax Rate (d)	
<u>After Tax Rate of Return</u>					
7	Long-term debt	50.00% ^{2/}	4.107% ^{4/}	2.054%	1.578% ^{7/}
8	Common equity	50.00% ^{3/}	9.000% ^{5/}	4.500%	4.500% ^{8/}
9	Total	<u>100.00%</u>	<u>6.554%</u>	<u>6.554%</u>	<u>6.078%</u>

1/ Rider period recommended by Public Staff.

2/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (a).

4/ Maness Stipulation Exhibit 1, Schedule 4, Line 1, Column (g).

5/ Maness Stipulation Exhibit 1, Schedule 4, Line 2, Column (g).

6/ Column (a) multiplied by Column (b).

7/ Column (c) multiplied by (One minus composite income tax rate of 23.1693%).

8/ Amount from Column (c).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
CALCULATION OF LEVELIZED STATE EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 2
Schedule 3

Line No.	Item	Year 1 Revenue Requirement (a)	Total Revenue Requirement (b)
1	Total NC retail regulatory liability to be amortized	(\$23,998) ^{1/}	
2	Annuity factor	0.9714 ^{2/}	
3	Levelized rider EDIT regulatory liability (L1 / L2)	(24,704)	(\$24,704)
4	One minus composite income tax rate	76.8307% ^{3/}	76.8307%
5	Net operating income effect (L3 x L4)	(18,980)	(18,980)
6	Retention factor	0.7654709 ^{4/}	0.7654709
7	Levelized rider N.C. State EDIT credit (L5 / L6)	(\$24,795)	(\$24,795)

1/ Smith Supplemental Exhibit 4, Page 1, Column (d), Line 8.

2/ Maness Stipulation Exhibit 2, Schedule 2(a), Line 6.

3/ One minus composite income tax rate of 23.1693%.

4/ Maness Stipulation Exhibit 1, Schedule 1-2, Line 14, Column (d).

INDEX TO MANESS STIPULATION EXHIBIT 3

	<u>Title</u>	<u>Schedule Number</u>
1	COMPANY RATE BASE, AS REALLOCATED BY PUBLIC STAFF	1
2	COMPANY ADJUSTMENTS TO RATE BASE, AS REALLOCATED BY PUBLIC STAFF	1-1
3	COMPANY NET OPERATING INCOME, AS REALLOCATED BY PUBLIC STAFF	2
4	COMPANY ADJUSTMENTS TO NET OPERATING INCOME, AS REALLOCATED BY PUBLIC STAFF	2-1

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
COMPANY RATE BASE, AS REALLOCATED BY PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 3
Schedule 1

Line No.	Description	North Carolina Retail Operations		
		Company SWPA Per Books (a)	Company SWPA Proforma Accounting Adjustments (b)	SWPA Reallocated By Public Staff (c)
1	Electric plant in service	\$18,662,205	\$ 480,546	\$19,142,751
2	Accumulated depreciation and amortization	(7,983,917)	(56,354)	(8,040,272)
3	Net electric plant (L1 + L2)	\$10,678,288	\$424,192	\$11,102,480
4	Materials and supplies	750,939	(172,187)	578,751
5	Working capital investment	(376,636)	859,596	482,960
6	Accumulated deferred taxes	(1,318,934)	(200,944)	(1,519,879)
7	Operating reserves	(54,448)	-	(54,448)
8	Construction work in progress	102,930	(102,930)	(0)
9	Total Original Cost Rate Base (Sum of L3 through L8)	<u>\$9,782,137</u>	<u>\$807,726</u>	<u>\$10,589,863</u>

1/ Per cost of service study recommended by Public Staff witness McLawhorn.

2/ Maness Stipulation Exhibit 3, Schedule 1-1, Line 36.

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
COMPANY ADJUSTMENTS TO RATE BASE,
AS REALLOCATED BY PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 3
Schedule 1-1
Page 2 of 2

Line No.	Description	EPIS (Col. 1)	Accum Deprec (Col. 2)	Materials & Supplies (Col. 3)	Working Capital (Col. 4)	ADIT (Col. 5)	Operating Reserves (Col. 6)	CWIP (Col. 7)	Rate Base (Col. 8)
22	* Synchronize interest expense with end of period rate base	-	-	-	-	-	-	-	-
23	* Adjust cash working capital	-	-	-	(21,219)	-	-	-	(21,219)
24	Adjust coal inventory	-	-	(11,603)	-	-	-	-	(11,603)
25	* Adjust for credit card fees	-	-	-	-	-	-	-	-
26	Adjust Depreciation for new rates	-	(87,779)	-	-	-	-	-	(87,779)
27	Adjust vegetation management expenses	-	-	-	-	-	-	-	-
28	Adjust reserve for end of life nuclear costs	-	-	-	-	-	-	-	-
29	* Update deferred balance and amortize storm costs	-	-	-	604,202	(139,989)	-	-	464,213
30	Adjust other revenue	-	-	-	-	-	-	-	-
31	Adjust for change in NCUC Reg Fee	-	-	-	-	-	-	-	-
32	* Reflect retirement of Asheville Steam Generating Plant	-	-	(7,021)	63,888	(14,802)	-	-	42,065
33	Adjust for CertainTeed payment obligation	-	-	-	-	-	-	-	-
34	* Amortize deferred balance Asheville Combined Cycle	-	-	3,488	20,722	(4,801)	-	-	19,409
35	Adjust Purchased Power	-	-	-	-	-	-	-	-
36	Total adjustments	<u>\$ 480,546</u>	<u>\$ (56,354)</u>	<u>\$ (172,187)</u>	<u>\$ 859,596</u>	<u>\$ (200,944)</u>	<u>\$ -</u>	<u>\$ (102,930)</u>	<u>\$ 807,726</u>

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
COMPANY NET OPERATING INCOME, AS REALLOCATED BY
PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 3
Schedule 2

Line No.	Description	North Carolina Retail Operations		
		Company SWPA Per Books ^{1/} (a)	Company SWPA Proforma Accounting Adjustments ^{2/} (b)	SWPA Reallocated By Public Staff ^{3/} (c)
1	Electric operating revenue	\$ 3,657,316	\$ (296,473)	\$ 3,360,843
	Electric operating expenses:			
	Operation and maintenance:			
2	Fuel used in electric generation	881,642	(29,989)	851,653
3	Purchased power	158,032	(1,944)	156,088
4	Other operation and maintenance expense	1,047,158	(186,980)	860,178
5	Depreciation and amortization	665,546	288,596	954,142
6	General taxes	101,487	1,409	102,896
7	Interest on customer deposits	7,971	-	7,971
8	Net income taxes	115,441	(67,676)	47,766
9	Amortization of investment tax credit	(2,111)	(1,468)	(3,580)
10	Total electric operating expenses (Sum of L2 through L9)	2,975,166	1,948	2,977,114
11	Operating income (L1 minus L10)	\$ 682,151	\$ (298,421)	\$ 383,730

1/ Per cost of service study recommended by Public Staff witness McLawhorn.

2/ Maness Stipulation Exhibit 3, Schedule 2-1, Line 36.

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

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
**COMPANY ADJUSTMENTS TO NET OPERATING INCOME,
AS REALLOCATED BY PUBLIC STAFF**
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 3
Schedule 2-1
Page 1 of 2

Line No.	Description	Electric Operating Revenue (Col. 1)	Fuel Used in Electric Generation (Col. 2)	Purchased Power and Net Interchange (Col. 3)	Other O&M Expense (Col. 4)	Depreciation and Amortization (Col. 5)	General Taxes (Col. 6)	Income Taxes (at Composite Rate of 23.1693005%) (Col. 7)	Amortization of ITC (Col. 8)	Operating Income
1	Annualize retail revenues for current rates	(201,667)	-	-	(744)	-	-	(46,552)	-	(154,370)
2	Update fuel costs to proposed rate	-	11,436	-	-	-	-	(2,650)	-	(8,786)
3	* Normalize for weather	(72,510)	(20,432)	-	(268)	-	-	(12,004)	-	(39,806)
4	* Annualize revenues for customer growth	(2,159)	(2,471)	-	(8)	-	-	74	-	246
5	Eliminate unbilled revenues	11,826	-	-	-	-	-	2,740	-	9,086
6	Adjust for costs recovered through non-fuel riders	(27,808)	(18,522)	-	(135,449)	(58,102)	(6,392)	62,917	-	127,740
7	Adjust O&M for executive compensation	-	-	-	(2,387)	-	-	553	-	1,834
8	Annualize depreciation on year end plant balances	-	-	-	-	40,944	-	(9,486)	(1,468)	(29,989)
9	Annualize property taxes on year end plant balances	-	-	-	-	-	4,032	(934)	-	(3,098)
10	* Adjust for post test year additions to plant in service	-	-	-	-	62,359	4,990	(15,604)	-	(51,745)
11	* Amortize deferred environmental costs	-	-	-	-	95,938	-	(22,228)	-	(73,710)
12	Annualize O&M non-labor expenses	-	-	-	4,296	-	-	(995)	-	(3,301)
13	* Normalize O&M labor expenses	-	-	-	(19,699)	-	(1,156)	4,832	-	16,023
14	Update benefits costs	-	-	-	(6,327)	-	-	1,466	-	4,861
15	* Levelize nuclear refueling outage costs	-	-	-	(6,190)	-	-	1,434	-	4,756
16	* Amortize rate case costs	-	-	-	701	-	-	(162)	-	(539)
17	Adjust aviation expenses	-	-	-	(1,445)	-	(18)	339	-	1,124
18	Adjust for approved regulatory assets and liabilities	-	-	-	1,603	(3,489)	5	436	-	1,445
19	* Adjust for Merger Related Costs	-	-	-	(4,021)	(180)	(53)	986	-	3,268
20	* Amortize Severance Costs	-	-	-	(24,025)	-	-	5,566	-	18,458
21	Adjust NC income taxes for rate change	-	-	-	-	-	-	(2,228)	-	2,228

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
COMPANY ADJUSTMENTS TO NET OPERATING INCOME,
AS REALLOCATED BY PUBLIC STAFF
For the Test Year Ended December 31, 2018
(Dollar Amounts Expressed in Thousands)

Public Staff
Maness Stipulation Exhibit 3
Schedule 2-1
Page 2 of 2

Line No.	Description	Electric Operating Revenue (Col. 1)	Fuel Used in Electric Generation (Col. 2)	Purchased Power and Net Interchange (Col. 3)	Other O&M Expense (Col. 4)	Depreciation and Amortization (Col. 5)	General Taxes (Col. 6)	Income Taxes (at Composite Rate of 23.1693005%) (Col. 7)	Amortization of ITC (Col. 8)	Operating Income
22	* Synchronize interest expense with end of period rate base	-	-	-	-	-	-	876	-	(876)
23	* Adjust cash working capital	-	-	-	-	-	-	95	-	(95)
24	Adjust coal inventory	-	-	-	-	-	-	-	-	-
25	* Adjust for credit card fees	-	-	-	5,269	-	-	(1,221)	-	(4,048)
26	Adjust Depreciation for new rates	-	-	-	-	87,779	-	(20,338)	-	(67,441)
27	Adjust vegetation management expenses	-	-	-	5,746	-	-	(1,331)	-	(4,415)
28	Adjust reserve for end of life nuclear costs	-	-	-	-	(260)	-	60	-	200
29	* Update deferred balance and amortize storm costs	-	-	-	-	43,157	-	(9,999)	-	(33,158)
30	Adjust other revenue	(4,155)	-	-	(5)	-	-	(962)	-	(3,188)
31	Adjust for change in NCUC Reg Fee	-	-	-	(234)	-	-	54	-	180
32	* Reflect retirement of Asheville Steam Generating Plant	-	-	-	(6,397)	10,090	-	(856)	-	(2,837)
33	Adjust for CertainTeed payment obligation	-	-	-	-	-	-	-	-	-
34	* Amortize deferred balance Asheville Combined Cycle	-	-	-	2,604	10,361	-	(3,004)	-	(9,961)
35	Adjust Purchased Power	-	-	(1,944)	-	-	-	450	-	1,493
36	Total adjustments	<u>\$ (296,473)</u>	<u>\$ (29,989)</u>	<u>\$ (1,944)</u>	<u>\$ (186,980)</u>	<u>\$ 288,596</u>	<u>\$ 1,409</u>	<u>\$ (67,676)</u>	<u>\$ (1,468)</u>	<u>\$ (298,421)</u>

Duke Energy Progress
Docket No. E-2, Sub 1219
North Carolina Retail Operations
ADJUSTMENT TO DEFERRED
ARO-RELATED ENVIRONMENTAL COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Supplemental Exhibit I
Schedule 1

Line No.	Item	NC Retail Amount
Income statement impact		
1	Balance for Amortization	\$ 293,101 ^{1/}
2	Years to Amortize	<u>27</u> ^{2/}
3	Annual amortization per Public Staff (L1 / L2)	10,856
4	Annual amortization per Company	<u>88,023</u> ^{3/}
5	Public Staff adjustment to amortization expense (L3 - L4)	<u>\$ (77,167)</u>
6	Statutory tax rate	23.1693005% ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 17,879</u>
Rate base impact		
8	Coal Ash Balance at September 1, 2020 per Public Staff (L1)	\$ 293,101
9	Less annual amortization (-L3)	<u>(10,856)</u>
10	Adjusted Coal Ash Deferral Balance per Public Staff (L8 + L9)	282,245
11	Coal Ash Deferral Balance per Company	<u>352,092</u> ^{5/}
12	Public Staff adjustment to coal ash deferral balance (L10 - L11)	(69,847)
13	Adjustment to remove total coal ash deferral balance from rate base (-L10)	<u>(282,245)</u>
14	Total Public Staff adjustment to regulatory assets and liabilities (L12 + L13)	<u>\$ (352,092)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 81,577</u>

1/ Maness Supplemental Exhibit I, Schedule 1-1, Line 37, Column (n).

2/ Amortization period recommended by Public Staff.

3/ Smith Supplemental Exhibit 1, NC-1101, ARO column, Line 8.

4/ Smith Supplemental Exhibit 1, NC-1101, Line 10 (unrounded).

5/ Smith Supplemental Exhibit 1, NC-1101, ARO column, Line 20.

**Duke Energy Progress
Docket No. E-2, Sub 1219
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 Supplemental Exhibit I
Schedule 1-1**

Line No.	Description	Duke Energy Progress Coal Ash Spend			Duke Energy Progress 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 Before Current Year Return 5/	NC Spend 6/	Active Plant COR Offset 7/	Retired Coal Ash Plant Offset 8/	Ending Balance Before Current Year Return 9/	NC Balance for Return 10/	Deferred Cost of Debt 11/	Deferred Cost of Equity 12/	Total Return 13/	Ending Balance After Return 14/	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	
1	Aug-17									\$ -						
2	Sep-17	\$ 14,127	\$ (3,970)	\$ 10,157	60.8102%	\$ -	\$ 6,177	\$ (204)	\$ (642)	\$ 5,330	\$ 2,665	\$ 3	\$ 12	\$ 15	\$ 5,345	
3	Oct-17	13,925	(4,037)	9,888	60.8102%	5,330	6,013	(204)	(642)	10,497	7,914	9	36	45	10,557	
4	Nov-17	10,320	(2,893)	7,427	60.8102%	10,497	4,516	(204)	(642)	14,167	12,332	14	56	69	14,296	
5	Dec-17	16,303	(4,540)	11,764	60.8102%	14,167	7,153	(204)	(642)	20,475	17,321	20	78	98	20,701	
6	Jan-18	11,674	(3,344)	8,331	60.8102%	20,701	5,066	(204)	(642)	24,921	22,811	31	103	134	25,055	
7	Feb-18	14,437	(4,486)	9,950	60.8102%	24,921	6,051	(204)	(642)	30,126	27,523	38	124	162	30,421	
8	Mar-18	16,035	(4,344)	11,691	60.8102%	30,126	7,109	(102)	(321)	36,812	33,469	41	144	185	37,293	
9	Apr-18	12,731	(3,663)	9,068	60.8452%	36,812	5,518	-	-	42,330	39,571	49	170	219	43,029	
10	May-18	16,344	(6,795)	9,550	60.8452%	42,330	5,811	-	-	48,140	45,235	56	194	250	49,090	
11	Jun-18	13,183	(2,142)	11,042	60.8452%	48,140	6,718	-	-	54,858	51,499	64	221	285	56,093	
12	Jul-18	9,841	(2,809)	7,032	60.8452%	54,858	4,278	-	-	59,137	56,998	71	245	315	60,686	
13	Aug-18	18,187	(5,257)	12,930	60.8452%	59,137	7,867	-	-	67,004	63,070	78	271	349	68,902	
14	Sep-18	14,296	(4,245)	10,051	60.8452%	67,004	6,116	-	-	73,120	70,062	87	301	387	75,405	
15	Oct-18	17,795	(5,156)	12,638	60.8452%	73,120	7,690	-	-	80,810	76,965	95	330	426	83,521	
16	Nov-18	16,803	(4,709)	12,095	60.8452%	80,810	7,359	-	-	88,169	84,489	105	362	467	91,347	
17	Dec-18	25,440	(7,156)	18,284	60.8452%	88,169	11,125	-	-	99,293	93,731	116	402	518	102,990	
18	Jan-19	20,084	(5,553)	14,531	60.8452%	102,990	8,842	-	-	111,831	107,411	134	461	594	112,426	
19	Feb-19	22,836	(6,282)	16,554	60.8452%	111,831	10,072	-	-	121,904	116,868	145	501	647	123,145	
20	Mar-19	24,329	(6,669)	17,660	60.8452%	121,904	10,745	-	-	132,649	127,276	158	546	704	134,595	
21	Apr-19	31,140	(8,577)	22,564	60.8452%	132,649	13,729	-	-	146,378	139,514	174	599	772	149,096	
22	May-19	38,852	(10,638)	28,214	60.8452%	146,378	17,167	-	-	163,545	154,961	193	665	858	167,120	
23	Jun-19	21,872	(6,061)	15,812	61.1093%	163,545	9,662	-	-	173,207	168,376	210	722	932	177,715	
24	Jul-19	14,696	(4,149)	10,547	61.1093%	173,207	6,445	-	-	179,652	176,430	220	757	976	185,136	
25	Aug-19	72,418	(19,795)	52,623	61.1093%	179,652	32,158	-	-	211,810	195,731	244	840	1,083	218,377	
26	Sep-19	36,936	(43,766)	(6,830)	61.1093%	211,810	(4,174)	-	-	207,636	209,723	261	900	1,161	215,364	
27	Oct-19	32,421	(8,928)	23,493	61.1093%	207,636	14,356	-	-	221,992	214,814	267	922	1,189	230,909	
28	Nov-19	32,053	(8,752)	23,301	61.1093%	221,992	14,239	-	-	236,231	229,112	285	983	1,268	246,416	
29	Dec-19	34,964	(9,818)	25,146	61.1093%	236,231	15,366	-	-	251,598	243,915	304	1,046	1,350	263,133	
30	Jan-20	13,781	(3,823)	9,958	61.1093%	263,133	6,085	-	-	269,218	266,175	331	1,142	1,473	270,691	
31	Feb-20	26,016	(7,093)	18,923	61.1093%	269,218	11,564	-	-	280,781	275,000	342	1,180	1,522	283,777	
32	Mar-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	285,331	
33	Apr-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	286,885	
34	May-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	288,439	
35	Jun-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	289,993	
36	Jul-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	291,547	
37	Aug-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	293,101	
38	Sep-20	-	-	-	61.1093%	280,781	-	-	-	280,781	280,781	349	1,205	1,554	293,101	
39	Total	<u>\$ 663,841</u>	<u>\$ (219,450)</u>	<u>\$ 444,391</u>			<u>\$ 270,823</u>	<u>\$ (1,324)</u>	<u>\$ (4,176)</u>		<u>\$ 6,241</u>	<u>\$ 21,537</u>	<u>\$ 27,778</u>			

1/ Smith Supplemental Exhibit 1, NC-1102 Column (a).
 2/ Maness Supplemental Exhibit 1, Schedule 1-2, Column (g).
 3/ Column (a) plus Column (b).
 4/ Smith Supplemental Exhibit 1, NC-1102 Column (d).
 5/ NC Ending Balance for prior month from Column (i), unless otherwise footnoted.
 6/ Column (c) times Column (d).
 7/ Smith Supplemental Exhibit 1, NC-1102 Column (g).
 8/ Smith Supplemental Exhibit 1, NC-1102 Column (h).
 9/ Sum of Columns (e) through (h).
 10/ Column (e) plus (Sum of Columns (f) thru (h), divided by 2).
 11/ Column (j) multiplied by after tax cost of debt for year from NC-1107 divided by twelve.
 12/ Column (j) multiplied by after tax cost of equity for year from NC-1107 divided by twelve.
 13/ Column (k) plus Column (l).
 14/ Column (i) plus total return for year to date from Column (m).

Duke Energy Progress
Docket No. E-2, Sub 1219
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 Supplemental Exhibit I
Schedule 1-2

Line No.	Month	Charah Fulfillment Fee Adjustment ^{1/}	Asheville Transportation Adjustment ^{2/}	Lee Beneficiation Units ^{3/}	Cape Fear Beneficiation Units ^{3/}	Remove Costs of Extraction and Treatment of Contaminated Groundwater ^{4/}	Permanent Alternative Water Supplies and Treatment Systems ^{4/}	Total Public Staff Adjustment ^{5/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Sep-17	\$ -	\$ (1,069)	\$ (1,390)	\$ (1,384)	\$ (57)	\$ (70)	\$ (3,970)
2	Oct-17	-	(1,054)	(1,370)	(1,364)	(219)	(30)	(4,037)
3	Nov-17	-	(781)	(1,015)	(1,011)	(62)	(24)	(2,893)
4	Dec-17	-	(1,234)	(1,604)	(1,597)	(68)	(36)	(4,540)
5	Jan-18	-	(883)	(1,149)	(1,144)	(133)	(35)	(3,344)
6	Feb-18	-	(1,093)	(1,421)	(1,414)	(239)	(320)	(4,486)
7	Mar-18	-	(1,213)	(1,578)	(1,571)	(55)	74	(4,344)
8	Apr-18	-	(963)	(1,253)	(1,247)	(7)	(192)	(3,663)
9	May-18	-	(1,237)	(1,608)	(1,601)	(0)	(2,348)	(6,795)
10	Jun-18	-	(998)	(1,297)	(1,291)	(33)	1,478	(2,142)
11	Jul-18	-	(745)	(968)	(964)	(2)	(130)	(2,809)
12	Aug-18	-	(1,376)	(1,790)	(1,782)	(1)	(308)	(5,257)
13	Sep-18	-	(1,082)	(1,407)	(1,400)	-	(356)	(4,245)
14	Oct-18	-	(1,347)	(1,751)	(1,743)	-	(316)	(5,156)
15	Nov-18	-	(1,272)	(1,653)	(1,646)	(27)	(111)	(4,709)
16	Dec-18	-	(1,925)	(2,503)	(2,492)	(1)	(235)	(7,156)
17	Jan-19	-	(1,520)	(1,976)	(1,967)	-	(89)	(5,553)
18	Feb-19	-	(1,728)	(2,247)	(2,237)	(36)	(34)	(6,282)
19	Mar-19	-	(1,841)	(2,394)	(2,383)	-	(51)	(6,669)
20	Apr-19	-	(2,357)	(3,064)	(3,050)	(6)	(99)	(8,577)
21	May-19	-	(2,940)	(3,823)	(3,806)	(16)	(54)	(10,638)
22	Jun-19	-	(1,655)	(2,152)	(2,143)	(58)	(52)	(6,061)
23	Jul-19	-	(1,112)	(1,446)	(1,440)	(22)	(130)	(4,149)
24	Aug-19	-	(5,481)	(7,126)	(7,094)	(82)	(13)	(19,795)
25	Sep-19	(33,670)	(2,795)	(3,634)	(3,618)	(23)	(25)	(43,766)
26	Oct-19	-	(2,454)	(3,190)	(3,176)	(67)	(42)	(8,928)
27	Nov-19	-	(2,426)	(3,154)	(3,140)	-	(33)	(8,752)
28	Dec-19	-	(2,646)	(3,440)	(3,425)	(24)	(283)	(9,818)
29	Jan-20	-	(1,043)	(1,356)	(1,350)	-	(74)	(3,823)
30	Feb-20	-	(1,969)	(2,560)	(2,548)	-	(16)	(7,093)
31	Total	<u>\$ (33,670)</u>	<u>\$ (50,239)</u>	<u>\$ (65,321)</u>	<u>\$ (65,027)</u>	<u>\$ (1,240)</u>	<u>\$ (3,953)</u>	<u>\$ (219,450)</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 Lucas.

5/ Sum of Columns (a) thru (f).

DUKE ENERGY PROGRESS
Docket No. E-2, Sub 1219
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 Supplemental Exhibit II

Line No.	Item	NC Retail Amount
Income statement impact		
1	Balance for Amortization	\$ 39,575 ^{1/}
2	Years to Amortize	<u>10</u> ^{2/}
3	Annual amortization per Public Staff (L1 / L2)	3,958
4	Annual amortization per Company	<u>7,915</u> ^{3/}
5	Public Staff adjustment to non-ARO amortization expense (L3 - L4)	<u>\$ (3,958)</u>
6	Statutory tax rate	<u>23.16930%</u> ^{4/}
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 917</u>
Rate base impact		
8	Deferred balance of non-ARO environmental costs (L1)	\$ 39,575
9	Annual amortization (-L3)	<u>(3,958)</u>
10	Annualized non-ARO regulatory asset balance per Public Staff (L8 + L9)	35,618
11	Deferred non-ARO regulatory asset per Company	<u>31,660</u> ^{5/}
12	Public Staff annualization adjustment to deferred balance (L10 - L11)	<u>\$ 3,958</u>
13	Adjustment to ADIT (-L12 x L6)	<u>\$ (917)</u>

- 1/ Smith Supplemental Exhibit 1, NC-1101, Non-ARO column, Line 2 (except calculated using SWPA allocation factors).
- 2/ Amortization period recommended by Public Staff.
- 3/ Smith Supplemental Exhibit 1, NC-1101, Non-ARO column, Line 8 (except calculated using SWPA allocation factors).
- 4/ Smith Supplemental Exhibit 1, NC-1101, Line 10 (unrounded).
- 5/ Smith Supplemental Exhibit 1, NC-1101, Non-ARO column, Line 20 (except calculated using SWPA allocation factors).

DUKE ENERGY PROGRESS, LLC
Docket No. E-2, Sub 1219
North Carolina Retail Operations
Basis Point Impact of Grid Improvement Projects
For the Test Year Ended December 31, 2018
(in Thousands)

Public Staff
Maness Supplemental 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/}	\$5,226,125 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$214,794 ^{5/}	
2	Common equity	50.000% ^{1/}	5,226,125 ^{2/}	9.000% ^{1/}	4.500% ^{4/}	470,351 ^{6/}	
3	Total (L1 + L2)	<u>100.000%</u>	<u>\$10,452,251</u> ^{3/}		<u>6.555%</u>	<u>\$685,145</u> ^{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)	Basis Point Impact (f)
4	Long-term debt	50.000% ^{1/}	\$5,233,386 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$215,092 ^{5/}	
5	Common equity	50.000% ^{1/}	5,233,386 ^{2/}	8.967% ^{9/}	4.484% ^{4/}	469,296 ^{6/}	(3) ^{11/}
6	Total (L4 + L5)	<u>100.000%</u>	<u>\$10,466,772</u> ^{8/}		<u>6.539%</u>	<u>\$684,388</u> ^{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)	Basis Point Impact (f)
7	Long-term debt	50.000% ^{1/}	\$5,259,693 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$216,173 ^{5/}	
8	Common equity	50.000% ^{1/}	5,259,693 ^{2/}	8.869% ^{9/}	4.435% ^{4/}	466,457 ^{6/}	(13) ^{14/}
9	Total (L7 + L8)	<u>100.000%</u>	<u>\$10,519,386</u> ^{12/}		<u>6.490%</u>	<u>\$682,630</u> ^{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)	Basis Point Impact (f)
10	Long-term debt	50.000% ^{1/}	\$5,289,621 ^{2/}	4.110% ^{1/}	2.055% ^{4/}	\$217,403 ^{5/}	
11	Common equity	50.000% ^{1/}	5,289,621 ^{2/}	8.762% ^{9/}	4.381% ^{4/}	463,475 ^{6/}	(24) ^{17/}
12	Total (L10 + L11)	<u>100.000%</u>	<u>\$10,579,242</u> ^{15/}		<u>6.436%</u>	<u>\$680,878</u> ^{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/ Dorgan Supplemental Exhibit 1, Schedule 2, Line 16, Column (e).

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/ Dorgan Supplemental Exhibit 1, Schedule 3, Line 17, Column (e).

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.

Grid Transformation Matrix
 Driving Question: What is "grid transformation", and how do we determine whether each program fits that designation?

			Focus				
			Optimize	Optimize	Optimize	Optimize	Modernize
			1	1	4	5	7
			Component Number			1	
			1.1	1.2	4	5.1	7.
			Program		DSDR addition to enable CVR	Transmission Hardening & Line H&R	Transmission System Intelligence
			Capacity Projects	Connectivity Projects			
Weight	Metric	Metric Rankings					
2	TRANSFORMATIVE: Does the program allow the utility to do something <u>on the grid</u> that it could not do before?	1 = No new capabilities; current procedures provide similar capabilities 2 = Adds some limited new capabilities 3 = Adds significant new capabilities	3.0	3.0	3.0	2.0	3.0
1	TIMING: What is the level of urgency to complete this program?	1 = Ongoing work; continue normal pace 2 = New work; 3-year timeline is <u>not</u> critical to grid op 3 = Urgent; 3-year timeline <u>is</u> critical to grid op	2.0	2.0	2.0	2.0	2.0
1	GRID ARCHITECTURE: How does this program fit into the broader grid modernization architecture?	1 = This program is standalone and operates outside grid modernization architecture. 2 = This program is an application dependent upon core components. 3 = This program is a core component of grid mod (foundational).	3.0	3.0	2.0	3.0	3.0
Weighted Grid Transformation Score (min=4; max=12)			11	11	10	9	11

Grid Transformation Matrix
 Driving Question: What is "grid transformation", and how do we determine whether each program fits that designation?

Focus
 Program Number (Oliver Exhibit 10)
 Component Number
 Reference

Modernize	Modernize	Modernize	Modernize	Modernize
13	13	13	16	18
1	2	3		
13.1	13.2	13.3	16.	18.

Weight	Metric	Program	Component				
			Hydraulic to Electronic Recloser	System Intelligence and Monitoring	Fuse Replacement	DER Dispatch Tool	Power Electronics for Volt/VAR Control
		Metric Rankings					
2	TRANSFORMATIVE: Does the program allow the utility to do something <u>on the grid</u> that it could not do before?	1 = No new capabilities; current procedures provide similar capabilities 2 = Adds some limited new capabilities 3 = Adds significant new capabilities	3.0	3.0	2.0	2.0	3.0
1	TIMING: What is the level of urgency to complete this program?	1 = Ongoing work; continue normal pace 2 = New work; 3-year timeline is <u>not</u> critical to grid op 3 = Urgent; 3-year timeline <u>is</u> critical to grid op	1.0	2.0	2.0	2.0	2.0
1	GRID ARCHITECTURE: How does this program fit into the broader grid modernization architecture?	1 = This program is standalone and operates outside grid modernization architecture. 2 = This program is an application dependent upon core components. 3 = This program is a core component of grid mod (foundational).	3.0	3.0	3.0	3.0	3.0
Weighted Grid Transformation Score (min=4; max=12)			10	11	9	9	11

Grid Transformation Matrix
 Driving Question: What is "grid transformation", and how do we determine whether each program fits that designation?

Program Number (Oliver Exhibit 10)
 Component Number
 Reference

Focus	Protect	Protect	Protect	Protect
	19	19	19	19
	2	3	4	5
	19.2	19.3	19.4	19.5

Weight	Metric	Program	Cyber Security			
			Component	Windows Based unit change outs	Device entry alert system	Secure Access Device Management	Line Device Protection
		Metric Rankings				
2	TRANSFORMATIVE: Does the program allow the utility to do something <u>on the grid</u> that it could not do before?	1 = No new capabilities; current procedures provide similar capabilities 2 = Adds some limited new capabilities 3 = Adds significant new capabilities	2.0	2.0	2.0	2.0
1	TIMING: What is the level of urgency to complete this program?	1 = Ongoing work; continue normal pace 2 = New work; 3-year timeline is <u>not</u> critical to grid op 3 = Urgent; 3-year timeline <u>is</u> critical to grid op	2.0	2.0	2.0	2.0
1	GRID ARCHITECTURE: How does this program fit into the broader grid modernization architecture?	1 = This program is standalone and operates outside grid modernization architecture. 2 = This program is an application dependent upon core components. 3 = This program is a core component of grid mod (foundational).	3.0	3.0	3.0	3.0
Weighted Grid Transformation Score (min=4; max=12)			9	9	9	9

DEP response to Public Staff Request No. 101-1 on March 2, 2020 and corrected on October 1, 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	Prior to 1990			Prior to 2000			Prior to 2010			2013			2014		
		New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total
Asheville	0	0	0	0	0	0	0	5	0	5	18	1	22	7	1	28
Cape Fear	0	0	0	0	0	0	0	6	0	6	24	0	30	0	0	30
HF Lee	0	0	0	0	0	0	0	4	0	4	21	0	25	0	0	25
Mayo*	0	0	0	0	0	0	0	4	0	4	9	0	13	0	0	13
Mayo Monofill	0	0	0	0	0	0	0	1	0	1	4	0	5	0	0	5
Robinson	0	0	0	0	4	0	4	0	0	4	40	4	40	40	4	76
Roxboro*	0	5	0	5	0	0	5	5	0	10	9	0	19	0	0	19
Sutton	0	11	0	11	5	0	16	12	0	28	21	0	49	7	0	56
Weatherspoon	0	5	0	5	0	0	5	0	0	5	29	0	34	0	0	34
	0	21	0	21	9	0	30	37	0	67	175	5	237	54	5	286

Wells with an unknown date of installation not included in the table shown above.

*1979 Mayo Floyd Report indicated that wells were installed at Roxboro and Mayo in 1978.

Site	2015			2016			2017			2018			In Place Today		
	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total	New	Abandoned	New Total
Asheville	64	10	82	12	11	83	22	0	105	14	0	119	2	3	118
Cape Fear	34	0	64	8	3	69	4	0	73	2	0	75	0	1	74
HF Lee	29	0	54	37	1	90	9	0	99	4	0	103	0	0	103
Mayo*	21	0	34	20	0	54	4	2	56	32	1	87	19	1	105
Mayo Monofill	0	0	5	13	0	18	13	0	31	0	0	31	0	0	31
Robinson	4	0	80	14	1	93	0	24	69	9	0	78	9	0	87
Roxboro*	40	0	59	59	0	118	18	0	136	4	4	136	23	0	159
Sutton	45	2	99	77	0	176	41	43	174	8	0	182	21	12	191
Weatherspoon	17	0	51	11	3	59	7	9	57	18	0	75	1	0	76
	254	12	528	251	19	760	118	78	800	91	5	886	75	17	944

Public Staff calculated fields

	CAMA	CCR	SOLID WASTE	VOLUNTARY	MULTI-PROGRAM	UNKNOWN	OTHER	TOTAL
Asheville	109	12	7	0	0	0	12	140
Cape Fear	48	0	0	11	0	0	18	77
HF Lee	48	25	0	4	6	0	21	104
Mayo	52	44	0	4	0	0	8	108
Mayo Monofill	0	13	18	0	0	0	0	31
Robinson	0	26	4	0	6	0	44	80
Roxboro	97	47	9	0	0	0	10	163
Sutton	81	86	0	0	26	0	49	242
Weatherspoon	40	14	0	0	0	0	35	89
Total	475	267	38	19	38	0	197	1034

Public Staff calculated fields



CHARLOTTE, NORTH CAROLINA

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO ELECTRIC PLANT
AS OF DECEMBER 31, 2018

Prepared by:



*Excellence Delivered **As Promised***