

INFORMATION SHEET

PRESIDING: Chair Mitchell; Commissioners Brown-Bland, Gray and Clodfelter

PLACE: Raleigh, NC

DATE: Tuesday, September 24, 2019

TIME: 1:30 p.m. – 5:27 p.m.

DOCKET NO.: E-22, Sub 562 and E-22, Sub 566

COMPANY: Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina

DESCRIPTION: Application of for an Adjustment of Rates and Charges Applicable to Service in North Carolina and Petition for an Accounting Order to Defer Certain Capital and Operating Costs Associated with Greenville County Combined Cycle Addition.

VOLUME: 6

APPEARANCES

FOR VIRGINIA ELECTRIC and POWER COMPANY, d/b/a DOMINION ENERGY NORTH CAROLINA:

Robert W. Kaylor, Esq.

Mary Lynne Grigg, Esq.

Andrea Kells, Esq.

Horace P. Payne, Esq.

FOR CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY RATES I:

Warren K. Hicks, Esq.

FOR NUCOR STEEL-HERTFORD:

Joseph W. Eason, Esq.

Damon E. Xenopoulos, Esq.

FOR THE USING AND CONSUMING PUBLIC, THE STATE AND ITS CITIZENS:

Jennifer Harrod, Esq.

Margaret A. Force, Esq.

Theresa Townsend, Esq.

FOR THE USING AND CONSUMING PUBLIC:

David Drooz, Esq.

Dianna Downey, Esq.

Lucy Edmondson, Esq.

Heather Fennell, Esq.

Layla Cummings, Esq.

Gina Holt, Esq.

WITNESSES

See Attached

EXHIBITS

See Attached

FILED

SEP 30 2019

Clerk's Office
N.C. Utilities Commission

I/A

Supporting Schedules

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUPPORT FOR RECONCILIATION SCHEDULE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 1(a)

Line No.	Item	Rate Base Impact (a)	Income Statement Impact (b)	Total Revenue Impact (c)
1	Remove Mt Storm Impairment costs	(\$83)	(\$998)	(\$1,081)
2	Remove Skiffes Creek mitigation costs	(264)	(119)	(383)
3	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	(75)	(49)	(124)
4	Adjust CCR costs	(903)	(6,181)	(7,084)

1/ Johnson Exhibit 1, Schedule 2-1, Line 11.

2/ Johnson Exhibit 1, Schedule 3-1, Line 20.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
REVENUE IMPACT OF SETTLED AND UNRESOLVED ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 1

I/A

Line No.	Item	Per Public Staff (a)	Per Company (b)	Difference (c)	
1	Non-fuel revenue requirement increase per Company application	\$ 26,958 ^{1/}	\$ 26,958	\$ -	
2	Revenue impact of Company update in first supplemental filing	(2,079) ^{2/}	(2,079)	-	
3	Non-fuel revenue requirement increase per Company after updates	<u>24,879</u>	<u>24,879</u>	<u>\$ -</u>	
4	Revenue impact of Public Staff adjustments: ^{3/}				
5	<u>Settled Issues:</u>				
6	Change in equity ratio from 53.65% to 52.00% equity	(1,903)	(1,903)	-	
7	Change in debt cost rate from 4.442% to 4.442%	-	-	-	
8	Change in return on equity from 10.75% to 9.75%	(8,064)	(8,064)	-	
9	Change in retention factor - uncollectibles	(17)	(17)	-	
10	Adjust uncollectibles	(238)	(238)	-	
11	Adjust allocation of state accumulated deferred income taxes	-	-	-	
12	Remove Mt. Storm Impairment costs	(470)	(470)	-	
13	Adjust NUG Contract Termination Expense - Regulatory Asset	(36)	(36)	-	
14	Adjust outside services	(177)	(177)	-	
15	Eliminate certain ADIT balances	-	-	-	
16	Remove Skiffes Creek mitigation costs	(153)	(153)	-	
17	Remove executive compensation costs	(92)	(92)	-	
18	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	-	-	-	
19	Adjustment to remove federal unprotected EDIT treatment as a rider	(287)	(287)	-	
20	Adjust lobbying expense	(42)	(42)	-	
21	Adjust storm costs	(81)	(81)	-	
22	Remove employee severance program costs	(304)	(304)	-	
23	Remove advertising costs	(12)	(12)	-	
24	Adjust annual incentive plan costs	(358)	(358)	-	
25	Adjust employee VRP Backfill costs	-	-	-	
26	Adjust expenses for customer growth, usage, and weather normalization	(90)	(90)	-	
27	Adjust variable non-fuel O&M expenses for displacement	(142)	(142)	-	
28	Adjust inflation adjustment	(9)	(9)	-	
29	Adjust uncollectibles for decrease in base fuel rate	(7)	(7)	-	
30	Adjust cash working capital under present rates	(83) ^{8/}	(83) ^{8/}	-	
31	Adjust cash working capital under proposed rates	(282) ^{9/}	(282) ^{9/}	-	
32	Adjustment to reflect kWh change in revenue annualization	49	49	-	
33	Adjustment for New Office Building	(720)	(720)	-	
34	Rounding	1	1	-	
35	Total Settled Issues	<u>(13,517)</u>	<u>(13,517)</u>	<u>-</u>	
36	<u>Unsettled Issues:</u>				
37	Adjust coal combustion residual (CCR) costs	(7,096) ^{7/}	(2,750) ^{7/}	(4,346)	
38	Adjust cash working capital for CCR adjustment	(74) ^{8/}	(29) ^{8/}	(45)	
39	Total Unsettled Issues	<u>(7,170)</u>	<u>(2,779)</u>	<u>(4,391)</u>	
40	Recommended Increase in non-fuel revenue requirement	<u>\$ 4,192 ^{4/}</u>	<u>\$ 8,583</u>	<u>\$ (4,391)</u>	
41	Public Staff recommended decrease in base fuel revenue requirement	<u>\$ (2,155) ^{5/}</u>	<u>\$ (2,155)</u>	<u>\$ -</u>	
42	Annual EDIT Rider recommended by Public Staff for 5 year period	<u>\$ 649 ^{6/}</u>	<u>\$ 649</u>	<u>\$ -</u>	

1/ Company Exhibit PMM-1, Page 1, Line 6, Column (6).

2/ Company Supplemental Exhibit PMM-1, Page 10.

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

4/ Johnson Settlement Exhibit 1, Schedule 5, Line 7.

5/ Johnson Settlement Exhibit 1, Schedule 5, Line 6.

6/ Johnson Settlement Exhibit 2, Schedule 1, Line 14.

7/ DENC and the Public Staff have agreed on a small portion of this issue involving compounding of financing costs.

8/ Calculated based on including and excluding Public Staff and Company CCR adjustments in spreadsheet calculation.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
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For the Test Year Ended December 31, 2018
(In Thousands)

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4	Revenue impact of Public Staff adjustments: 3/				
5	<u>Settled Issues</u>				
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30	Adjust cash working capital under present rates	(83) 4/	(83) 4/	-	
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32	Adjustment to reflect kWh change in revenue annualization	49	49	-	
33	Adjustment for New Office Building	(720)	(720)	-	
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35	Total Settled Issues	(13,517)	(13,517)	-	
36	<u>Unsettled Issues</u>				
37	Adjust coal combustion residual (CCR) costs	(7,086) 7/	(2,750) 7/	(4,346)	
38	Adjust cash working capital for CCR adjustment	(74) 8/	(28) 8/	(45)	
39	Total Unsettled Issues	(7,170)	(2,778)	(4,391)	
40	Recommended increase in non-fuel revenue requirement	\$ 4,192 4/	\$ 8,583	\$ (4,391)	
41	Public Staff recommended decrease in base fuel revenue requirement	\$ (2,155) 6/	\$ (2,155)	\$ -	
42	Annual EDIT Rider recommended by Public Staff for <u>2</u> year period	\$ 649 6/	\$ 649	\$ -	

1/ Company Exhibit PMM-1, Page 1, Line 6, Column (8).

2/ Company Supplemental Exhibit PMM-1, Page 10.

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8/ Calculated based on including and excluding Public Staff and Company CCR adjustments in spreadsheet calculation.

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

II/A

Public Staff
Floyd Exhibit No. 1
Docket No. E-22, Sub 562

Impact of NUG Adjustment on Allocation Factor 1 (Production Plant) and Factor 2 (Transmission).

Factor 1	Including NUG Adjustment¹	Excluding NUG Adjustment²
NC Retail	4.9507%	4.9503%
Res.	49.3792%	49.0445%
SGS	18.6501%	18.6042%
LGS	12.6175%	12.7442%
6VP	4.9392%	4.9926%
NS	14.0774%	14.2721%
Outdoor Ltg.	0.3264%	0.3321%
Traffic	0.0102%	0.0103%

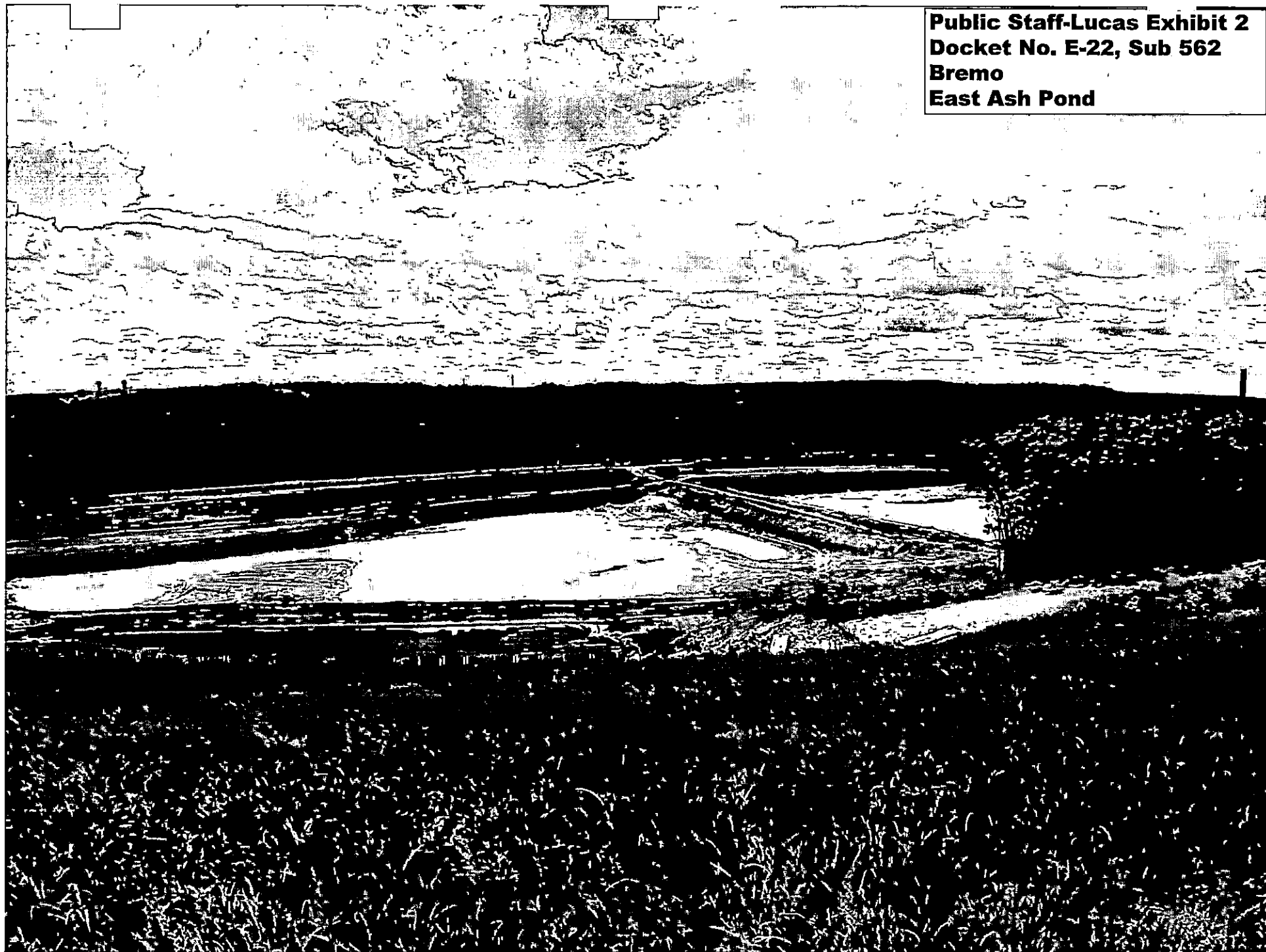
Factor 2	Including NUG Adjustment¹	Excluding NUG Adjustment²
NC Retail	4.2009%	4.1993%
Res.	49.5576%	49.2724%
SGS	18.6429%	18.5937%
LGS	12.5772%	12.6939%
6VP	4.9190%	4.9672%
NS	13.9706%	14.1355%
Outdoor Ltg.	0.3225%	0.3271%
Traffic	0.0102%	0.0102%

¹ From Supplemental Filing, E-1, Item 45A.

² From Company Response to Staff Data Request 97-19.

I/A

Public Staff-Lucas Exhibit 2
Docket No. E-22, Sub 562
Bremo
East Ash Pond





I, A
Public Staff - Lucas Exhibit 3
Docket No. E-22, Sub 562

*Self
Analliz*

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 257-0056

STATE WATER CONTROL BOARD ENFORCEMENT ACTION

A SPECIAL ORDER ISSUED TO

VIRGINIA POWER

POSSUM POINT POWER STATION 4/14/87

This is a Special Order issued by the State Water Control Board (referred to hereafter as "the Board") under the authority of Section 62.1-44.15(8) of the Code of Virginia to Virginia Electric and Power Company (referred to hereafter as "Virginia Power").

Virginia Power owns and operates Possum Point Power Station located in Dumfries, Virginia. This facility is authorized to discharge wastewater to Quantico Creek and the Potomac River. Virginia Power's discharge of wastewater is the subject of NPDES Permit No. VA0002071 that was issued to Virginia Power by the Board effective April 26, 1985, and will expire April 26, 1990.

At the Possum Point site, Virginia Power uses 2 ponds (Ash Ponds D and E) to dispose of its fly ash waste. Virginia Power has conducted groundwater monitoring in the vicinity of Ash Pond D and Ash Pond E. The initial groundwater monitoring data indicate violations of groundwater standards. Because of these data, the Board believes that groundwater in the vicinity of the two ponds should be studied further.

The Board orders and Virginia Power agrees to study the groundwater in order to define the extent and nature of the contamination and to evaluate the remediation alternatives. The study shall be conducted in accordance with Appendix A to this Order which is attached hereto and incorporated herein by reference.

Virginia Power waives its rights to a hearing on, to judicial review of, and to service of this Order. Virginia Power waives its right to written findings of fact and conclusion of law to support this Order. Notwithstanding the foregoing, Virginia Power shall not be deemed to have waived in any future administrative or judicial proceedings its right to contest the factual basis upon which any allegation of violation, or noncompliance with, this Order rests. Virginia Power further agrees that the Board may cancel this Order in



I/A
Public Staff - Lucas Exhibit 4
Docket No. E-22, Sub 562

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

2111 Hamilton Street

MAY 14 1991

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 620 918 395

VEPCO
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Attention: Environmental Compliance Unit

Re: Cancellation of Consent Special Order - Possum Point Plant

Dear Sir or Madam:

Based on a review of regional and enforcement files in the above referenced matter, it appears that the requirements of the above referenced consent special order (hereinafter the "Order"), issued on September 12, 1989 have either been substantially fulfilled, or, if not fulfilled, incorporated into the newly reissued VPDES permit for the Possum Point facility. Accordingly, I am prepared to recommend to the State Water Control Board, at its next quarterly meeting on June 24, 1991, that the Order be cancelled, and hereby give you the notice of cancellation required by the Order. Should you have any questions or concerns regarding the cancellation proceeding, please do not hesitate to contact me at (804) 367-6811.

Sincerely,

Kathleen F. O'Connell

cc: Jan Pickerel, SWCB, NRO
Steve Hetrick, SWCB, VRO

I, A

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 161

The following responses to Questions No. 1 of Public Staff Data Request No. 161, dated August 7, 2019 has been prepared under my supervision.



Jason E. Williams
Director, Learning Development &
Communications
Dominion Energy Services, Inc.

Question No. 1:

In DR 61-2, the Public Staff asked for Company's organizational charts for its environmental management divisions, including all organizational units responsible for disposal, regulatory compliance, and other management of Coal Combustion Residuals, for each year from 1980 to the present. We received the present organizational chart and comparable charts from 1995, 1997, and 2001. We also received a spreadsheet identifying individuals in management positions from 2005 through 2019. From 1995 (and possibly prior) through 2001 we have identified A.W. Howard as the manager for coal ash related environmental compliance. From 2001 through 2015, we have identified Pamela Faggert as the manager for coal ash related environmental compliance. For 2015 through the present, we have identified Jason Williams as the manager of coal ash related environmental compliance.

- a. Please confirm we have correctly identified the people primarily responsible for CCR management and disposal for time periods noted in the organization charts.
- b. Are the positions held by Mr. Howard and Ms. Faggert identical in function and duties to the position currently held by Jason Williams? If not, please provide a detailed statement on any ways in which the positions differ.
- c. When did Jason Williams start his current position? Was he with the Company prior to being in this position? If so, what was his former position(s) and who did he report to?

Response:

- a. The timeline is correct, but the person in the Company's Environmental Services organization primarily responsible (at a Director level) for coal ash environmental compliance between 2002 and 2015 was Cathy Taylor, not Pamela Faggert. Ms. Faggert was the Vice President over the entire Environmental Services organization, and Mr. Hadder before that. Prior to Ms. Taylor assuming her role, Judson White held the position (either at a Director or Manager level).

I/A

**Public Staff - Lucas Exhibit 8
Docket No. E-22, Sub 562**

1. Data Request 3-1 (sent March 29, 2019—due April 8, 2019):

For all current and former coal generating stations, please list all locations (e.g. lay of land areas, cinder piles, ponds, impoundments, and landfills) 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, please provide:

- a. The physical address.
- b. The nomenclature used to identify each CCR storage area at each location.
- c. Year(s) during which each CCR storage area was in operation (receiving or storing CCR).
- d. Amount of CCR disposed (columns for cubic yards and tonnage) during each year identified in 1.c. (if available), and cumulatively.
- e. A description of the engineering features and construction details of the storage areas including, the storage volume.
- f. A site plan for each location, and, if available, an aerial photograph with key features marked.
- g. Whether the Company plans to excavate or otherwise close or take corrective action at the area.
- h. The timeframe for closure plans or other corrective action. Please also provide any draft closure or corrective action plans.
- i. If the area is being excavated or other corrective action is being taken, whether it being done to meet regulatory requirements and which regulatory requirements.
- j. If the area is being excavated and there is not a regulatory requirement or other environmental compliance reason, please provide the management reason for the excavation or other corrective action being taken.

Response to Data Request 3-1 (received April 18, 2019):

The response for a, b, c, d, g, h, i, and j are provided in a table included in Attachment Public Staff Set 3-1b (JW). The response for "e" is provided in Attachment Public Staff Set 3-1a (JW) which includes applicable engineering, design, and construction information. The site plans requested in "f" can be found in the groundwater monitoring plans included in Attachment Public Staff Set 3-11b (JW).

Public Staff - Lucas Exhibit 9
Docket No. E-22, Sub 562

The Public Staff has requested that the Company provide groundwater monitoring data in spreadsheet format for each coal-fired generating facility showing exceedances, by constituent, of applicable groundwater quality standards from the date that groundwater monitoring first began (obligated or voluntary) at each facility to the present.

In response to the Public Staff's requests, the Company searched for and produced voluminous groundwater monitoring data dating back as far as 30 years for some facilities and groundwater monitoring reports dating back as far as 20 years for some facilities. The Company, however, is unable to create a spreadsheet or table that represents whether or not the Company exceeded groundwater standards during the operation of the coal ash impoundments up to the time of CCR Rule monitoring.

The Company represents that, based on the records currently in the Company's possession, developing the summary spreadsheets is practically infeasible and could mischaracterize the data. For example, because the Company's spreadsheets containing historic groundwater monitoring data contain only raw data, it would be inappropriate—without the critical additional information on applicable background levels and other contextual information (such as groundwater monitoring plans, permits, and well maps for each sample period)—to characterize the data as representing an exceedance (or not) of a standard in effect at the time. There may or may not have been additional groundwater exceedances caused by coal ash over the life of the impoundments that the Company cannot determine because it is not feasible to reconstruct a complete history of exceedances from Dominion's existing records.

Specifically, the Company represents that it has produced all documented, reported, and/or verified exceedances of applicable groundwater standards that it was able to locate. The Company has provided these in the form of groundwater reports. The Company further represents that, to the best of its knowledge, the groundwater reports produced in discovery reflect the Company's available records of scientifically verified and analyzed groundwater data, including exceedances, at its CCR storage facilities. The Company acknowledges, however, that it has not been able to locate some historical VPDES permits and related documents for its CCR sites in Virginia and West Virginia.

I/A

Public Staff - Lucas Exhibit 9
Docket No. E-22, Sub 562

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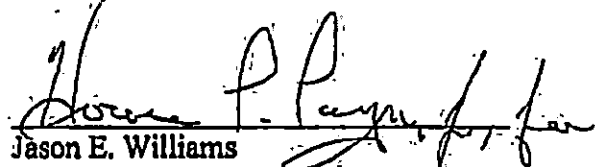
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Public Staff - Lucas Exhibit 11
Docket No. E-22, Sub 562

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 3

The following response to Question No. 15 of Public Staff Data Request No. 3, dated March 29, 2019 has been prepared under my supervision.


Jason E. Williams
Director-Environmental Services
Dominion Energy Services, Inc.

Question No. 15:

Please identify, by plant and basin location, which seeps are authorized in NPDES permits, and which are not.

- a. For the seeps not authorized by NPDES permits (including those for which permit applications are pending), please explain whether VEPCO contends they were or were not violations of NPDES permit requirements, or violations of Virginia's § 62.1-44.15 or West Virginia's § 22-11-6, and why.
- b. Please include whether the seep is an engineered seep or not.
- c. Please provide the date the seep was first identified and, if applicable, the year the seep was eliminated.

Response:

There are no NPDES permitted or unpermitted seeps associated with VEPCO's CCR impoundments. VEPCO understands the term "seep" to mean a channelized flow of water emanating from the berm of an impoundment that does or has the potential to reach surface waters.

I, A

Public Staff - Lucas Exhibit 12
Docket No. E-22, Sub 562

Chesapeake - Industrial Landfill
No. of Virginia SWMR Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Exceedances Total
	2017	2018	
Antimony	-	2	2
Arsenic	14	14	28
Barium	-	-	-
Beryllium	-	-	-
Cadmium	-	-	-
Chromium	-	-	-
Cobalt	1	-	1
Copper	-	-	-
Lead	-	-	-
Mercury	-	-	-
Nickel	-	-	-
Selenium	-	-	-
Silver	-	-	-
Thallium	-	-	-
Tin	-	-	-
Vanadium	-	-	-
Zinc	-	-	-
Carbon disulfide	-	-	-
Acenaphthene	-	-	-
Anthracene	-	-	-
Dibenzofuran	-	-	-
Di-n-butyl	-	-	-
Fluorene	-	-	-
Cyanide	-	-	-
Sulfide	12	15	27
Exceedances Total	27	31	58

Notes:

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from two or semi-annual sampling events and was collected from ten (10) downgradient wells.

*The inactive bottom ash pond was intended to be closed in place per the CCR Rule prior to April 17, 2018 and therefore be exempt from the detection and assessment monitoring requirements. However, there is no longer an exemption for inactive CCR surface impoundments and a 547-day extension was granted by the USEPA.

IIA

Public Staff - Lucas Exhibit 13
Docket No. E-22, Sub 562
Page 1 of 18

No. of CCR Rule Groundwater Monitoring Exceedances by Generating Station and Constituent

Parameters	Generating Station								Exceedances Total
	Bremo	Chesapeake	Chesterfield	Clover	Mt. Storm	Possum Pt.	VCHC	Yorktown	
Appendix III Constituents									
Boron	10	N/A	37	7	5	9	3	5	76
Calcium	4	N/A	18	18	-	15	9	7	71
Chloride	-	N/A	14	15	5	18	-	2	54
Fluoride	2	N/A	9	-	6	-	3	3	23
pH	-	N/A	8	2	11	-	5	-	26
Sulfate	2	N/A	36	23	3	18	9	10	101
Total Dissolved Solids	2	N/A	19	14	-	18	6	9	68
Appendix IV Constituents									
Antimony	-	N/A	-	-	-	-	-	-	-
Arsenic	-	N/A	8	-	2	-	-	-	10
Barium	-	N/A	-	-	-	-	-	-	-
Beryllium	-	N/A	-	-	-	-	-	-	-
Cadmium	-	N/A	-	-	-	-	-	-	-
Chromium	-	N/A	-	-	-	-	-	-	-
Cobalt	-	N/A	33	-	1	1	-	-	35
Fluoride	-	N/A	-	-	1	-	-	-	1
Lead	-	N/A	-	-	-	-	-	-	-
Lithium	2	N/A	11	-	-	-	3	-	16
Mercury	-	N/A	-	-	-	-	-	-	-
Molybdenum	-	N/A	-	-	1	-	-	-	1
Selenium	-	N/A	-	-	-	-	-	-	-
Thallium	-	N/A	-	-	-	-	-	-	-
Total Radium	-	N/A	8	-	-	-	-	-	8
Exceedances Total	22	-	201	79	35	79	38	36	490

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.


- *1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.
- 2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1,

I/A

Public Staff - Lucas Exhibit 15
Docket No. E-22, Sub 562
Public Version

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 157

The following responses to Questions No. 1-5 of Public Staff Data Request No. 157, dated August 6, 2019 have been prepared under my supervision.


Gregg Crenshaw
Director, Corporate Risk Management
Dominion Energy Services, Inc.

BEGIN CONFIDENTIAL

Question No. 1:

Please provide a list of all insurance carriers that may be liable for environmental damages for each site with a CCR unit, including general liability, environmental, or property liability insurance. For each policy, please provide a description of the coverage, when the coverage was purchased, the time period of the coverage, and any other relevant information.

[REDACTED]

[REDACTED]

[REDACTED]

II/A

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)

Annualize Depreciation Expense
Page 1 of 7

Line No.	Description	Amount	
	To Annualize Depreciation Expense based on Plant In Service at June 30, 2019.		
1	Gross Plant Projected @ June 30, 2019 (see page 3)	\$ 42,957,794	
2	Depreciation Rate	2.94%	
3	Annualized Depreciation Expense at June 30, 2019 (Line 1 x Line 2)	\$ 1,262,959	
4	Test Year Depreciation Expense [Note 1], line 17	\$ 1,117,830	
5	Increase in Depreciation Expense (Line 3 - Line 4)	\$ 145,129	
6	North Carolina Jurisdictional Factor [Note 2], line 22	5.0457%	
7	North Carolina Adjustment for Depreciation Expense	\$ 7,323	NC-37
8	Adjustment to Accumulated Depreciation for Annualization of Depreciation Expense (Line 7)	\$ 7,323	NC-75
9	Transactional Income Tax Rate	25.623%	
10	Adjustment to Accumulated Deferred Income Taxes for Annualization of Depreciation Expense (- Line 7 x Line 9)	\$ (1,876)	NC-82
11	[Note 1]		
12	Test Year Depreciation Expense - System (COS Sch 4, line 144) (see page 6)	\$ 1,142,010	
13	Less Test Year Depreciation Expense for:		
14	Ringfenced Projects (COS Sch 4, line 144) (see page 6)	5,352	
15	Distribution Strategic Underground Program (VA Only Activity) (see page 6) (COS Sch 4, Lines 81, 83, 85, 87, 89, 91, 93, and 104)	9,975	
16	ARO other than Ringfenced Projects (COS Sch 4, Lines 36, 61-62, 105-106, and 130-131) (see page 6)	8,852	
17	Adjusted Total System Depreciation Expense (line 12 less lines 14-16)	\$ 1,117,830	
18	[Note 2]		
19	NC Jurisdiction Depreciation Expense (COS Sch 4, line 144) (see page 6)	56,838	
20	Less: NC ARO (COS Sch 4, Lines 36, 61-62, 105-106, and 130-131) (see page 6)	438	
21	NC Jurisdiction Depreciation Expense less ARO (line 19 - line 20)	56,403	
22	NC as a % of System Excluding Ringfenced, Rider U and ARO (line 21 / line 17)	5.0457%	

II/A

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)

Annualize Depreciation Expense
Page 1 of 7

Line No.	Description	Amount	
	To Annualize Depreciation Expense based on Plant In Service at June 30, 2019.		
1	Gross Plant Projected @ June 30, 2019 (see page 3)	\$ 42,957,794	
2	Depreciation Rate	2.94%	
3	Annualized Depreciation Expense at June 30, 2019 (Line 1 x Line 2)	\$ 1,262,959	
4	Test Year Depreciation Expense [Note 1], line 17	\$ 1,117,830	
5	Increase in Depreciation Expense (Line 3 - Line 4)	\$ 145,129	
6	North Carolina Jurisdictional Factor [Note 2], line 22	5.0457%	
7	North Carolina Adjustment for Depreciation Expense	\$ 7,323	NC-37
8	Adjustment to Accumulated Depreciation for Annualization of Depreciation Expense (Line 7)	\$ 7,323	NC-75
9	Transactional Income Tax Rate	25.623%	
10	Adjustment to Accumulated Deferred Income Taxes for Annualization of Depreciation Expense (- Line 7 x Line 9)	\$ (1,876)	NC-82
11	[Note 1]		
12	Test Year Depreciation Expense - System (COS Sch 4, line 144) (see page 6)	\$ 1,142,010	
13	Less Test Year Depreciation Expense for:		
14	Ringfenced Projects (COS Sch 4, line 144) (see page 6)	5,352	
15	Distribution Strategic Underground Program (VA Only Activity) (see page 6)		
	(COS Sch 4, Lines 81, 83, 85, 87, 89, 91, 93, and 104)	9,975	
16	ARO other than Ringfenced Projects (COS Sch 4, Lines 36, 61-62, 105-106, and 130-131) (see page 6)	8,852	
17	Adjusted Total System Depreciation Expense (line 12 less lines 14-16)	\$ 1,117,830	
18	[Note 2]		
19	NC Jurisdiction Depreciation Expense (COS Sch 4, line 144) (see page 6)	56,838	
20	Less: NC ARO (COS Sch 4, Lines 36, 61-62, 105-106, and 130-131) (see page 6)	436	
21	NC Jurisdiction Depreciation Expense less ARO (line 19 - line 20)	56,403	
22	NC as a % of System Excluding Ringfenced, Rider U and ARO (line 21 / line 17)	5.0457%	

II, A

Dominion Energy North Carolina
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)
Page 1 of 8
Annualize Depreciation Expense

Line No.	Description	Amount	
	To Annualize Depreciation Expense based on Plant In Service at June 30, 2019.		
1	Total North Carolina Jurisdiction Depreciation Expense, June 30, 2019 (Page 3, Line 7)	\$ 59,572	
2	Total North Carolina Jurisdiction Test Year Depreciation Expense (Page 7, Line 31)	56,400	
3	North Carolina Jurisdiction Depreciation Adjustment (line 1 - line 2)	\$ 3,173	NC-37
4	Adjustment to Accumulated Depreciation for Annualization of Depreciation Expense (Line 3)	\$ 3,173	NC-75
5	Transactional Income Tax Rate	25.623%	
6	Adjustment to Accumulated Deferred Income Taxes for Annualization of Depreciation Expense (- Line 4 x Line 5)	\$ (813)	NC-82

DOMINION ENERGY NORTH CAROLINA
DocId# No. E-22 Sub 552
North Carolina Retail Operations
AMORTIZATION SCHEDULE FOR DEFERRED
CCR COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Mancos Exhibit
Schedule 1-1

Line No.	Month	DENC Coal Ash Spend			DENC N.C. Retail Coal Ash Deferral									
		System Spend per Company	Public Staff Adjustments	System Spend per Public Staff	% to NC for Spend	Beginning Balance	NC Spend	Ending Balance	Deferred Cost	Deferred Cost of Equity	Total Return	Ending Balance		
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)		
1	Jun-16	\$ 8,385	\$ -	\$ 8,385	5.0924%	\$ -	\$ 427	\$ 427	\$ 0	\$ 1	\$ 1	\$ 428		
2	Jul-16	8,504	-	8,504	5.0924%	427	433	860	1	3	4	865		
3	Aug-16	15,534	-	15,534	5.0924%	860	766	1,626	2	5	7	1,633		
4	Sep-16	10,413	-	10,413	5.0924%	1,626	507	2,156	3	8	11	2,209		
5	Oct-16	9,958	-	9,958	5.0924%	2,156	507	2,694	3	10	14	2,730		
6	Nov-16	34,995	-	34,995	5.0924%	2,694	1,777	4,471	5	15	20	4,527		
7	Dec-16	(342)	-	(342)	5.0924%	4,471	(17)	4,453	6	16	22	4,535		
8	Jan-17	7,055	-	7,055	5.0924%	4,453	359	4,812	6	20	26	4,921		
9	Feb-17	11,081	-	11,081	5.0924%	4,812	564	5,377	7	22	29	5,514		
10	Mar-17	16,106	-	16,106	5.0924%	5,377	820	6,197	8	25	33	6,367		
11	Apr-17	5,783	-	5,783	5.0924%	6,197	255	6,491	8	27	36	6,687		
12	May-17	13,484	-	13,484	5.0924%	6,491	687	7,178	10	29	39	7,423		
13	Jun-17	5,304	-	5,304	5.0924%	7,178	270	7,693	11	32	43	7,735		
14	Jul-17	19,983	-	19,983	5.0924%	7,693	1,018	8,710	11	35	46	8,799		
15	Aug-17	11,814	-	11,814	5.0924%	8,710	692	9,342	13	38	51	9,452		
16	Sep-17	13,689	-	13,689	5.0924%	9,342	697	10,009	13	41	55	10,204		
17	Oct-17	6,321	-	6,321	5.0924%	10,009	322	10,331	14	43	58	10,583		
18	Nov-17	20,347	-	20,347	5.0924%	10,331	1,035	11,367	15	46	61	11,681		
19	Dec-17	6,396	-	6,396	5.0924%	11,367	326	11,693	16	49	65	12,072		
20	Jan-18	8,058	-	8,058	5.0924%	11,693	451	12,154	17	51	67	12,601		
21	Feb-18	10,001	-	10,001	5.0924%	12,154	509	12,663	17	53	70	13,189		
22	Mar-18	8,899	-	8,899	5.0924%	12,663	453	13,117	18	55	73	13,706		
23	Apr-18	8,945	-	8,945	5.0924%	13,117	456	13,572	19	57	76	14,237		
24	May-18	6,001	-	6,001	5.0924%	13,572	396	13,878	18	59	78	14,521		
25	Jun-18	9,256	-	9,256	5.0924%	14,521	448	15,002	21	65	87	15,711		
26	Jul-18	8,805	-	8,805	5.0924%	15,002	448	15,540	21	67	89	16,162		
27	Aug-18	7,889	-	7,889	5.0924%	15,540	402	16,566	22	69	92	16,802		
28	Sep-18	12,255	-	12,255	5.0924%	16,566	524	16,566	22	67	89	16,816		
29	Oct-18	17,088	-	17,088	5.0924%	16,566	524	16,827	23	69	92	17,374		
30	Nov-18	21,667	-	21,667	5.0924%	16,827	561	16,827	23	71	95	17,576		
31	Dec-18	3,464	-	3,464	5.0924%	16,827	176	18,207	24	75	103	18,455		
32	Jan-19	5,173	-	5,173	5.0924%	18,207	263	18,470	26	78	104	18,822		
33	Feb-19	5,173	-	5,173	5.0924%	18,470	263	18,470	26	78	104	18,822		
34	Mar-19	7,223	-	7,223	5.0924%	18,470	368	18,838	26	80	106	19,596		
35	Apr-19	6,973	-	6,973	5.0924%	18,838	355	19,193	26	81	108	20,159		
36	May-19	6,457	-	6,457	5.0924%	19,193	323	19,522	27	83	110	20,597		
37	Jun-19	12,729	-	12,729	5.0924%	19,522	648	20,170	28	85	112	21,357		
38	Jul-19	-	-	-	5.0924%	20,170	-	20,170	30	91	121	21,599		
39	Aug-19	-	-	-	5.0924%	21,357	-	21,357	30	91	121	21,720		
40	Sep-19	-	-	-	5.0924%	21,357	-	21,357	30	91	121	21,841		
41	Oct-19	-	-	-	5.0924%	21,357	-	21,357	30	91	121	21,962		
42	Total	\$ 376,693	\$ -	\$ 376,693		\$ 18,183		\$ 18,183		\$ 2,005		\$ 2,658		

- 1/ NCUIC Form E-1, Supplemental from 10, Page 174 of 350, Column (1).
2/ There are no Public Staff recommended prudence disallowances to the deferred CCR costs.
3/ Column (a) plus Column (b).
4/ NCUIC Form E-1, Supplemental from 10, Page 174 of 350, Column (2).
5/ Amount in Column (g) of previous line, plus return for prior 12 months in July of each year.
6/ Column (a) times Column (g).
7/ Column (c) plus Column (f).
8/ Column (c) plus Column (g), divided by 2, times after tax cost of debt.
9/ Column (h) plus Column (g), divided by 2, times after tax cost of equity.
10/ NCUIC Form E-1, Supplemental from 10, Page 178 of 350, divided by 12.
11/ Column (g) plus total return for year to date from Column (j).

11/19

I/A

IN THE MATTER OF DUKE ENERGY PROGRESS, LLC
Jay Lucas on 11/02/2017

1 STATE OF NORTH CAROLINA
2 UTILITIES COMMISSION
3 RALEIGH
4 DOCKET NO. E-2, SUB 1142
5 BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
6
7 In the Matter of)
8)
9)
10 Application of Duke Energy)
11 Progress, LLC for)
12 Adjustment of Rates and)
13 Charges Applicable to)
14 Electric Utility Service in)
15 North Carolina)
16)
17)
18)
19)
20)
21)
22)
23)
24)
25)

15 Video Deposition of JAY LUCAS
16 (Taken by Duke Energy Progress, LLC)
17 Raleigh, North Carolina
18 Thursday, November 2, 2017
19
20
21
22

23 Reported by: Marisa Munoz-Vourakis -
24 RMR, CRR and Notary Public
25

I/A



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 24, 2019

Ms. M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. EMP-103, Sub 0 – Application for CPCN to Construct an 80-MW Electric Merchant Plant in Roper, Washington County, North Carolina

Dear Ms. Jarvis:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the testimony of Evan D. Lawrence, Utilities Engineer, Electric Division.

By copy of this letter, we are forwarding copies to all parties of record.

Sincerely,

/s/ Megan Jost
Staff Attorney
megan.jost@psncuc.nc.gov

Executive Director
(919) 733-2435

Communications
(919) 733-2810

Economic Research
(919) 733-2902

Legal
(919) 733-6110

Transportation
(919) 733-7766

Accounting
(919) 733-4279

Consumer Services
(919) 733-9277

Electric
(919) 733-4326

Natural Gas
(919) 733-2267

Water
(919) 733-5610

OFFICIAL COPY

DEWC Lucas Cross Exhibit 3

I/A

FILED

DEC 11 2017

Clerk's Office
N.C. Utilities Commission

PLACE: Dobbs Building

Raleigh, North Carolina

DATE: Wednesday, December 6, 2017

TIME: 9:30 a.m. - 12:30 p.m.

DOCKET NO: E-2, Sub 1142

ORIGINAL

BEFORE: Chairman Edward S. Finley, Jr., Presiding

Commissioner Bryan E. Beatty

Commissioner ToNola D. Brown-Bland

Commissioner Jerry C. Dockham

Commissioner James G. Patterson

Commissioner Daniel G. Clodfelter

IN THE MATTER OF:

DUKE ENERGY PROGRESS, LLC

Application for Adjustment of Rates and Charges

Applicable to Electric Utility Service

in North Carolina.

VOLUME: 19

Noteworthy
Reporting Services, LLC

DOMINION ENERGY NORTH CAROLINA
DOCKET NO. E-22, SUB 562
ENERGY AND FUEL EXPENSES

Company Exhibit BEP-1
Schedule 1
Page 1 of 1

Normalized and Adjusted Energy and Fuel Expense based on Actual 12-Months Ended June 2018
(Company Ownership Only)

1, 11

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	12-Months Ended June 2018				Ratio of Coal Oil, CT & CC NUG & Other MWh To Total Sum	Coal, Oil, CT & CC, NUG, Other, Nuclear Adj. and Growth MWh	Adjusted Generation (MWh)	Expense (\$)	June 2018		Normalized & Adjusted Fuel Expense at Applicable Rate (8) x (11)
	Expense (\$)	Generation (MWh)	Rate \$/MWh	Supply (%)					Expense (\$)	Generation (MWh)	
Coal (1)	471,290,374	14,918,376	31.59	16.7	0.2402	61,149,808	14,686,411	39,177,455	1,186,626	31.59	(5) 463,943,723
Nuclear											
Surry	92,861,852	14,166,909	6.55	15.8			14,089,231	7,679,153	1,216,094		
North Anna	89,900,546	13,484,033	6.67	15.1			13,489,188	7,827,546	1,214,887		
Total Nuclear	182,762,398	(4) 27,650,942	6.61	30.9			27,578,419	15,506,699	2,430,980	6.61	(5) 182,293,353
Heavy Oil	21,254,912	357,813	59.40	0.4	0.0058	61,149,808	352,223	6,716,689	138,525	59.40	(5) 20,922,046
CC & CT (2)	1,004,343,099	29,436,131	34.12	32.9	0.4739	61,149,808	28,978,466	69,750,846	2,912,060	28.97	(5) 839,541,311
Hydro	0	3,337,366		3.7			3,337,366	0	378,644		0
Solar		100,404		0.1			100,404		7,585		
Power Transactions											
NUG Fuel	(6) 45,053,070	4,145,080	10.87	4.6	0.0667	61,149,808	4,080,649	7,998,059	367,450	10.87	(5) 44,352,767
NUG Statute Adjustment											29,426,701
Greenville Adjustment											(90,736,791)
PJM Purchases	381,349,975	13,258,175	28.76	14.8	0.2134	61,149,808	13,052,060	21,462,163	223,702	28.76	(7) 375,421,410
Adjustments											
Sales for Resale	(41,128,862)	(249,427)		-0.3			(249,427)	0	(33,308)		(41,128,862) (3)
Net	385,274,183	17,153,828	22.46	19.1			16,883,282	29,460,222	557,844		317,335,224
Pumping	0	(3,370,203)		-3.8			(3,370,203)	0	(383,829)		0
Energy Supply	2,064,924,966	89,584,657	23.05	100.0			88,445,965	160,611,912	7,228,434	20.62	1,824,035,658

NOTE: ALL VALUES REFLECT COMPANY'S OWNERSHIP OF NORTH ANNA, CLOVER AND BATH COUNTY

- (1) Coal includes wood and natural gas steam generation
- (2) CC & CT includes jet oil, light oil and natural gas generation
- (3) Fuel expense is equal to 12 months ended June 2018
- (4) Nuclear expense excludes interim storage
- (5) Fuel expense rate based on weather normalized fuel expense
- (6) NUG fuel includes expenses related to dispatchable NUGs at 78% for those units subject to the marketer percentage
- (7) Purchases include 78% of the fuel expense and the impact of the FTR

Company Supplemental Exhibit DRK-1
Schedule 1
Page 1 of 50

[illegible]

I, A



Paul J. Wielgus - Managing Director

EDUCATION

JD, 1996, licensed in Texas, South Texas College of Law, Houston, Texas

MBA, 1985, graduated with Honors, thesis on electric utility marketing, Lamar University, Beaumont, Texas

MS, College of Mineral and Energy Resources, 1979, awarded Federal Mining Fellowship, thesis on fuel transportation pricing and contracting, West Virginia University, Morgantown, West Virginia

BS, ECONOMICS, 1977, energy economics concentration, West Virginia University, Morgantown, West Virginia

EXECUTIVE PROFILE

As a Senior Executive in the energy industry was engaged in the development and implementation of commercial business plans. Initiatives undertaken included long-term energy sales and marketing arrangements, energy procurement, development projects, asset expansions, asset management, mergers and acquisitions, and regulatory activities. Currently providing energy advisory services to clients involving the above matters and perform other energy related work assignments on the behalf of clients including expert testimony.

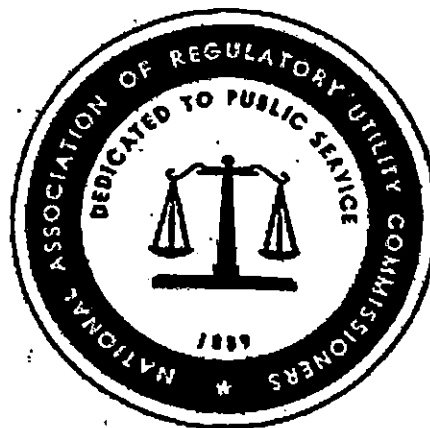
PROFESSIONAL EXPERIENCE

GDS ASSOCIATES, INC., Atlanta, GA Managing Director	2008-Present
NRG Energy, New Roads, LA Vice President – Development	2006-2008
GDS ASSOCIATES, INC., Atlanta, GA Managing Director	2002-2006
ENTERGY WHOLESALE OPERATIONS, Houston, TX Senior Vice President - Business Development	1999-2002
AMERICAN ELECTRIC POWER (AEP), Columbus, OH, Houston, TX Vice President - Project Development	1997-1999
ENRON CAPITAL AND TRADE, Houston, TX Director	1991-1997
PEPSICO (FRITO-LAY), Plano, TX Energy Manager	1987-1991
Prior professional energy experience	1979-1987

I, A

ELECTRIC UTILITY COST ALLOCATION MANUAL

January, 1992



NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

**1101 Vermont Avenue NW
Washington, D.C. 20005
USA**

Tel: (202) 898-2200

Fax: (202) 898-2213

www.naruc.org

\$25.00

OFFICIAL COPY

AUG 23 2019

12/1A

Docket No. E-22, Sub 562
Nucor Exhibit JMT-1



Jacob M. Thomas, P.E. - Principal

EDUCATION

MBA, 2006, concentration in Finance, Auburn University

BS, INDUSTRIAL ENGINEERING, 2000, Georgia Institute of Technology

EXECUTIVE PROFILE

Mr. Thomas has over twenty years of experience, all with GDS Associates, consulting in the areas of finance and data analytics. Mr. Thomas specializes in cost of service modeling, retail and wholesale rate design, economic analysis, evaluation of demand response, load forecasting, load research, and impact evaluation. Jacob has developed cost of service models and managed rate studies for municipal and cooperative clients throughout the United States and has worked as an expert witness evaluating cost of service models and building cost of service scenarios in multiple rate cases involving models developed by Investor Owned Utilities.

PUBLICATIONS

- ◇ "Distributed Energy Generation Compensation and Cost Recovery Guide." NRECA, 2017. Co-author.
- ◇ "Residential Behavioral Program Persistence Effects in Pennsylvania." ACEE Summer Study on Energy Efficiency in Buildings, 2016. Lead author.
- ◇ "AMP Focus Forward Member Toolkit: Preparing for a Distributed Energy Future." American Municipal Power, 2016. Co-author.

REGULATORY EXPERIENCE

Mr. Thomas has filed testimony in the following:

- ◇ Indiana Utility Regulatory Commission – Cause No. 44967
- ◇ Michigan Public Service Commission – Case No. U-15701
- ◇ North Carolina Utilities Commission – Docket No. E-22, Sub 532
- ◇ North Dakota Public Service Commission – Case No. PU-16-666
- ◇ Utah Public Service Commission – Docket No. 16-035-36
- ◇ Vermont Public Service Board – Docket No. 7440; Case No. 18-0974-TF

II, A

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
CALCULATION OF LEVELIZED FEDERAL
UNPROTECTED EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018

Boswell Exhibit I
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)
	<u>Annuity Factor</u>						
1	Number of years	5 1/					
2	Payment per period	1					
3	After tax rate of return	6.150% 2/					
4	Present value of 1 dollar over number of years with						
5	with 1 payment per year	4.1952					
6	1 plus (interest rate divided by two)	1.0308					
7	Annuity factor (L4 x L5)	<u>4.3244</u>					
8	Total NC retail regulatory liability to be amortized	(\$5,928,660) 3/	(\$5,928,660) 3/	(\$5,928,660) 3/	(\$5,928,660) 3/	(\$5,928,660) 3/	
9	Annuity factor (L7)	4.3244	4.3244	4.3244	4.3244	4.3244	
10	Levelized rider federal EDIT regulatory liability (L8 / L9)	<u>(1,370,979)</u>	<u>(1,370,979)</u>	<u>(1,370,979)</u>	<u>(1,370,979)</u>	<u>(1,370,979)</u>	(6,854,895) 6/
11	One minus composite income tax rate	74.38% 4/	74.38% 4/	74.38% 4/	74.38% 4/	74.38% 4/	74.38% 4/
12	Net operating income effect (L10 x L11)	<u>(1,019,696)</u>	<u>(1,019,696)</u>	<u>(1,019,696)</u>	<u>(1,019,696)</u>	<u>(1,019,696)</u>	(5,098,479)
13	Retention factor	0.739861 5/	0.739861 5/	0.739861 5/	0.739861 5/	0.739861 5/	0.739861 5/
14	Levelized rider federal EDIT credit (L5 / L6)	<u>(\$1,378,226)</u>	<u>(\$1,378,226)</u>	<u>(\$1,378,226)</u>	<u>(\$1,378,226)</u>	<u>(\$1,378,226)</u>	<u>(\$6,891,131)</u>

- 1/ Rider period recommended by Public Staff.
2/ Boswell Exhibit 1, Schedule 2(a), Line 3.
3/ Company Supplemental Exhibit PMM-2, Schedule 1, page 3, lines 86 plus 87.
4/ One minus the composite income tax rate of 25.6228%.
5/ Johnson Exhibit 1, Schedule 1-2, Column (d), Line 14.
6/ Sum of Columns (a) through Column (e).

II, A

**Virginia State Corporation Commission
eFiling CASE Document Cover Sheet**

190230230

Case Number (if already assigned)	PUE-2012-00029
Case Name (if known)	Application of Virginia Electric and Power Company for Approval and Certification of Electric Facilities: Surry-Skiffes Creek 500 kV Transmission Line, Skiffes Creek-Wheaton 230 kV Transmission
Document Type	OTHR
Document Description Summary	Update on Status of Certificated Project (February 27, 2019)

Total Number of Pages	52
Submission ID	16229
eFiling Date Stamp	2/27/2019 3:15:03PM

* Pg. 1 of 124 pgs
Filed previously
in the docket. 10m

Public Staff - D. Williamson Exhibit #4
Docket No. E-22, Sub 562

I/A

**MEMORANDUM OF AGREEMENT
AMONG
VIRGINIA ELECTRIC AND POWER COMPANY,
THE VIRGINIA STATE HISTORIC PRESERVATION OFFICE,
U.S. ARMY CORPS OF ENGINEERS NORFOLK DISTRICT, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION**

**SUBJECT: ISSUANCE OF U.S. ARMY CORPS OF ENGINEERS' PERMITS
FOR THE PROPOSED SURRY-SKIFFES CREEK-WHEALTON
TRANSMISSION LINE PROJECT, SURRY COUNTY, JAMES CITY COUNTY,
YORK COUNTY, CITIES OF NEWPORT NEWS AND HAMPTON, VIRGINIA**

APRIL 24, 2017

WHEREAS, pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, 54 U.S.C. § 306108, and 33 CFR Part 325, Appendix C, Processing of Department of the Army Permits: Procedures for Protection of Historic Places, the US Army Corps of Engineers Norfolk District (Corps) is required to take into account the effects of federally permitted undertakings on properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) prior to the issuance of permits for the undertaking and to consult with the Virginia State Historic Preservation Office (SHPO); and with the Advisory Council on Historic Preservation (ACHP) where historic properties are adversely affected; and

WHEREAS, Virginia Electric and Power Company (Dominion), proposes to construct new electrical transmission line infrastructure in the Hampton Roads area of Virginia. The project is intended to provide sufficient and reliable electricity to residents, businesses, and government agencies located on the Virginia Peninsula, and to meet mandatory federal North American Electric Reliability Corporation Reliability Standards. The project is collectively known as the Surry – Skiffes Creek – Whealton project, located in Surry, James City, and York Counties and the Cities of Newport News and Hampton, Virginia (the Project); and

WHEREAS, the Project involves construction of a new high voltage aerial electrical transmission line that consists of three components; (1) Surry – Skiffes Creek 500 kilovolt (kV) aerial transmission line, (2) Skiffes Creek 500 kV – 230 kV – 115 kV Switching Station, and (3) Skiffes Creek – Whealton 230 kV aerial transmission line. The proposed project will permanently impact 2,712 square feet (0.06 acres) of subaqueous river bottom and 281 square feet (0.01 acres) of non-tidal wetlands, and convert 0.56 acres of palustrine forested wetlands to scrub shrub non-tidal wetlands. The transmission lines will cross portions of the James River, Woods Creek, and Skiffes Creek. In addition to structures being built within the James River, structural discharges are proposed in non-tidal wetlands. The proposed activities will require a Corps permit pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act; and

I, A

Exhibit JRW-1

Dominion Energy North Carolina
Recommended Cost of Capital

Panel A - Primary Cost of Capital Recommendation

Capital Source	Capitalization Ratios*	Cost Rate	Weighted Cost Rate
Long-Term Debt	50.00%	4.44%	2.22%
Common Equity	<u>50.00%</u>	<u>9.00%</u>	<u>4.50%</u>
Total Capitalization	100.00%		6.72%

* Capital Structure Ratios are developed in Exhibit JRW-3.

Panel B - Alternative Cost of Capital Recommendation

Capital Source	Capitalization Ratios*	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.35%	4.44%	2.06%
Common Equity	<u>53.65%</u>	<u>8.75%</u>	<u>4.69%</u>
Total Capitalization	100.00%		6.75%

* Capital Structure Ratios are developed in Exhibit JRW-3.

II, A

Docket No. E-22, SUB 562

Exhibit JRW-6

DCF Model

Page 1 of 2

Exhibit JRW-6
DCF Model

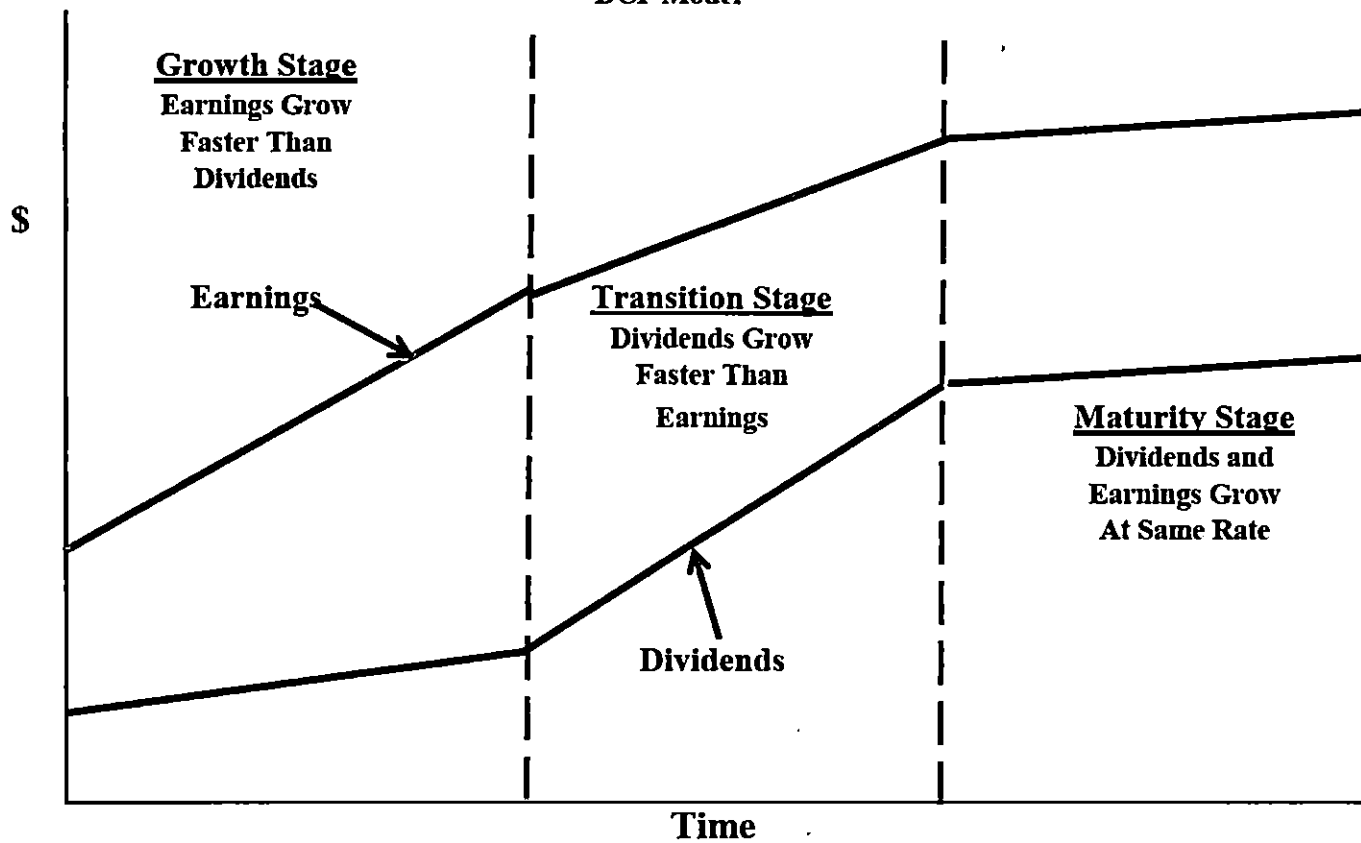


Exhibit JRW-7

**Dominion Energy North Carolina
Discounted Cash Flow Analysis**

**Panel A
Electric Proxy Group**

Dividend Yield*	3.10%
Adjustment Factor	<u>1.02675</u>
Adjusted Dividend Yield	3.18%
Growth Rate**	<u>5.35%</u>
Equity Cost Rate	8.55%

* Page 2 of Exhibit JRW-7

** Based on data provided on pages 3, 4, 5, and
6 of Exhibit JRW-7

**Panel B
Hevert Proxy Group**

Dividend Yield*	3.05%
Adjustment Factor	<u>1.029</u>
Adjusted Dividend Yield	3.14%
Growth Rate**	<u>5.80%</u>
Equity Cost Rate	8.95%

* Page 2 of Exhibit JRW-7

** Based on data provided on pages 3, 4, 5, and
6 of Exhibit JRW-7

II, A

Exhibit JRW-8

**Dominion Energy North Carolina
Capital Asset Pricing Model**

**Panel A
Electric Proxy Group**

Risk-Free Interest Rate	4.00%
Beta*	0.60
<u>Ex Ante Equity Risk Premium**</u>	<u>5.50%</u>
CAPM Cost of Equity	7.3%

* See page 3 of Exhibit JRW-8

** See pages 5 and 6 of Exhibit JRW-8

**Panel B
Hevert Proxy Group**

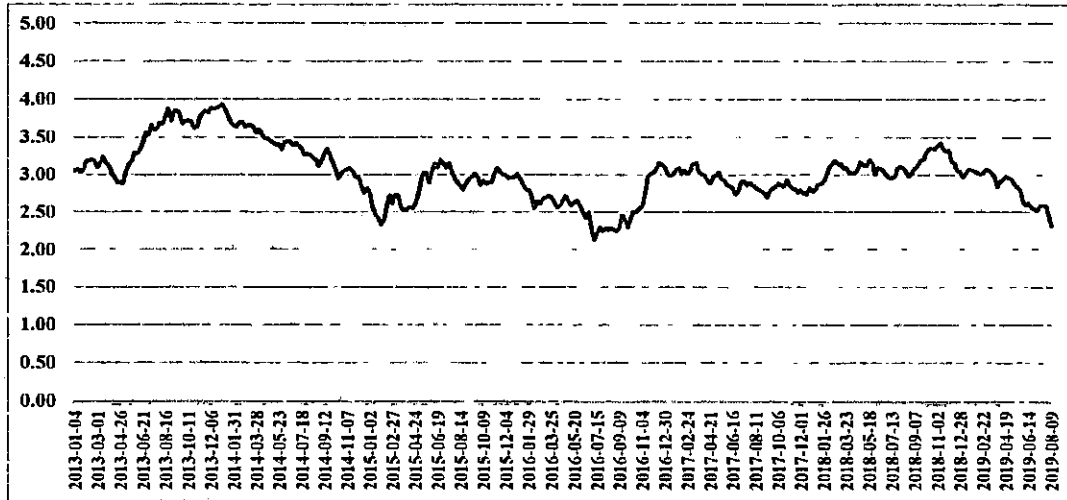
Risk-Free Interest Rate	4.00%
Beta*	0.58
<u>Ex Ante Equity Risk Premium**</u>	<u>5.50%</u>
CAPM Cost of Equity	7.2%

* See page 3 of Exhibit JRW-8

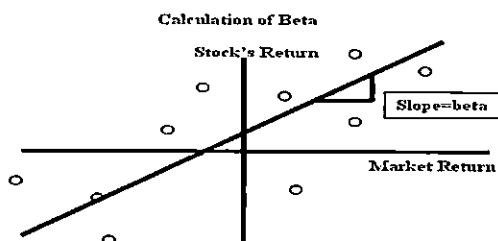
** See pages 5 and 6 of Exhibit JRW-8

Exhibit JRW-8

Thirty-Year U.S. Treasury Yields
2013-2019



Source: Federal Reserve Bank of St. Louis, FRED Database



Panel A
Electric Proxy Group

Company Name	Beta
ALLETE, Inc. (NYSE-ALE)	0.65
Alliant Energy Corporation (NYSE-LNT)	0.60
Ameren Corporation (NYSE-AEE)	0.60
American Electric Power Co. (NYSE-AEP)	0.55
AVANGRID, Inc. (NYSE-AGR)	0.40
CMS Energy Corporation (NYSE-CMS)	0.55
Consolidated Edison, Inc. (NYSE-ED)	0.45
Duke Energy Corporation (NYSE-DUK)	0.50
Edison International (NYSE-EIX)	0.60
Entergy Corporation (NYSE-ETR)	0.60
Eversource Energy (NYSE-ES)	0.60
Exelon Corporation (NYSE-EXC)	0.70
FirstEnergy Corporation (NYSE-FE)	0.65
Hawaiian Electric Industries (NYSE-HEC)	0.55
IDACORP, Inc. (NYSE-IDA)	0.60
MGE Energy, Inc. (NYSE-MGEE)	0.55
NextEra Energy, Inc. (NYSE-NEE)	0.60
NorthWestern Corporation (NYSE-NWE)	0.60
OGE Energy Corp. (NYSE-OGE)	0.80
Pinnacle West Capital Corp. (NYSE-PNW)	0.55
PNM Resources, Inc. (NYSE-PNM)	0.60
Portland General Electric Company (NYSE-POR)	0.60
PPL Corporation (NYSE-PPL)	0.70
Sempra Energy (NYSE-SRE)	0.75
Southern Company (NYSE-SO)	0.50
WEC Energy Group (NYSE-WEC)	0.50
Xcel Energy Inc. (NYSE-XEL)	0.50
Mean	0.59
Median	0.60

Data Source: Value Line Investment Survey, 2019.

Panel B
Hevert Proxy Group

Company	Beta
ALLETE, Inc. (NYSE-ALE)	0.65
Alliant Energy Corporation (NYSE-LNT)	0.60
Ameren Corporation (NYSE-AEE)	0.60
American Electric Power Co. (NYSE-AEP)	0.55
Avaagrid (NYSE-AVG)	0.40
Black Hills Corporation (NYSE-BKH)	0.75
CMS Energy Corporation (NYSE-CMS)	0.55
DTE Energy Company (NYSE-DTE)	0.55
Duke Energy Corporation (NYSE-DUK)	0.45
Evergy (NYSE-EVRG)	NMF
Hawaiian Electric Industries (NYSE-HE)	0.55
Nextera Energy, Inc. (NYSE-NEE)	0.60
NorthWestern Corporation (NYSE-NWE)	0.60
OGE Energy Corp. (NYSE-OGE)	0.80
Otter Tail Corporation (NYSE-OTTR)	0.70
Pinnacle West Capital Corp. (NYSE-PNW)	0.55
PNM Resources, Inc. (NYSE-PNM)	0.60
Portland General Electric Company (NYSE-POR)	0.60
Southern Company (NYSE-SO)	0.50
WEC Energy Group (NYSE-WEC)	0.50
Xcel Energy Inc. (NYSE-XEL)	0.50
Mean	0.58
Median	0.58

Data Source: Value Line Investment Survey, 2019.

Exhibit JRW-8
Risk Premium Approaches

	Historical Ex Post Returns	Surveys	Expected Return Models and Market Data
Means of Assessing The Market Risk Premium	Historical Average Stock Minus Bond Returns	Surveys of CFOs, Financial Forecasters, Companies, Analysts on Expected Returns and Market Risk Premiums	Use Market Prices and Market Fundamentals (such as Growth Rates) to Compute Expected Returns and Market Risk Premiums
Problems/Debated Issues	Time Variation in Required Returns, Measurement and Time Period Issues, and Biases such as Market and Company Survivorship Bias	Questions Regarding Survey Histories, Responses, and Representativeness Surveys may be Subject to Biases, such as Extrapolation	Assumptions Regarding Expectations, Especially Growth

Source: Adapted from Antti Ilmanen, "Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003)

Market Risk Premium										
Category	Study/Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Median
Historical Risk Premium	Ibbotson	1928-1915	1928-2015	Historical Stock Returns - Bond Returns	Arithmetic				6.00%	
	Damodaran	1918-1998	1928-2018	Historical Stock Returns - Bond Returns	Geometric				4.40%	
	Dimson, Marsh, Staunton - Credit Suisse Repo	1918-1998	1990-2018	Historical Stock Returns - Bond Returns	Arithmetic				6.25%	
	Bata	1900-2007	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.66%	
	Shiller	1926-2005	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%	
	Siegel	1926-2005	1926-2005	Historical Stock Returns - Bond Returns	Geometric				7.00%	
	Dimson, Marsh, and Staunton	1900-2005	1900-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%	
	Ogryal & Welch	1873-2004	1873-2004	Historical Stock Returns - Bond Returns	Geometric				6.10%	
	Median								4.66%	
	En Ante Models (Puzzle Research)									
En Ante Models (Puzzle Research)	Class Thomas	1983-1998	1983-1998	Abnormal Earnings Model					3.00%	
	Arnett and Bernstein	1810-2001	1810-2001	Fundamentals - Div Yld - Growth					2.40%	
	Constantinides	1873-2000	1873-2000	Historical Returns & Fundamental P/E & E/E					6.90%	
	Cornell	1926-1997	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%	
	Easton, Taylor, et al	1981-2000	1981-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%	
	Fama French	1982-1998	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%	
	McKinsey	1963-2002	1963-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%	
	Siegel	1803-2001	1803-2001	Historical Earnings Yield	Geometric				2.30%	
	Grabowski	1926-2005	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%	
	Witken & McCurdy	1875-2003	1875-2003	Historical Excess Returns, Structural Breaks		4.02%	5.10%	4.56%	4.56%	
	Buckley	1809-2002	1809-2002	Bond Yields, Credit Risk, and Incomes Volatility		3.90%	1.30%	2.60%	2.60%	
	Bakshi & Chen	1982-1998	1982-1998	Fundamentals - Interest Rates					7.31%	
	Donaldson, Kamstra, & Kramer	1953-2004	1953-2004	Fundamental, Dividend Yld, Returns, & Volatility		3.00%	4.00%	3.50%	3.50%	
	Campbell	1982-2007	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%	
	Best & Dyre	2001	Projection	Fundamentals - Div Yld - Growth					2.00%	
	Fernandez	2007	Projection	Required Equity Risk Premium					4.00%	
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					5.50%	
	Siegel - Refthink ERP	2011	Projection	Real Stock Returns and Components					5.50%	
	Duff & Phelps	2019	Projection	Normalized with 3.5% Long-Term Treasury Yield					5.50%	
	Macchowski - VL - 2014	2014	Projection	Fundamentals - Expected Return Minus 10-Year Treasury Rate					5.50%	
	American Appraisal Quarterly ERP	2015	Projection	Fundamental Economic and Market Factors					6.00%	
	Market Risk Premia	2019	Projection	Fundamental Economic and Market Factors					4.29%	
	NPVIO	2019	Projection	Fundamental Economic and Market Factors					5.50%	
	Damodaran - J-1-19	2019	Projection	Fundamentals - Implied from FCF to Equity Model (Trailing 12 month with adjusted payout)					4.98%	
	Social Security Office of Chief Actuary John Campbell	1900-1993	1900-1993	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%	
Peter Diamond	2001	Projected for 75 Year	Fundamentals (D/P, GDP Growth)	Geometric	1.50%	2.50%	2.00%	2.00%		
John Shoven	2001	Projected for 75 Year	Fundamentals (D/P, GDP Growth)		3.00%	3.50%	3.25%	3.25%		
Median									4.29%	
Surveys	New York Fed	2015	Five-Year	Survey of Wall Street Firms					5.70%	
	Survey of Financial Forecasters	2018	10-Year Projection	About 20 Financial Forecasters					1.85%	
	Duke - CFO Magazine Survey	2019	10-Year Projection	Approximately 200 CFOs					4.03%	
	Welch - Academia									

Capital Asset Pricing Model
Market Risk Premium

Summary of 2010-19 Equity Risk Premium Studies

[illegible]

Duff & Phelps Risk-Free Interest Rates and Equity Risk Premium Estimates

Duff & Phelps Recommended
U.S. Equity Risk Premium (ERP) and
Corresponding Risk-free Rates (R_f);
January 2008–Present

For additional information, please visit
www.duffandphelps.com/CostofCapital

Date	Risk-free Rate (R_f)	R_f (%)	Duff & Phelps Recommended ERP (%)	What Changed
Current Guidance: December 31, 2018 – UNTIL FURTHER NOTICE	Normalized 20-year U.S. Treasury yield	3.50	5.50	ERP
September 5, 2017 – December 30, 2018	Normalized 20-year U.S. Treasury yield	3.50	5.00	ERP
November 15, 2016 – September 4, 2017	Normalized 20-year U.S. Treasury yield	3.50	5.50	R_f
January 31, 2016 – November 14, 2016	Normalized 20-year U.S. Treasury yield	4.00	5.50	ERP
December 31, 2015	Normalized 20-year U.S. Treasury yield	4.00	5.00	
December 31, 2014	Normalized 20-year U.S. Treasury yield	4.00	5.00	
December 31, 2013	Normalized 20-year U.S. Treasury yield	4.00	5.00	
February 28, 2013 – January 30, 2016	Normalized 20-year U.S. Treasury yield	4.00	5.00	ERP
December 31, 2012	Normalized 20-year U.S. Treasury yield	4.00	5.50	
January 15, 2012 – February 27, 2013	Normalized 20-year U.S. Treasury yield	4.00	5.50	ERP
December 31, 2011	Normalized 20-year U.S. Treasury yield	4.00	6.00	
September 30, 2011 – January 14, 2012	Normalized 20-year U.S. Treasury yield	4.00	6.00	ERP
July 1, 2011 – September 29, 2011	Normalized 20-year U.S. Treasury yield	4.00	5.50	R_f
June 1, 2011 – June 30, 2011	Spot 20-year U.S. Treasury yield	Spot	5.50	R_f
May 1, 2011 – May 31, 2011	Normalized 20-year U.S. Treasury yield	4.00	5.50	R_f
December 31, 2010	Spot 20-year U.S. Treasury yield	Spot	5.50	
December 1, 2010 – April 30, 2011	Spot 20-year U.S. Treasury yield	Spot	5.50	R_f
June 1, 2010 – November 30, 2010	Normalized 20-year U.S. Treasury yield	4.00	5.50	R_f
December 31, 2009	Spot 20-year U.S. Treasury yield	Spot	5.50	
December 1, 2009 – May 31, 2010	Spot 20-year U.S. Treasury yield	Spot	5.50	ERP
June 1, 2009 – November 30, 2009	Spot 20-year U.S. Treasury yield	Spot	6.00	R_f
December 31, 2008	Normalized 20-year U.S. Treasury yield	4.50	6.00	
November 1, 2008 – May 31, 2009	Normalized 20-year U.S. Treasury yield	4.50	6.00	R_f
October 27, 2008 – October 31, 2008	Spot 20-year U.S. Treasury yield	Spot	6.00	ERP
January 1, 2008 – October 26, 2008	Spot 20-year U.S. Treasury yield	Spot	5.00	Initialized

*"Normalized" in this context means that in months where the risk-free rate is deemed to be abnormally low, a proxy for a longer-term sustainable risk-free rate is used

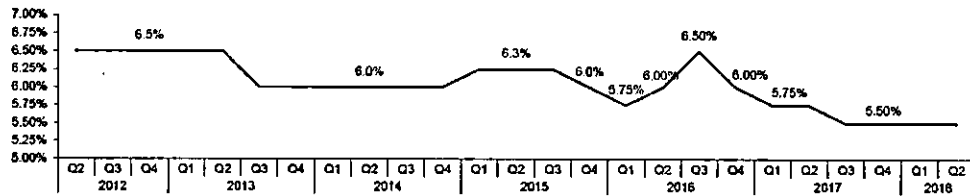
Source: <https://www.duffandphelps.com/-/media/assets/pdfs/publications/valuation/coc/erp-risk-free-rates-jan-2008-present.ashx?ia=en>

Panel A
KPMG Equity Risk Premium Recommendation

Appendix

Historic MRP Estimates

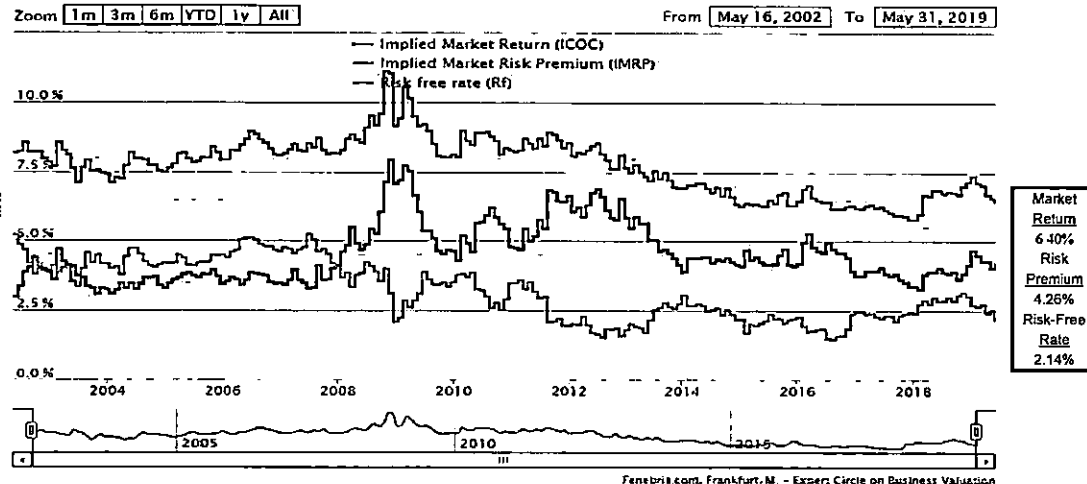
Please find an overview of the historic MRP estimates by KPMG in the graph below.



Source: <https://assets.kpmg/content/dam/kpmg/nl/pdf/2019/advisory/equity-market-research-summary.pdf>

Panel B
Market-Risk-Premia.com Implied Market Risk Premium
31-May-19

Implied Market-risk-premia (IMRP): USA
Equity market



Source: <http://www.market-risk-premia.com/us.html>

I, A

Docket No. E-22, SUB 562

Exhibit JRW-9

Dominion Energy North Carolina ROE Results

Page 1 of 1

Panel A

Mr. Hevert's DCF Results

	Mean Low	Mean	Mean High
30-Day Average	8.34%	9.24%	10.23%
90-Day Average	8.40%	9.31%	10.30%
180-Day Average	8.48%	9.39%	10.38%

Panel B

Mr. Hevert's CAPM Results

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (3.04%)	8.25%	9.78%
Near-Term Projected 30-Year Treasury (3.25%)	8.47%	10.00%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (3.04%)	9.29%	11.12%
Near-Term Projected 30-Year Treasury (3.25%)	9.50%	11.34%

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (3.04%)	9.61%	11.54%
Near-Term Projected 30-Year Treasury (3.25%)	9.83%	11.75%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (3.04%)	10.39%	12.54%
Near-Term Projected 30-Year Treasury (3.25%)	10.60%	12.76%

Panel C

Mr. Hevert's Risk Premium Results

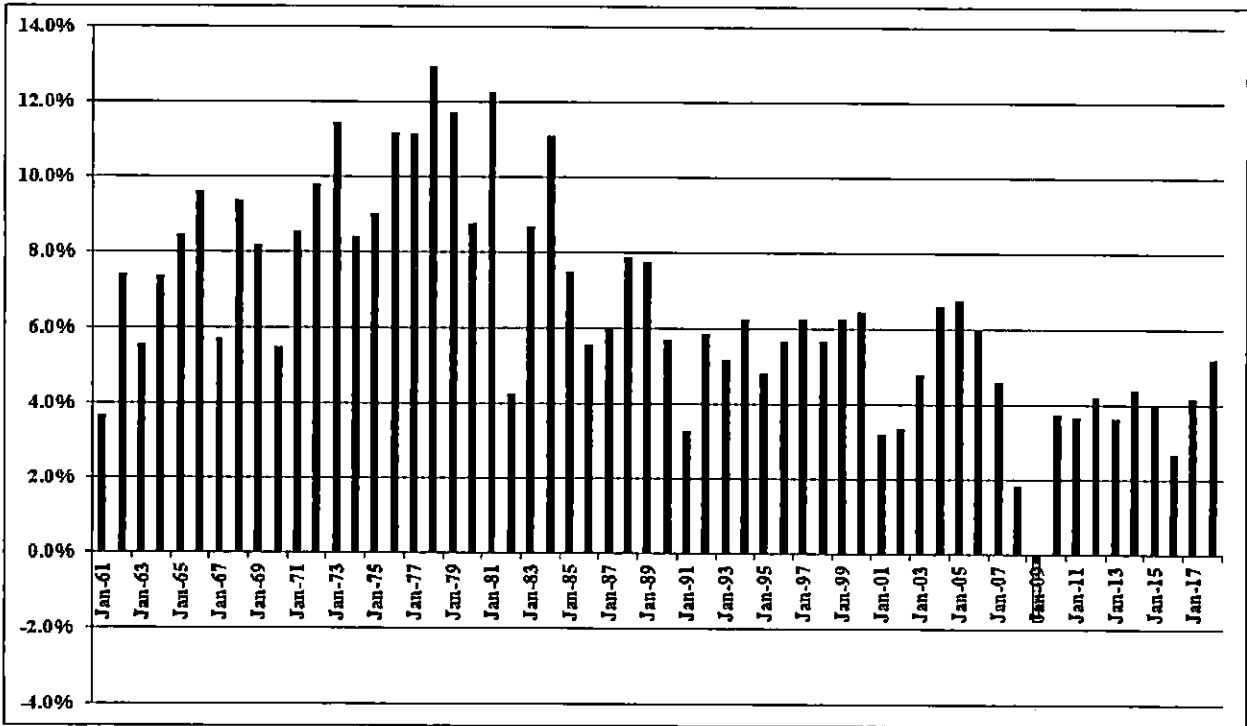
	Return on Equity
Current 30-Year Treasury (3.04%)	9.93%
Near-Term Projected 30-Year Treasury (3.25%)	9.96%
Long-Term Projected 30-Year Treasury (4.05%)	10.17%

I/A

Growth Rates
GDP, S&P 500 Price, EPS, and DPS

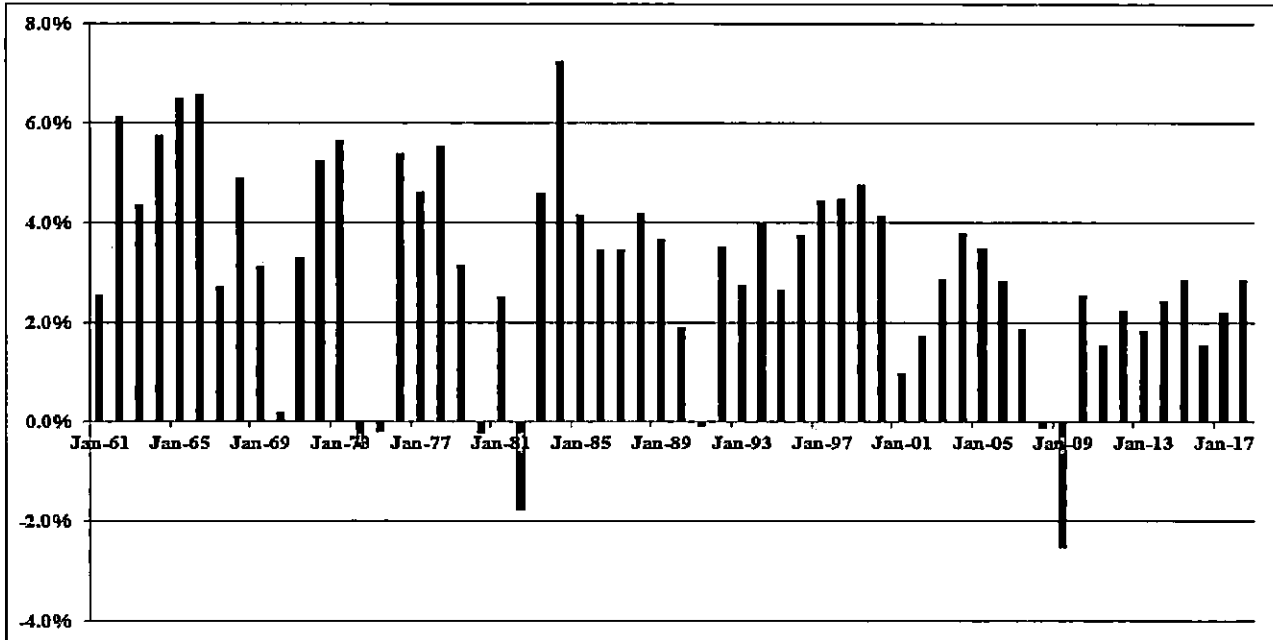
		GDP	S&P 500	S&P 500 EPS	S&P 500 DPS	
1	1960	542.38	58.11	3.10	1.98	
2	1961	562.21	71.55	3.37	2.04	
3	1962	603.92	63.10	3.67	2.15	
4	1963	637.45	75.02	4.13	2.35	
5	1964	684.46	84.75	4.76	2.58	
6	1965	742.29	92.43	5.30	2.83	
7	1966	813.41	80.33	5.41	2.88	
8	1967	859.96	96.47	5.46	2.98	
9	1968	940.65	103.86	5.72	3.04	
10	1969	1017.62	92.06	6.10	3.24	
11	1970	1073.30	92.15	5.51	3.19	
12	1971	1164.85	102.09	5.57	3.16	
13	1972	1279.11	118.05	6.17	3.19	
14	1973	1425.38	97.55	7.96	3.61	
15	1974	1545.24	68.56	9.35	3.72	
16	1975	1684.90	90.19	7.71	3.73	
17	1976	1873.41	107.46	9.75	4.22	
18	1977	2081.83	95.10	10.87	4.86	
19	1978	2351.60	96.11	11.64	5.18	
20	1979	2627.33	107.94	14.55	5.97	
21	1980	2857.31	135.76	14.99	6.44	
22	1981	3207.04	122.55	15.18	6.83	
23	1982	3343.79	140.64	13.82	6.93	
24	1983	3634.04	164.93	13.29	7.12	
25	1984	4037.61	167.24	16.84	7.83	
26	1985	4338.98	211.28	15.68	8.20	
27	1986	4579.63	242.17	14.43	8.19	
28	1987	4855.22	247.08	16.04	9.17	
29	1988	5236.44	277.72	24.12	10.22	
30	1989	5641.58	353.40	24.32	11.73	
31	1990	5963.14	330.22	22.65	12.35	
32	1991	6158.13	417.09	19.30	12.97	
33	1992	6520.33	435.71	20.87	12.64	
34	1993	6858.56	466.45	26.90	12.69	
35	1994	7287.24	459.27	31.75	13.36	
36	1995	7639.75	615.93	37.70	14.17	
37	1996	8073.12	740.74	40.63	14.89	
38	1997	8577.55	970.43	44.09	15.52	
39	1998	9062.82	1229.23	44.27	16.20	
40	1999	9630.66	1469.25	51.68	16.71	
41	2000	10252.35	1320.28	56.13	16.27	
42	2001	10581.82	1148.09	38.85	15.74	
43	2002	10936.42	879.82	46.04	16.08	
44	2003	11458.25	1111.91	54.69	17.88	
45	2004	12213.73	1211.92	67.68	19.41	
46	2005	13036.64	1248.29	76.45	22.38	
47	2006	13814.61	1418.30	87.72	25.05	
48	2007	14451.86	1468.36	82.54	27.73	
49	2008	14712.85	903.25	65.39	28.05	
50	2009	14448.93	1115.10	59.65	22.31	
51	2010	14992.05	1257.64	83.66	23.12	
52	2011	15542.58	1257.60	97.05	26.02	
53	2012	16197.01	1426.19	102.47	30.44	
54	2013	16784.85	1848.36	107.45	36.28	
55	2014	17521.75	2058.90	113.01	39.44	
56	2015	18219.30	2043.94	106.32	43.16	
57	2016	18707.19	2238.83	108.86	45.03	
58	2017	19485.39	2673.61	124.94	49.73	
	2018	20500.64	2506.85	148.34	53.61	Average
	Growth Rates	6.46	6.71	6.89	5.85	6.48

Nominal GDP Growth Rates
Annual Growth Rates - 1961-2018



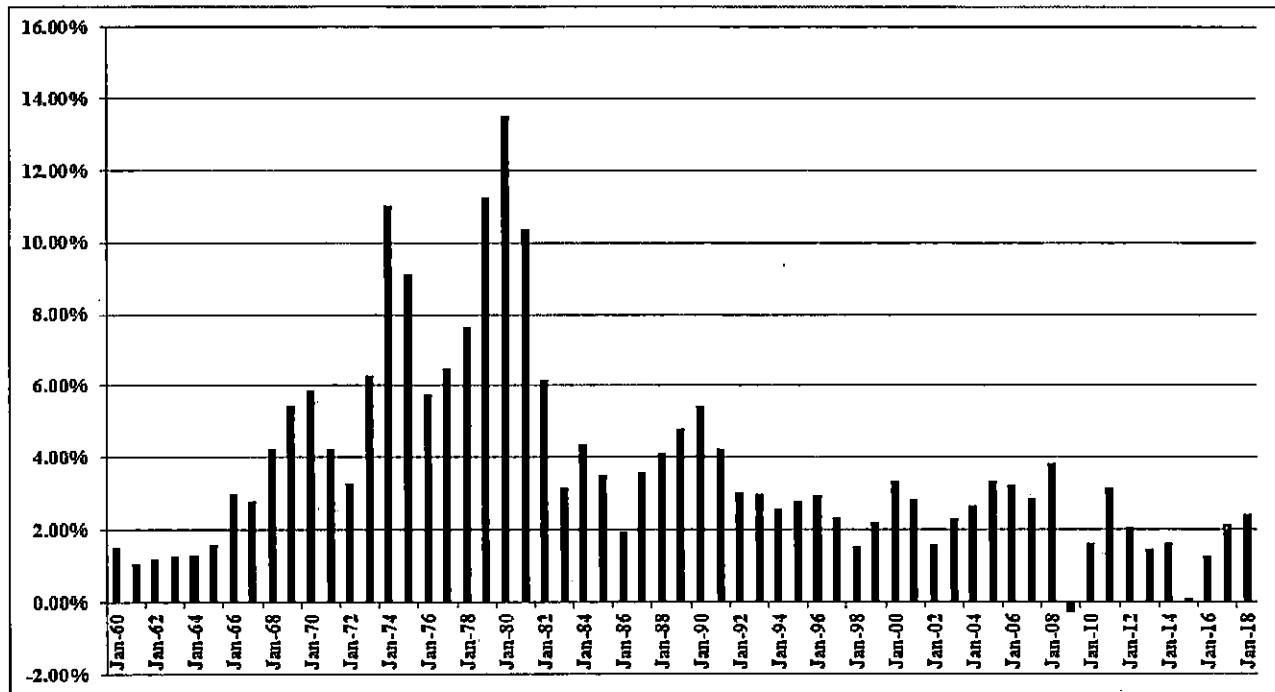
Data Sources: GDPA - <https://fred.stlouisfed.org/series/GDPA>

Annual Real GDP Growth Rates
1961-2018



Data Sources: GDPC1 - <https://fred.stlouisfed.org/series/GDPCA>

Annual Inflation Rates
1961-2018



Data Sources: CPIAUCSL - <https://fred.stlouisfed.org/series/CPIAUCSL>

Panel A
Historic GDP Growth Rates

10-Year Average		3.37%
20-Year Average		4.17%
30-Year Average		4.65%
40-Year Average		5.56%
50-Year Average		6.36%

Calculated using GDP data on Page 1 of Exhibit JRW-10

Panel B
Projected GDP Growth Rates

	Projected Nominal GDP Time Frame Growth Rate	
Congressional Budget Office	2018-2048	4.0%
Survey of Financial Forecasters	Ten Year	4.3%
Social Security Administration	2018-2095	4.4%
Energy Information Administration	2017-2050	4.3%

Sources:

Congressional Budget Office, *The 2018 Long-Term Budget Outlook*, June 1, 2018.

<https://www.cbo.gov/system/files?file=2018-06/53919-2018ltbo.pdf>

U.S. Energy Information Administration, *Annual Energy Outlook 2018*, Table: Macroeconomic Indicators,

<https://www.eia.gov/outlooks/aeo/data/browser/#/?id=18-AEO2018&sourcekey=0>.

Social Security Administration, *2018 Annual Report of the Board of Trustees of the Old-Age,*

Survivors, and Disability Insurance (OASDI) Program, Table VI.G4, p. 211 (June 15, 2018).

<https://www.ssa.gov/oact/tr/2018/lr6g4.html>. The 4.4% represents the compounded growth rate in projected GDP from \$20,307 trillion in 2018 to \$548,108 trillion in 2095.

<https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/>

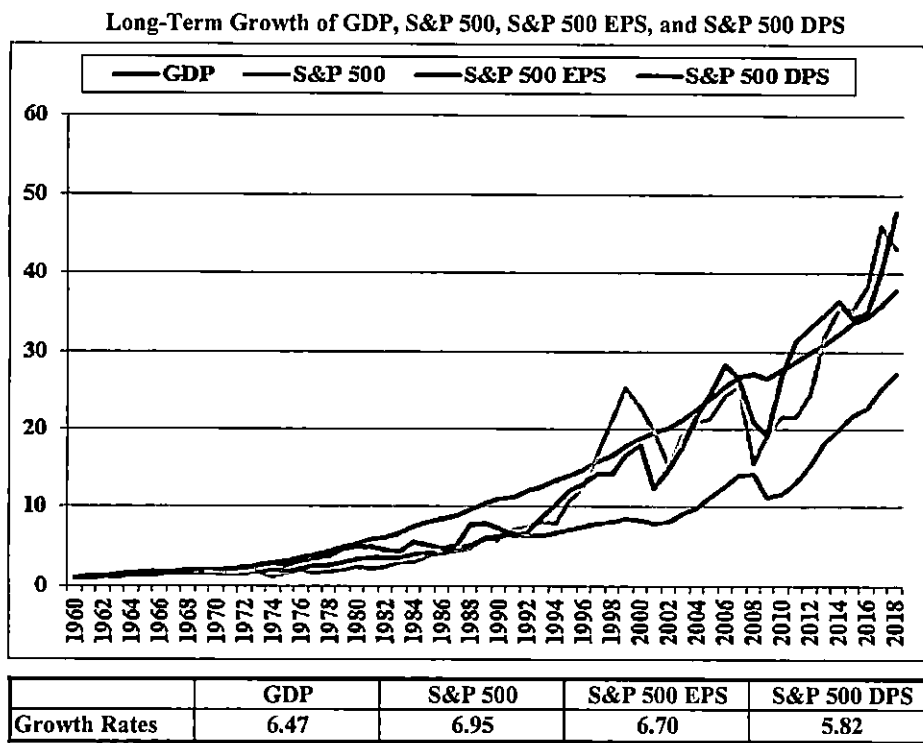


Exhibit JRW-7

Dominion Energy North Carolina
Monthly Dividend YieldsPanel A
Electric Proxy Group*

Company	Annual Dividend	Dividend Yield 30 Day	Dividend Yield 90 Day	Dividend Yield 180 Day
ALLETE, Inc. (NYSE-ALE)	\$2.35	2.75%	2.83%	2.91%
Alliant Energy Corporation (NYSE-LNT)	\$1.42	2.85%	2.95%	3.07%
Ameren Corporation (NYSE-AEE)	\$1.90	2.49%	2.56%	2.65%
American Electric Power Co. (NYSE-AEP)	\$2.68	2.98%	3.08%	3.24%
Avangrid (NYSE-AVG)	\$1.76	3.50%	3.48%	3.51%
CMS Energy Corporation (NYSE-CMS)	\$1.53	2.61%	2.70%	2.81%
Consolidated Edison, Inc. (NYSE-ED)	\$2.96	3.36%	3.42%	3.57%
Duke Energy Corporation (NYSE-DUK)	\$3.78	4.26%	4.27%	4.28%
Edison International (NYSE-EIX)	\$2.45	3.60%	3.84%	4.01%
Entergy Corporation (NYSE-ETR)				
Eversource Energy (NYSE-ES)	\$2.14	2.78%	2.89%	3.01%
Exelon Corp. (NYSE-EXC)				
FirstEnergy Corporation (ASE-FE)				
Hawaiian Electric Industries (NYSE-HE)	\$1.28	2.90%	3.02%	3.19%
IDACORP, Inc. (NYSE-IDA)	\$2.52	2.44%	2.49%	2.54%
MGE Energy, Inc. (NYSE-MGEE)	\$1.35	1.85%	1.94%	2.02%
NextEra Energy Inc. (NYSE-NEE)	\$5.00	2.40%	2.51%	2.63%
NorthWestern Corporation (NYSE-NWE)	\$2.30	3.17%	3.23%	3.39%
OGE Energy Corp. (NYSE-OGE)	\$1.46	3.40%	3.43%	3.51%
Pinnacle West Capital Corp. (NYSE-PNW)	\$2.95	3.12%	3.10%	3.20%
PNM Resources, Inc. (NYSE-PNM)	\$1.16	2.29%	2.40%	2.54%
Portland General Electric Company (NYSE-POR)	\$1.54	2.80%	2.89%	3.03%
PPL Corporation (NYSE-PPL)	\$1.65	5.36%	5.33%	5.36%
SEMPRA Energy (NYSE-SRE)	\$3.87	2.78%	2.91%	3.11%
Southern Company (NYSE-SO)	\$2.48	4.44%	4.59%	4.87%
WEC Energy Group (NYSE-WEC)	\$2.36	2.76%	2.90%	3.06%
Xcel Energy Inc. (NYSE-XEL)	\$1.62	2.67%	2.78%	2.93%
Mean		3.1%	3.1%	3.3%
Median		2.8%	2.9%	3.1%

Data Sources: [http://quote yahoo com](http://quote.yahoo.com), July, 2019

* Entergy, Exelon, and FirstEnergy was excluded from the DCF analysis due to negative projected EPS growth rates

Panel B
Hevert Proxy Group

Company	Annual Dividend	Dividend Yield 30 Day	Dividend Yield 90 Day	Dividend Yield 180 Day
ALLETE, Inc. (NYSE-ALE)	\$2.35	2.75%	2.83%	2.91%
Alliant Energy Corporation (NYSE-LNT)	\$1.42	2.85%	2.95%	3.07%
Ameren Corporation (NYSE-AEE)	\$1.90	2.49%	2.56%	2.65%
American Electric Power Co. (NYSE-AEP)	\$2.68	2.98%	3.08%	3.24%
Avangrid (NYSE-AVG)	\$1.76	3.50%	3.48%	3.51%
Black Hills Corporation (NYSE-BKH)	\$2.02	2.54%	2.65%	2.82%
CMS Energy Corporation (NYSE-CMS)	\$1.53	2.61%	2.70%	2.81%
DTE Energy Company (NYSE-DTE)	\$3.78	2.91%	2.98%	3.09%
Duke Energy Corporation (NYSE-DUK)	\$3.78	4.26%	4.27%	4.28%
Evergy, Inc. (NYSE-EVRG)	\$1.90	3.12%	3.22%	3.26%
Hawaiian Electric Industries (NYSE-HE)	\$1.28	2.90%	3.02%	3.19%
NextEra Energy Inc. (NYSE-NEE)	\$5.00	2.40%	2.51%	2.63%
NorthWestern Corporation (NYSE-NWE)	\$2.30	3.17%	3.23%	3.39%
OGE Energy Corp. (NYSE-OGE)	\$1.46	3.40%	3.43%	3.51%
Otter Tail Corporation (NDQ-OTTR)	\$1.40	2.67%	2.73%	2.79%
Pinnacle West Capital Corp. (NYSE-PNW)	\$2.95	3.12%	3.10%	3.20%
PNM Resources, Inc. (NYSE-PNM)	\$1.16	2.29%	2.40%	2.54%
Portland General Electric Company (NYSE-POR)	\$1.54	2.80%	2.89%	3.03%
Southern Company (NYSE-SO)	\$2.48	4.44%	4.59%	4.87%
WEC Energy Group (NYSE-WEC)	\$2.36	2.76%	2.90%	3.06%
Xcel Energy Inc. (NYSE-XEL)	\$1.62	2.67%	2.78%	2.93%
Mean		3.0%	3.1%	3.2%
Median		2.9%	3.0%	3.1%

Data Sources: [http://quote yahoo com](http://quote.yahoo.com), July, 2019

Exhibit JRW-7

Dominion Energy North Carolina
DCF Equity Cost Growth Rate Measures
Value Line Historic Growth Rates

Panel A
Electric Proxy Group

Company	Value Line Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)	1.0	3.0	5.5	4.0	3.0	5.5
Alliant Energy Corporation (NYSE-LNT)	4.5	7.5	4.0	4.5	7.0	4.5
Ameren Corporation (NYSE-AEE)	0.5	-3.5	-0.5	4.5	2.5	0.5
American Electric Power Co. (NYSE-AEP)	3.0	4.5	4.0	5.0	5.0	3.5
Avangrid (NYSE-AVG)						
CMS Energy Corporation (NYSE-CMS)	10.0	21.5	4.5	7.0	7.0	5.5
Consolidated Edison, Inc. (NYSE-ED)	2.5	2.0	4.0	2.0	2.5	4.0
Duke Energy Corporation (NYSE-DUK)	2.5	7.0	1.0	0.5	3.0	1.5
Edison International (NYSE-EIX)	-3.5	6.5	3.0	-9.0	11.0	3.0
Entergy Corporation (NYSE-ETR)						
Eversource Energy (NYSE-ES)	8.0	9.5	6.5	7.0	8.0	5.0
Exelon Corporation (NYSE-EXC)						
FirstEnergy Corporation (NYSE-FE)						
Hawaiian Electric Industries (NYSE-HE)	5.0		3.0	4.0		3.5
IDACORP, Inc. (NYSE-IDA)	7.0	6.5	5.5	4.0	10.0	5.0
MGE Energy, Inc. (NYSE-MGEE)	4.5	3.0	5.5	3.5	4.0	6.0
Nextera Energy, Inc. (NYSE-NEE)	6.0	9.0	8.5	6.0	10.5	9.5
NorthWestern Corporation (NYSE-NWE)	8.5	5.0	5.5	7.0	7.0	8.0
OGE Energy Corp. (NYSE-OGE)	4.0	6.5	7.5	1.0	9.5	6.0
Pinnacle West Capital Corp. (NYSE-PNW)	4.5	2.5	2.5	5.0	3.0	4.5
PNM Resources, Inc. (NYSE-PNM)	7.0	2.5		6.0	11.0	1.0
Portland General Electric Company (NYSE-POR)	3.5	4.5	2.5	4.0	4.5	3.5
PPL Corporation (NYSE-PPL)		2.5	1.0	-0.5	2.0	-4.0
SEMPRA Energy (NYSE-SRE)	1.0	10.0	5.5	2.0	7.5	4.0
Southern Company (NYSE-SO)	3.0	3.5	4.0	2.5	3.5	3.0
WEC Energy Group (NYSE-WEC)	8.5	15.5	8.5	6.0	11.0	10.5
Xcel Energy Inc. (NYSE-XEL)	5.5	4.5	4.5	5.0	6.0	4.5
Mean	4.4	6.1	4.4	3.5	6.3	4.3
Median	4.5	4.8	4.3	4.0	6.5	4.5
Average of Median Figures =				4.8		

Data Source: Value Line Investment Survey.

* Entergy, Exelon, and FirstEnergy was excluded from the DCF analysis due to negative projected EPS growth rates

Panel B
Hevert Proxy Group

Company	Value Line Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)	1.0	3.0	5.5	4.0	3.0	5.5
Alliant Energy Corporation (NYSE-LNT)	4.5	7.5	4.0	4.5	7.0	4.5
Ameren Corporation (NYSE-AEE)	0.5	-3.5	-0.5	4.5	2.5	0.5
American Electric Power Co. (NYSE-AEP)	3.0	4.5	4.0	5.0	5.0	3.5
Avangrid (NYSE-AVG)						
Black Hills Corporation (NYSE-BKH)	6.5	3.0	2.5	11.0	4.0	3.0
CMS Energy Corporation (NYSE-CMS)	10.0	21.5	4.5	7.0	7.0	5.5
DTE Energy Company (NYSE-DTE)	8.0	4.5	4.0	8.0	6.5	4.5
Duke Energy Corporation (NYSE-DUK)	2.5	10.0	0.5	0.5	2.5	2.0
Evergy (NYSE-EVRG)						
Hawaiian Electric Industries (NYSE-HE)	5.0		3.0	4.0		3.5
Nextera Energy, Inc. (NYSE-NEE)	6.0	9.0	8.5	6.0	10.5	9.5
NorthWestern Corporation (NYSE-NWE)	8.5	5.0	5.5	7.0	7.0	8.0
OGE Energy Corp. (NYSE-OGE)	4.0	6.5	7.5	1.0	9.5	6.0
Otter Tail Corporation (NYSE-OTTR)	2.0	1.0		14.0	1.5	3.5
Pinnacle West Capital Corp. (NYSE-PNW)	4.5	2.5	2.5	5.0	3.0	4.5
PNM Resources, Inc. (NYSE-PNM)	7.0	2.5		6.0	11.0	1.0
Portland General Electric Company (NYSE-POR)	3.5	4.5	2.5	4.0	4.5	3.5
Southern Company (NYSE-SO)	3.0	3.5	4.0	2.5	3.5	3.0
WEC Energy Group (NYSE-WEC)	7.5	15.5	8.5	5.5	14.0	10.5
Xcel Energy Inc. (NYSE-XEL)	5.5	4.5	4.5	5.0	6.0	4.5
Mean	4.9	5.8	4.2	5.5	6.0	4.6
Median	4.5	4.5	4.0	5.0	5.5	4.5
Average of Median Figures =				4.7		

Data Source: Value Line Investment Survey.

Exhibit JRW-7

Dominion Energy North Carolina
DCF Equity Cost Growth Rate Measures
Value Line Projected Growth Rates

Panel A
Electric Proxy Group

Company	Value Line			Value Line		
	Projected Growth			Sustainable Growth		
	Est'd. '16-'18 to '22-'24			Return on Equity	Retention Rate	Internal Growth
	Earnings	Dividends	Book Value			
ALLETE, Inc. (NYSE-ALE)	5.0	5.0	3.0	9.0%	35.0%	3.2%
Alliant Energy Corporation (NYSE-LNT)	6.5	5.5	7.5	10.0%	38.0%	3.8%
Ameren Corporation (NYSE-AEE)	6.5	6.0	5.0	10.5%	41.0%	4.3%
American Electric Power Co. (NYSE-AEP)	4.0	6.0	4.5	10.5%	30.0%	3.2%
Avangrid (NYSE-AVG)	10.0	3.0	1.5	6.0%	35.0%	2.1%
CMS Energy Corporation (NYSE-CMS)	7.0	7.0	7.5	14.0%	41.0%	5.7%
Consolidated Edison, Inc. (NYSE-ED)	3.0	3.5	3.0	8.5%	34.0%	2.9%
Duke Energy Corporation (NYSE-DUK)	6.0	3.0	2.5	8.5%	28.0%	2.4%
Edison International (NYSE-EIX)	NMF	3.5	4.5	11.5%	47.0%	5.4%
Entergy Corporation (NYSE-ETR)						
Eversource Energy (NYSE-ES)	5.5	5.5	5.0	9.0%	37.0%	3.3%
Exelon Corporation (NYSE-EXC)						
FirstEnergy Corporation (NYSE-FE)						
Hawaiian Electric Industries (NYSE-HEC)	4.5	3.0	4.0	10.0%	40.0%	4.0%
IDACORP, Inc. (NYSE-IDA)	3.5	6.0	4.0	9.5%	40.0%	3.8%
MGE Energy, Inc. (NYSE-MGEE)	9.0	4.5	6.0	11.5%	56.0%	6.4%
Nextera Energy, Inc. (NYSE-NEE)	10.0	10.0	5.5	13.5%	39.0%	5.3%
NorthWestern Corporation (NYSE-NWE)	3.0	4.5	3.0	9.0%	34.0%	3.1%
OGE Energy Corp. (NYSE-OGE)	6.5	7.5	3.5	11.5%	28.0%	3.2%
Pinnacle West Capital Corp. (NYSE-PNW)	5.5	6.0	4.0	10.5%	36.0%	3.8%
PNM Resources, Inc. (NYSE-PNM)	7.0	7.0	4.0	10.0%	43.0%	4.3%
Portland General Electric Company (NYSE-POR)	4.5	6.5	3.0	9.0%	34.0%	3.1%
PPL Corporation (NYSE-PPL)	1.5	2.0	6.0	13.0%	35.0%	4.6%
SEMPRA Energy (NYSE-SRE)	11.0	8.0	6.5	12.0%	42.0%	5.0%
Southern Company (NYSE-SO)	3.5	3.0	3.5	12.5%	27.0%	3.4%
WEC Energy Group (NYSE-WEC)	6.0	6.0	3.5	12.0%	33.0%	4.0%
Xcel Energy Inc. (NYSE-XEL)	5.5	6.0	4.5	11.0%	38.0%	4.2%
Mean	5.8	5.3	4.4	10.5%	37.1%	3.9%
Median	5.5	5.8	4.0	10.5%	36.5%	3.8%
Average of Median Figures =		5.1			Median =	3.8%

* 'Est'd. '16-'17 to '22-'24' is the estimated growth rate from the base period 2016 to 2018 until the future period 2022 to 2024.

Data Source: Value Line Investment Survey.

* Entergy, Exelon, and FirstEnergy was excluded from the DCF analysis due to negative projected EPS growth rates

Panel B
Hevert Proxy Group

Company	Value Line			Value Line		
	Projected Growth			Sustainable Growth		
	Est'd. '16-'18 to '22-'24			Return on Equity	Retention Rate	Internal Growth
	Earnings	Dividends	Book Value			
ALLETE, Inc. (NYSE-ALE)	5.0	5.0	3.0	9.0%	35.0%	3.2%
Alliant Energy Corporation (NYSE-LNT)	6.5	5.5	7.5	10.0%	38.0%	3.8%
Ameren Corporation (NYSE-AEE)	6.5	6.0	5.0	10.5%	41.0%	4.3%
American Electric Power Co. (NYSE-AEP)	4.0	6.0	4.5	10.5%	30.0%	3.2%
Avangrid (NYSE-AVG)	10.0	3.0	1.5	6.0%	35.0%	2.1%
Black Hills Corporation (NYSE-BKH)	5.0	6.5	5.5	9.5%	39.0%	3.7%
CMS Energy Corporation (NYSE-CMS)	7.0	7.0	7.5	14.0%	41.0%	5.7%
DTE Energy Company (NYSE-DTE)	5.5	6.0	5.5	10.5%	37.0%	3.9%
Duke Energy Corporation (NYSE-DUK)	6.0	3.0	2.5	8.5%	28.0%	2.4%
Evergy (NYSE-EVRG)				8.5%	31.0%	2.6%
Hawaiian Electric Industries (NYSE-HE)	3.5	2.0	4.0	9.5%	40.0%	3.8%
Nextera Energy, Inc. (NYSE-NEE)	10.0	10.0	5.5	13.5%	39.0%	5.3%
NorthWestern Corporation (NYSE-NWE)	3.0	4.5	3.0	9.0%	34.0%	3.1%
OGE Energy Corp. (NYSE-OGE)	6.5	7.5	3.5	11.5%	28.0%	3.2%
Otter Tail Corporation (NYSE-OTTR)	5.0	4.0	4.5	10.5%	34.0%	3.6%
Pinnacle West Capital Corp. (NYSE-PNW)	5.5	6.0	4.0	10.5%	36.0%	3.8%
PNM Resources, Inc. (NYSE-PNM)	7.0	7.0	4.0	10.0%	43.0%	4.3%
Portland General Electric Company (NYSE-POR)	4.5	6.5	3.0	9.0%	34.0%	3.1%
Southern Company (NYSE-SO)	3.5	3.0	3.5	12.5%	27.0%	3.4%
WEC Energy Group (NYSE-WEC)	6.0	6.0	3.5	12.0%	33.0%	4.0%
Xcel Energy Inc. (NYSE-XEL)	5.5	6.0	4.5	11.0%	38.0%	4.2%
Mean	5.8	5.5	4.3	10.3%	35.3%	3.6%
Median	5.5	6.0	4.0	10.5%	35.0%	3.7%
Average of Median Figures =		5.2			Median =	3.7%

* 'Est'd. '16-'17 to '22-'24' is the estimated growth rate from the base period 2016 to 2018 until the future period 2022 to 2024.

Data Source: Value Line Investment Survey.

Exhibit JRW-7

Dominion Energy North Carolina
DCF Equity Cost Growth Rate Measures
Analysts Projected EPS Growth Rate Estimates

Panel A

Electric Proxy Group

Company	Yahoo	Reuters	Zacks	Mean
ALLETE, Inc. (NYSE-ALE)	6.0%	NA	7.2%	6.6%
Alliant Energy Corporation (NYSE-LNT)	5.0%	5.0%	5.5%	5.2%
Ameren Corporation (NYSE-AEE)	5.0%	5.0%	6.5%	5.5%
American Electric Power Co. (NYSE-AEP)	6.1%	6.1%	5.7%	6.0%
Avangrid (NYSE-AVG)	6.6%	7.3%	7.5%	7.1%
CMS Energy Corporation (NYSE-CMS)	7.1%	7.2%	6.4%	6.9%
Consolidated Edison, Inc. (NYSE-ED)	3.4%	3.4%	2.0%	3.0%
Duke Energy Corporation (NYSE-DUK)	7.2%	7.2%	4.9%	6.4%
Edison International (NYSE-EIX)	5.9%	3.8%	5.4%	5.0%
Entergy Corporation (NYSE-ETR)	-1.9%	-1.9%	7.0%	
Eversource Energy (NYSE-ES)	5.6%	5.6%	5.6%	5.6%
Exelon Corporation (NYSE-EXC)	-1.9%	-0.3%	3.6%	
FirstEnergy Corporation (NYSE-FE)	-6.6%	NA	6.0%	
Hawaiian Electric Industries (NYSE-HE)	6.1%	6.1%	5.6%	5.9%
IDACORP, Inc. (NYSE-IDA)	2.4%	2.4%	3.8%	2.9%
MGE Energy, Inc. (NYSE-MGEE)	4.0%	NA	NA	4.0%
Nextera Energy, Inc. (NYSE-NEE)	8.0%	7.0%	8.0%	7.7%
NorthWestern Corporation (NYSE-NWE)	3.5%	3.6%	3.0%	3.4%
OGE Energy Corp. (NYSE-OGE)	3.8%	3.8%	4.6%	4.1%
Pinnacle West Capital Corp. (NYSE-PNW)	5.3%	5.3%	5.1%	5.3%
PNM Resources, Inc. (NYSE-PNM)	6.3%	6.3%	5.5%	6.0%
Portland General Electric Company (NYSE-POR)	5.2%	5.2%	4.9%	5.1%
PPL Corporation (NYSE-PPL)	0.6%	NA	N/A	0.6%
SEMPRA Energy (NYSE-SRE)	8.2%	8.2%	7.7%	8.0%
Southern Company (NYSE-SO)	2.2%	3.4%	4.5%	3.4%
WEC Energy Group (NYSE-WEC)	5.9%	5.9%	5.9%	5.9%
Xcel Energy Inc. (NYSE-XEL)	5.8%	5.8%	5.6%	5.7%
Mean	4.2%	4.8%	5.5%	5.2%
Median	5.3%	5.3%	5.6%	5.5%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, July, 2019

* Entergy, Exelon, and FirstEnergy was excluded from the DCF analysis due to negative projected EPS growth rates

Panel B

Hevert Proxy Group

Company	Yahoo	Reuters	Zacks	Mean
ALLETE, Inc. (NYSE-ALE)	6.0%	NA	7.2%	6.6%
Alliant Energy Corporation (NYSE-LNT)	5.0%	5.0%	5.5%	5.2%
Ameren Corporation (NYSE-AEE)	5.0%	5.0%	6.5%	5.5%
American Electric Power Co. (NYSE-AEP)	6.1%	6.1%	5.7%	6.0%
Avangrid (NYSE-AVG)	6.6%	7.3%	7.5%	7.1%
Black Hills Corporation (NYSE-BKH)	3.0%	3.0%	4.3%	3.4%
CMS Energy Corporation (NYSE-CMS)	7.1%	7.2%	6.4%	6.9%
DTE Energy Company (NYSE-DTE)	7.1%	7.2%	6.4%	6.9%
Duke Energy Corporation (NYSE-DUK)	7.2%	7.2%	4.9%	6.4%
Evergy (NYSE-EVRG)	6.2%	6.2%	6.6%	6.3%
Hawaiian Electric Industries (NYSE-HE)	6.1%	6.1%	5.6%	5.9%
Nextera Energy, Inc. (NYSE-NEE)	8.0%	7.0%	8.0%	7.7%
NorthWestern Corporation (NYSE-NWE)	3.5%	3.6%	3.0%	3.4%
OGE Energy Corp. (NYSE-OGE)	3.8%	3.8%	4.6%	4.1%
Otter Tail Corporation (NDQ-OTTR)	9.0%	NA	7.0%	8.0%
Pinnacle West Capital Corp. (NYSE-PNW)	5.3%	5.3%	5.1%	5.3%
PNM Resources, Inc. (NYSE-PNM)	6.3%	6.3%	5.5%	6.0%
Portland General Electric Company (NYSE-POR)	5.2%	5.2%	4.9%	5.1%
Southern Company (NYSE-SO)	2.2%	3.4%	4.5%	3.4%
WEC Energy Group (NYSE-WEC)	5.9%	5.9%	5.9%	5.9%
Xcel Energy Inc. (NYSE-XEL)	5.8%	5.8%	5.6%	5.7%
Mean	5.7%	5.6%	5.7%	5.7%
Median	6.0%	5.9%	5.6%	5.9%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, July, 2019

Exhibit JRW-7

Dominion Energy North Carolina
DCF Growth Rate Indicators

Electric and Hevert Proxy Groups

Growth Rate Indicator	Electric Proxy Group	Hevert Proxy Group
Historic <i>Value Line</i> Growth in EPS, DPS, and BVPS	4.8%	4.7%
Projected <i>Value Line</i> Growth in EPS, DPS, and BVPS	5.1%	5.2%
Sustainable Growth ROE * Retention Rate	3.8%	3.7%
Projected EPS Growth from Yahoo, Zacks, and Reuters - Mean/Median	5.2%/5.5%	5.7%/5.9%

Exhibit JRW-6

**DCF Model
Consensus Earnings Estimates
Consolidated Edison. (ED)**

www.reuters.com

7/26/2019

Line	Date	# of Estimates	Mean	High	Low
1	Quarter Ending Sep-19	12	1.60	1.70	1.53
2	Quarter Ending Dec-19	12	0.77	0.85	0.66
3	Year Ending Dec-19	18	4.35	4.39	4.30
4	Year Ending Dec-20	18	4.57	4.73	4.47
5	LT Growth Rate (%)	4	3.44	4.89	2.00

[illegible]

Exhibit JRW-2
Dominion Energy North Carolina
Value Line Risk Metrics

Panel A
Electric Proxy Group

Company	Beta	Financial Strength	Safety	Earnings Predictability	Stock Price Stability
ALLETE, Inc. (NYSE-ALE)	0.65	A	2	85	95
Alliant Energy Corporation (NYSE-LNT)	0.60	A	2	85	100
Ameren Corporation (NYSE-AEE)	0.60	A	2	80	95
American Electric Power Co. (NYSE-AEP)	0.55	A+	1	85	100
AVANGRID, Inc. (NYSE-AGR)	0.40	B++	2	NMF	95
CMS Energy Corporation (NYSE-CMS)	0.55	B++	2	90	100
Consolidated Edison, Inc. (NYSE-ED)	0.45	A+	1	95	100
Duke Energy Corporation (NYSE-DUK)	0.50	A	2	85	100
Edison International (NYSE-EIX)	0.60	B+	3	15	85
Entergy Corporation (NYSE-ETR)	0.60	B++	3	60	95
Eversource Energy (NYSE-ES)	0.60	A	1	95	100
Exelon Corporation (NYSE-EXC)	0.70	B++	3	55	90
FirstEnergy Corporation (NYSE-FE)	0.65	B++	2	40	90
Hawaiian Electric Industries (NYSE-HEC)	0.55	A	2	60	100
IDACORP, Inc. (NYSE-IDA)	0.60	A	2	95	95
MGE Energy, Inc. (NYSE-MGEE)	0.55	A	1	95	85
NextEra Energy, Inc. (NYSE-NEE)	0.60	A+	1	70	100
NorthWestern Corporation (NYSE-NWE)	0.60	B++	2	85	95
OGE Energy Corp. (NYSE-OGE)	0.80	A	2	80	95
Pinnacle West Capital Corp. (NYSE-PNW)	0.55	A+	1	95	100
PNM Resources, Inc. (NYSE-PNM)	0.60	B+	3	75	85
Portland General Electric Company (NYSE-POR)	0.60	B++	2	85	95
PPL Corporation (NYSE-PPL)	0.70	B++	2	70	95
Sempra Energy (NYSE-SRE)	0.75	A	2	75	95
Southern Company (NYSE-SO)	0.50	A	2	90	100
WEC Energy Group (NYSE-WEC)	0.50	A+	1	90	95
Xcel Energy Inc. (NYSE-XEL)	0.50	A+	1	100	100
Mean	0.59	A	1.9	78	96

Data Source: Value Line Investment Survey, 2019.

Panel B
Hevert Proxy Group

Company	Beta	Financial Strength	Safety	Earnings Predictability	Stock Price Stability
ALLETE, Inc. (NYSE-ALE)	0.65	A	2	85	95
Alliant Energy Corporation (NYSE-LNT)	0.60	A	2	85	95
Ameren Corporation (NYSE-AEE)	0.60	A	2	80	95
American Electric Power Co. (NYSE-AEP)	0.55	A+	1	85	100
AVANGRID, Inc. (NYSE-AGR)	0.40	B++	2	NMF	95
Black Hills Corporation (NYSE-BKH)	0.75	A	2	55	80
CMS Energy Corporation (NYSE-CMS)	0.55	B++	2	90	100
DTE Energy Company (NYSE-DTE)	0.55	B++	2	85	100
Duke Energy Corporation (NYSE-DUK)	0.45	A	2	85	100
Energy (NYSE:EVRG)	NMF	B++	2	NMF	NMF
Hawaiian Electric Industries (NYSE-HEC)	0.55	A	2	60	100
NextEra Energy, Inc. (NYSE-NEE)	0.60	A+	1	70	100
NorthWestern Corporation (NYSE-NWE)	0.60	B++	2	85	95
OGE Energy Corp. (NYSE-OGE)	0.80	A	2	80	95
Otter Tail Corporation (NDQ-OTTR)	0.70	A	2	60	90
Pinnacle West Capital Corp. (NYSE-PNW)	0.55	A+	1	95	100
PNM Resources, Inc. (NYSE-PNM)	0.60	B+	3	75	85
Portland General Electric Company (NYSE-POR)	0.60	B++	2	85	95
Southern Company (NYSE-SO)	0.50	A	2	90	100
WEC Energy Group (NYSE-WEC)	0.50	A+	1	90	95
Xcel Energy Inc. (NYSE-XEL)	0.50	A+	1	100	100
Mean	0.58	A	1.8	81	96

Data Source: Value Line Investment Survey, 2019.

***Value Line* Risk Metrics**

Beta

A relative measure of the historical sensitivity of a stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. Betas are adjusted for their long-term tendency to converge toward 1.00.

Financial Strength

A relative measure of the companies reviewed by *Value Line*. The relative ratings range from A++ (strongest) down to C (weakest).

Safety Rank

A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other *Value Line* indexes the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

Earnings Predictability

A measure of the reliability of an earnings forecast. Earnings Predictability is based upon the stability of year-to-year comparisons, with recent years being weighted more heavily than earlier ones. The most reliable forecasts tend to be those with the highest rating (100); the least reliable, the lowest (5). The earnings stability is derived from the standard deviation of percentage changes in quarterly earnings over an eight-year period. Special adjustments are made for comparisons around zero and from plus to minus.

Stock Price Stability

A measure of the stability of a stock's price. It includes sensitivity to the market (see Beta as well as the stock's inherent volatility. *Value Line's* Stability ratings range from 1 (highest) to 5 (lowest).

II, A

Docket No. E-22, SUB 562

Exhibit JRW-3

Capital Structure Ratios and Debt Cost Rates

Page 1 of 1

Exhibit JRW-3

**Dominion Energy North Carolina
Capital Structure Ratios and Debt Cost Rates**

Panel A - DENC's Proposed Capital Structure and Debt Cost Rates

	Percent of Total	Cost
Long-Term Debt	46.35%	4.44%
Common Equity	53.65%	
Total Capital	100.00%	

Panel B - Dominion Energy's Capital Structure Ratios - 12-31-18

	12/31/2018	Percent with Short-Term Debt	Percent without Short-Term Debt
Short-Term Debt	\$ 3,650,000	6.6%	0.0%
Long-Term Debt	\$ 31,260,000.00	56.8%	60.9%
Common Equity	\$ 20,107,000.00	36.5%	39.1%
Total Capital	\$ 55,017,000.00	100.0%	100.00%

Panel C Staff's Capital Structure Ratios and Debt Cost Rates

	DENC Proposed	Adjustment	Staff Proposed	Cost
Long-Term Debt	46.35%	1.078725	50.00%	4.44%
Common Equity	53.65%	0.931984	50.00%	
Total Capital	100.00%		100.00%	

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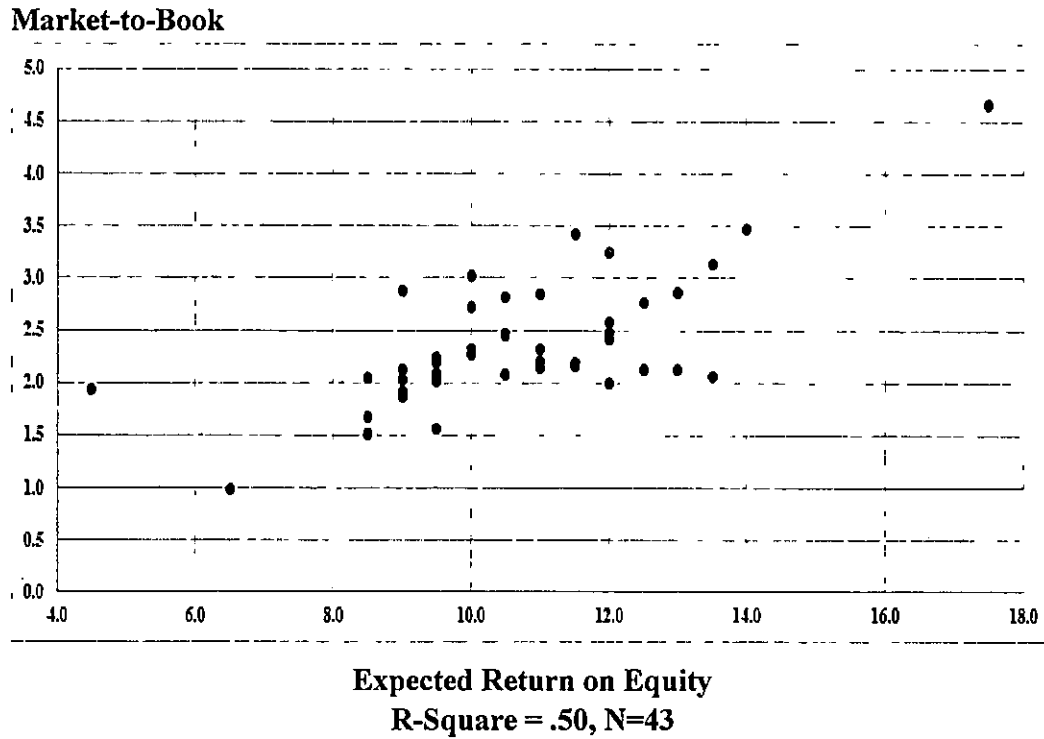
Docket No. E-22, SUB 562

Exhibit JRW-4

The Relationship Between Expected ROE and Market-to-Book Ratios

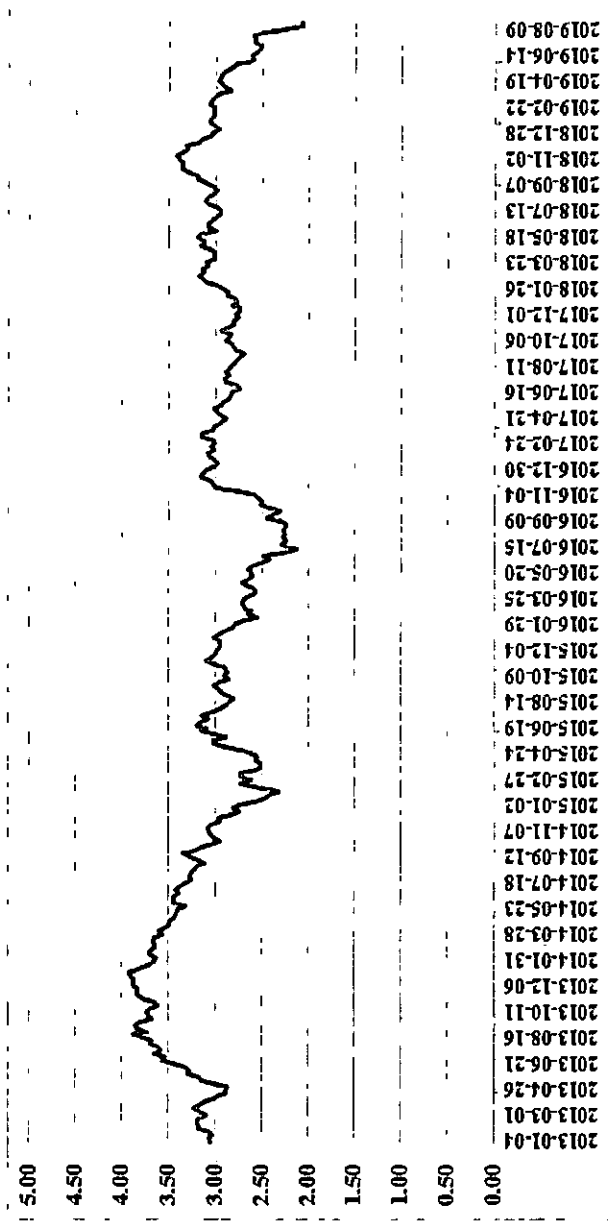
Page 1 of 1

Exhibit JRW-4
Electric Utilities and Gas Distribution Companies



I/A

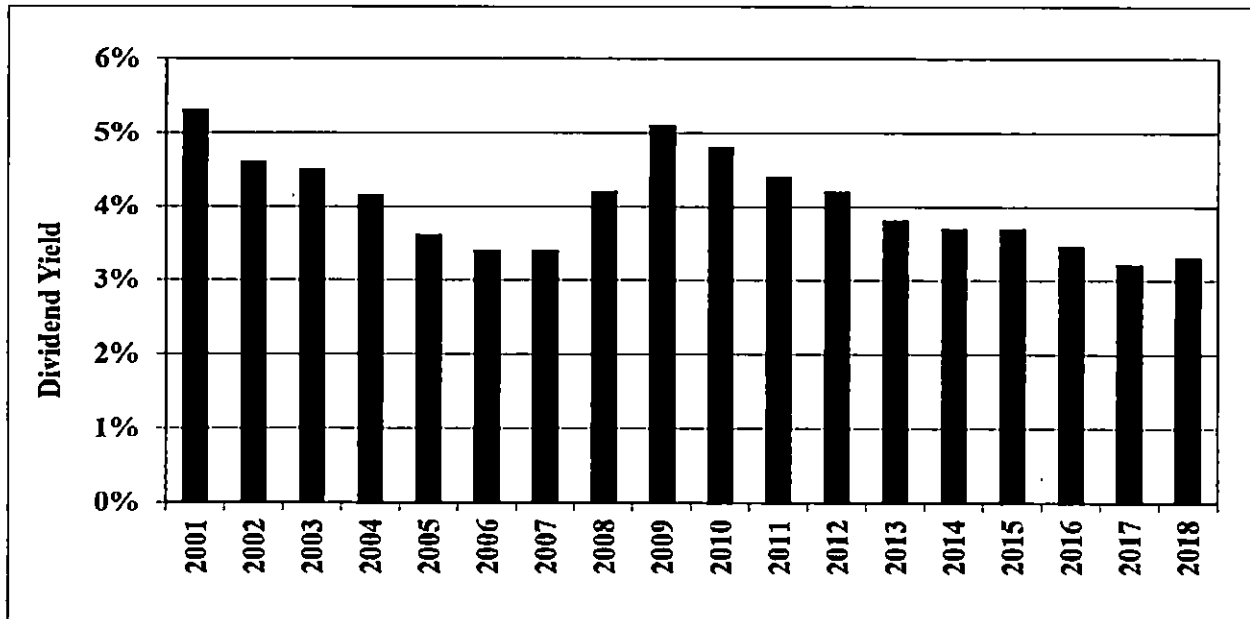
Exhibit JRW-5
Long-Term 'A' Rated Public Utility Bonds



Data Source: Mergent Bond Record

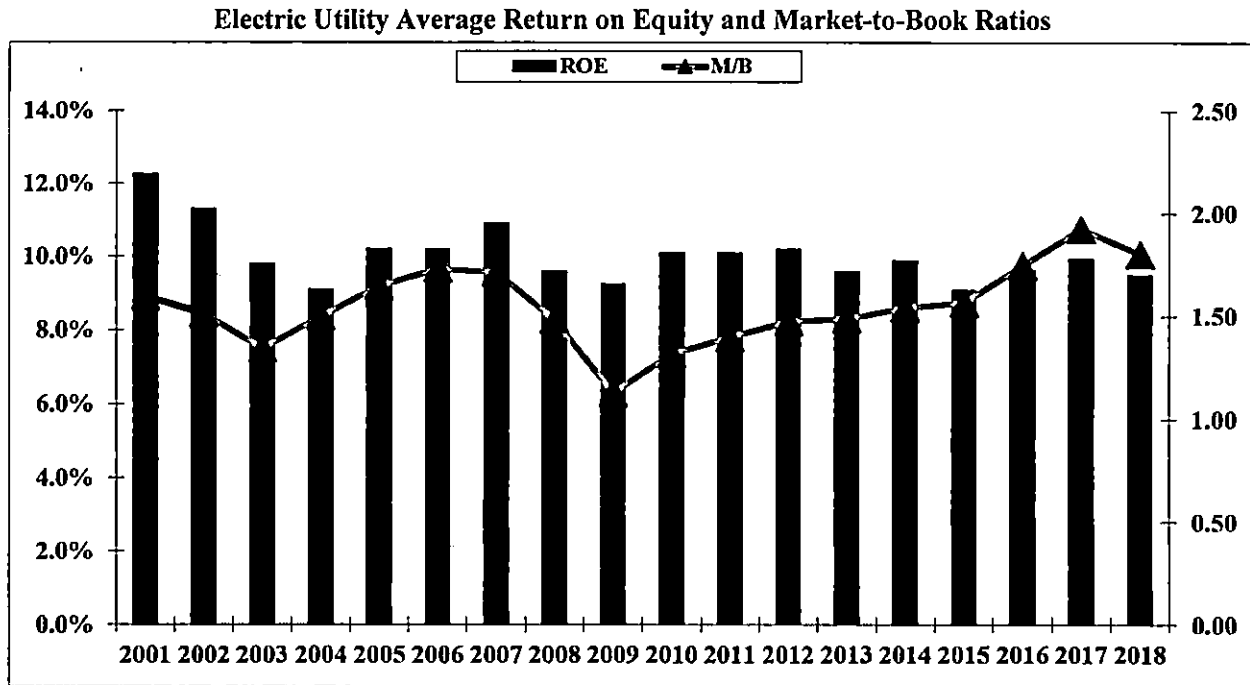
Exhibit JRW-5

Electric Utility Average Dividend Yield



Data Source: *Value Line Investment Survey*.

Exhibit JRW-5



Data Source: Value Line Investment Survey.

Exhibit JRW-5
Industry Average Betas*
Value Line Investment Survey Betas**
22-Jan-19

Rank	Industry	Beta	Rank	Industry	Beta	Rank	Industry	Beta
1	Petroleum (Producing)	1.71	34	Telecom. Equipment	1.15	67	Medical Services	1.01
2	Metals & Mining (Div.)	1.64	35	Internet	1.15	68	Recreation	1.01
3	Natural Gas (Div.)	1.63	36	Financial Svcs. (Div.)	1.15	69	IT Services	1.01
4	Oilfield Svcs/Equip.	1.61	37	Retail (Hardlines)	1.14	70	Med Supp Non-Invasive	0.99
5	Maritime	1.51	38	Semiconductor Equip	1.14	71	Telecom. Services	0.99
6	Steel	1.49	39	Entertainment Tech	1.13	72	Retail Store	0.98
7	Oil/Gas Distribution	1.40	40	Publishing	1.13	73	Pharmacy Services	0.98
8	Metal Fabricating	1.37	41	Computer Software	1.13	74	Information Services	0.97
9	Chemical (Specialty)	1.34	42	Paper/Forest Products	1.13	75	Investment Co.(Foreign)	0.96
10	Chemical (Diversified)	1.33	43	Precision Instrument	1.12	76	Healthcare Information	0.96
11	Pipeline MLPs	1.33	44	Public/Private Equity	1.12	77	Funeral Services	0.95
12	Heavy Truck & Equip	1.31	45	Retail Automotive	1.12	78	Med Supp Invasive	0.95
13	Chemical (Basic)	1.30	46	Power	1.12	79	Reinsurance	0.92
14	Building Materials	1.30	47	Wireless Networking	1.12	80	Environmental	0.91
15	Petroleum (Integrated)	1.30	48	Retail Building Supply	1.11	81	Cable TV	0.90
16	Homebuilding	1.28	49	Bank (Midwest)	1.11	82	Insurance (Prop/Cas.)	0.90
17	Railroad	1.27	50	Packaging & Container	1.11	83	Thrift	0.89
18	Auto Parts	1.27	51	Furn/Home Furnishings	1.11	84	Restaurant	0.88
19	Biotechnology	1.27	52	Human Resources	1.10	85	Tobacco	0.88
20	Engineering & Const	1.25	53	Drug	1.10	86	Household Products	0.86
21	Office Equip/Supplies	1.24	54	Advertising	1.10	87	Investment Co.	0.85
22	Hotel/Gaming	1.24	55	Shoe	1.09	88	Beverage	0.83
23	Automotive	1.24	56	Bank	1.09	89	Food Processing	0.82
24	Insurance (Life)	1.24	57	Newspaper	1.08	90	R.E.I.T.	0.82
25	Semiconductor	1.21	58	Toiletries/Cosmetics	1.08	91	Precious Metals	0.82
26	Machinery	1.20	59	Entertainment	1.07	92	Retail/Wholesale Food	0.80
27	Air Transport	1.20	60	Telecom. Utility	1.07	93	Water Utility	0.70
28	Electrical Equipment	1.20	61	Foreign Electronics	1.07	94	Natural Gas Utility	0.67
29	Electronics	1.20	62	Aerospace/Defense	1.05	95	Electric Util. (Central)	0.63
30	Trucking	1.19	63	Industrial Services	1.05	96	Electric Utility (West)	0.62
31	E-Commerce	1.18	64	Apparel	1.05	97	Electric Utility (East)	0.55
32	Computers/Peripherals	1.16	65	Educational Services	1.03			
33	Diversified Co.	1.16	66	Retail (Softlines)	1.02		Mean	1.10

* Industry averages for 97 industries using Value Line's database of 1,710 companies.

** Value Line computes betas using monthly returns regressed against the New York Stock Exchange Index for five years.

These betas are then adjusted as follows: VL Beta = $\{[(2/3) * \text{Regressed Beta}] + [(1/3) * (1.0)]\}$ to account to tendency for Betas to regress toward average of 1.0. See M. Blume, "On the Assessment of Risk," *Journal of Finance*, March 1971.

II, A

Public Staff - D. Williamson Exhibit #5
Docket No. E-22, Sub 562

	Amount	Organization
	\$ 26,200,000	The Conservation Fund
	\$ 1,500,000	Chickahominey Tribe donation
	\$ 25,000,000	Virginia Dept of Conservation and Recreation
	\$ 4,205,000	Virginia Dept of Game and Inland Fisheries
	\$ 15,595,000	Virginia Environmental Endowment
	\$ 12,500,000	Virginia Land Conservation Foundation
A	\$ 85,000,000	
	\$ 4,500,000	Pamunkey Indian Tribe donation
	\$ 500,000	Pamunkey Indian Tribe land donation
	\$ 400,000	Pamunkey Indian Tribe road donation
B	\$ 5,400,000	
A+B	\$ 90,400,000	Total

(Filed under seal)

IRA

Public Staff – D. Williamson Exhibit #6
Docket No. E-22, Sub 562

Williamson Confidential Exhibit 6 (Redacted)

*pg 1 of 84pgs
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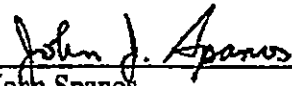
Dominion Energy North Carolina
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
As of December 31, 2016

Account	Description	12/31/16 Plant in Service	DENC Proposal		Public Staff Proposal		
			Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from DENC
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)=(G)-(E)
<u>Steam Production Plant</u>							
<u>Bremo Unit 3</u>							
311.00	Structures and Improvements	3,086,946	1.18%	36,453	1.18%	36,453	0
312.00	Boiler Plant Equipment	19,408,240	3.95%	766,232	3.95%	766,232	0
314.00	Turbogenerator Units	11,095,013	2.08%	230,383	2.08%	230,383	0
315.00	Accessory Electric Equipment	4,199,835	2.48%	104,237	2.48%	104,237	0
316.00	Miscellaneous Power Plant Equip	208,423	2.06%	4,298	2.06%	4,298	0
Total Bremo Unit 3		37,998,456	3.00%	1,141,603	3.00%	1,141,603	0
<u>Bremo Unit 4</u>							
311.00	Structures and Improvements	2,949,841	1.24%	36,653	1.24%	36,653	0
312.00	Boiler Plant Equipment	35,290,059	3.40%	1,200,674	3.40%	1,200,674	0
314.00	Turbogenerator Units	15,482,529	2.11%	326,921	2.11%	326,921	0
315.00	Accessory Electric Equipment	3,361,856	2.86%	96,116	2.86%	96,116	0
316.00	Miscellaneous Power Plant Equip	135,543	1.93%	2,618	1.93%	2,618	0
Total Bremo Unit 4		57,219,828	2.91%	1,662,982	2.91%	1,662,982	0
<u>Bremo Common</u>							
310.00	Land and Land Rights	751	1.33%	10	1.33%	10	0
311.00	Structures and Improvements	15,215,428	2.17%	329,841	2.17%	329,841	0
312.00	Boiler Plant Equipment	6,826,092	2.39%	163,336	2.39%	163,336	0
314.00	Turbogenerator Units	1,413,072	1.86%	26,331	1.86%	26,331	0
315.00	Accessory Electric Equipment	9,402,742	2.61%	245,837	2.61%	245,837	0
316.00	Miscellaneous Power Plant Equip	3,320,468	2.50%	83,145	2.50%	83,145	0

JA

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 111

The following response to Question No. 1 of Public Staff Data Request No. 111, dated June 28, 2019 has been prepared under my supervision.



John Spanos
President
Gannett Fleming Valuation and Rate
Consultants, LLC

Question No. 1:

The workpaper "Attachment Public Staff Set 71-3 DVP – 2016 – Generation – Summary Schedule" and "Attachment Public Staff Set 71-3 DVP – 2016 – Generation – Depreciation Calculations" show a Probable Retirement Date of 06-2051 for Woodland Solar, Whitehouse Solar, and Scott Solar. Pages VI-13 and IX-181 show a Probable Retirement Date of 06-2041 for Woodland Solar, Whitehouse Solar, and Scott Solar. What Probable Retirement Data is the Company proposing for Woodland Solar, Whitehouse Solar, and Scott Solar production plants?

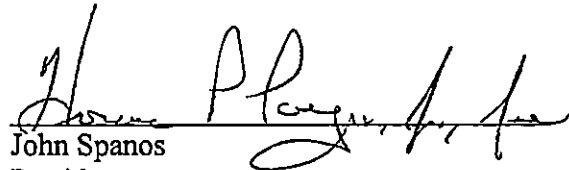
Response:

The updated depreciation schedules utilize 06-2051 as the probable retirement date for the Woodland, Whitehouse, and Scott solar facilities. The 35-year life span for solar is consistent with the 06-2051 retirement date.

I/A

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 71

The following response to Question No. 9 of Public Staff Data Request No. 71, dated June 3, 2019 has been prepared under my supervision.



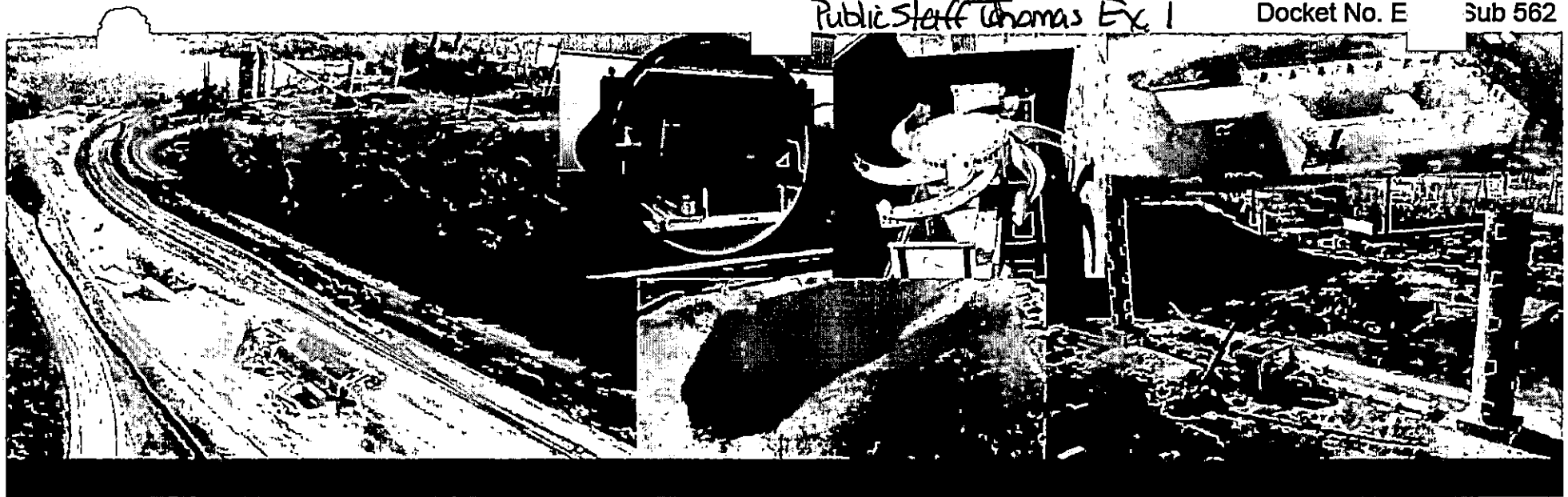
John Spanos
President
Gannett Fleming Valuation and Rate
Consultants, LLC

Question No. 9:

Please provide a complete copy of the database which was used in the Net Salvage Statistics Part VIII in the Company's Updated Depreciation Studies filed on August 23, 2017 in Docket No. E-22, Sub 493. This should include (but not necessarily be limited to) the transaction amount, account/subaccount number (leave in the account/subaccount name and any account/subaccount description that is on the file), transaction type, vintage year, and transaction year. Provide the meaning of any codes (transaction codes, location codes, account codes, etc.) used in these files. Please provide the database requested electronically in Excel (or in text delimited format if not available in Excel.)

Response:

There is no data recorded at this level of detail, which is why the simulated net salvage analysis is performed. Net Salvage is only recorded at the functional level by year.



Mount Storm Coal Yard Fuel Flexibility Project (CYFFP)
Project Evaluation Summary

April 12, 2019

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2011	\$ 35,000,000	Engineering Estimate, 25% contingency on construction.	\$ 35,446	\$ 35,446

Analysis/Justification

- Mt Storm's traditional source of fuel (the local coal that could be trucked to the station by Mettiki) was either being depleted or was becoming very expensive to due to deteriorating geologic and quality conditions.
- Metikki contract was in danger of non-renewal after 2013.
- In order to maintain traditional levels of generation and be able to access cheaper sources of fuel, the station opted to expand its rail receiving capabilities.
- In 2011, the station could only receive about 40% of its coal via rail due to the rail design limitations.
- **Recommendation: Proceed with Study of new Rail Unloading Facility.**

Source: Study PAR Justification, October 2011.

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2012	\$ 35,000,000	Engineering Estimate, 25% contingency on construction.	\$ 140,345	\$ 175,791

Analysis/Justification

- Based on forecast of future generation, recommend delaying COD of rail project by at least one year to Q4 2014.
- Allowed additional time to evaluate the fuel market & continued negotiations with Mettiki
- Analysis of rail capacity improvement remained favorable.

Source: Mt. Storm Rail Upgrade Project, Financial Review, May 2012.

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2013	\$ 70,000,000 (Increased \$35M)	Feasibility +/- 50%	\$ 17,067	\$ 192,858

Analysis/Justification

- Recommendation to invest \$45 - \$60 million to upgrade fuel receiving facility
- Expanded blending facility would allow for blending of NAPP, PRB and ILB coals to manage sulfur and mercury.
- Enable 100% delivery of coal by rail
- Failure to invest predicted replacement power costs of \$14 million to \$42 million per year.

NPV: Break-even point was estimated at 1 to 4 years.

Source: Mt. Storm Strategic Fuel Delivery/ Blending Plan Recommendation, September 2013

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2014	\$ 116,000,000 (Increased \$46M)	Conceptual +/- 30%, based on revised Engineering Study	\$ 1,980,753	\$ 2,173,611

Analysis/Justification

- Project Approved to proceed at \$116M
 - NPV: \$157M (low volume fuel case) to \$365M (High volume fuel case)
 - Customer Payback Period: 3.5 to 6.5 years
 - Recommendation: Proceed with project.
 - Site work and equipment procurement to proceed in 2015, 2016 and 2017.
- Major cost increase due to extensive design additions affirmed by Owners Engineer
- A design/build contracting strategy was developed to utilize multiple prime contractors released in phases for site construction as scope design elements were completed.
- All equipment would be procured separately by Dominion.

Source: Mt. Storm Rail Project Analysis, October 2014

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)...	Actual Cost (Cumulative)
2015	\$ 146,000,000 (Increased \$30M)	Conceptual +/- 30%	\$ 31,373,487	\$ 33,547,098

Analysis/Justification

- Site Work & Procurement In Progress
 - Civil site work initiated in May 2015.
 - Equipment deliveries began in late 2015 and planned to continue through 2016.
 - Fire protection, electrical, mechanical and controls design work remained in progress.
- Cost increases continued due to design changes & contractor bids exceeding estimates.
- Budget Increase from \$116M to \$146M approved in May 2015.
- In August 2015, decision to delay/defer all 2017 construction work until 2018 due to 2017 fleet-wide capital budget constraints.

Coal Yard Fuel Flexibility Project (CYFFP)

Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2016	\$ 184,000,000 (Increased \$38M)	Conceptual +/- 30%	\$ 21,548,597	\$ 55,095,695

Analysis/Justification

- Significant cost increases recognized in early 2016
 - General Contractor bids for remaining work significantly higher than estimates.
 - Increased fire protection scope from original concept.
 - Escalation on deferred/delayed work.
- February 2016: Initiated an evaluation of reduced scope options while retaining overall functionality of the blending facility.
- April 2016: All site activities and fabrication work suspended pending cost reduction analysis.

Coal Yard Fuel Flexibility Project (CYFFP) Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2017	\$ 184,000,000	Conceptual +/- 30%	\$ 3,859,528	\$ 58,955,223

Analysis/Justification

- Closed out site activities, continued engineering on reduced scope options.
- Analysis of market conditions and cancellation/write-off vs. completing the project.
 - Cancel project
 - \$58.6M write-off plus \$8.7M repairs (O/M)
 - \$16.3M (remaining CapEx for existing fuel handling system)
 - Complete the Project
 - Generates fuel savings (\$39M @ 2.3 mtpy - \$189M @ 4.5 mtpy).
 - NPV/Breakeven analysis shows 4 to 5 year payback at 3.0-3.5M tons/year coal consumption.
 - Maintains Dominion's fleet fuel diversity options & capability to manage SO₂, Ash, Hg.
- **Source: Mount Storm Coal Yard Fuel Flexibility Project, Executive Summary; April, 2017.**

Coal Yard Fuel Flexibility Project (CYFFP) Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2018	\$ 184,000,000	Conceptual +/- 30%	\$ 2,327,694	\$ 61,282,917

Analysis/Justification

- Continued engineering on reduced scope options & finalizing design work.
- Analysis performed to assess budget impacts due to site work suspension, market conditions, RGGI and ED11 impacts.
- Assessed NPV for "full project" vs. "partial project" scenarios.
 - \$11.5M (Positive NPV, Partial Project, 10 year scenario)
 - 13.8M (Negative NPV, Full Project, 10 year scenario)
 - NPV basis assumed NAPP Price minus \$5/ton savings with project.
- Recommendation to finalize design work on "partial project" and develop complete contractor bid packages for all remaining work.
- Source: Mount Storm Coal Yard Fuel Flexibility Project Project Status Update, April 2018.**



Coal Yard Fuel Flexibility Project (CYFFP) Project Evaluation Summary

Year	Budget	Confidence	Actual Cost (Calendar Year)	Actual Cost (Cumulative)
2019 (April, YTD)	\$ 184,000,000	Estimate revised to \$211M; Definitive, +/- 10% 10% Contingency on Construction	\$ 406,405	\$ 61,689,322

Analysis/Justification

- **January 2019:**
 - Further analysis of market conditions @ \$184M Budget.
 - NPV: -\$54M (Negative, Partial Project, 10 year scenario); NAPP minus \$5/ton savings basis; Assumes \$122M cost to go.
 - Cancel Project: O&M - \$77.7M (\$68.4M write-off plus \$9.3M repairs) & CapEx: \$5.2M (existing fuel handling system)

Source: Mount Storm Coal Yard Fuel Flexibility Project (CYFFP) Project Status Update, Jan 2019.

- **April 2019:**
 - Received contractor bids, revised market conditions and increased project estimate to \$211M.
 - NPV: -\$67M (Negative, Partial Project, 10 year scenario); NAPP minus \$4.66/ton savings; \$149.5 cost to go.
 - Cancel Project: O&M - \$76.1M (\$62.0M write-off plus \$14.1M repairs & Demo) & CapEx - \$5.2M (existing fuel system)

Source: Mount Storm Coal Yard Fuel Flexibility Project (CYFFP) Project Status Update, April 2019.

McGuireWoods LLP
Gateway Plaza
600 East Canal Street
Richmond, VA 23219
Tel 804.775.1000
Fax 804.775.1061
www.mcgulrewoods.com

Vishwa B. Link
Direct: 804.775.4330

McGUIREWOODS

vlink@mcgulrewoods.com
Direct Fax: 804.698.2151

190200230

February 27, 2019

VIA ELECTRONIC DELIVERY

Joel H. Peck, Clerk
Document Control Center
State Corporation Commission
1300 E. Main St., Tyler Bldg., 1st Fl.
Richmond, VA 23219

*Application of Virginia Electric and Power Company for
Approval and Certification of Electric Facilities: Surry-Skiffes Creek
500 kV Transmission Line, Skiffes Creek-Wheaton 230 kV Transmission
Line and Skiffes Creek 500 kV-230 kV-115 kV Switching Station
Case No. PUE-2012-00029*

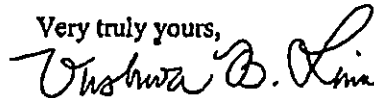
Dear Mr. Peck:

Pursuant to Ordering Paragraph (1) of the Order issued by the State Corporation Commission in the above-captioned proceeding on June 5, 2015, enclosed please find, on behalf of Virginia Electric and Power Company (the "Company"), for electronic filing a true and accurate copy of the *Update on Status of Certificated Project (February 27, 2019)*. A blackline version showing the changes from the Company's most recent Update is included as Exhibit A.

On February 26, 2019, the Certificated Projected was energized and placed into service.

Please do not hesitate to call if you have any questions in regard to the enclosed.

Very truly yours,



Vishwa B. Link

Enc.

cc: Hon. Alexander F. Skirpan, Chief Hearing Examiner
William H. Chambliss, Esq.
K. Beth Clowers, Esq.
Alisson Klaiber, Esq.
Lisa S. Booth, Esq.
David J. DePippo, Esq.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF)

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

Case No. PUE-2012-00029

For approval and certification of electric facilities:)
Surry-Skiffes Creek 500 kV Transmission Line,)
Skiffes Creek-Wheaton 230 kV Transmission Line, and)
Skiffes Creek 500 kV-230 kV-115 kV Switching Station)

UPDATE ON STATUS OF CERTIFICATED PROJECT
FEBRUARY 27, 2019

Virginia Electric and Power Company, d/b/a Dominion Energy Virginia ("Dominion Energy Virginia" or the "Company"),¹ by counsel, pursuant to Ordering Paragraph (1) of the Order issued by the State Corporation Commission ("Commission") in this proceeding on June 5, 2015 ("Order Directing Updates"), hereby files this Update regarding the status of the Surry-Skiffes Creek Line, Skiffes Creek Switching Station ("Skiffes Station"), Skiffes Creek-Wheaton Line, and additional transmission facilities (collectively, the "Certificated Project"). This Update supersedes prior updates submitted by the Company. For this Update to the Commission, the Company respectfully states as follows:

1. By its November 26, 2013 Order, as modified by its February 28, 2014 Order Amending Certificates in the above-styled proceeding and confirmed by its April 10, 2014 Order Denying Petition, the Commission approved and certificated under § 56-46.1 of the Code of

¹ Effective May 10, 2017, Dominion Resources, Inc., the Company's publicly held parent company, changed its name to Dominion Energy, Inc. As part of this corporate-wide rebranding effort, Virginia Electric and Power Company has changed its "doing business as" ("d/b/a") names in Virginia and North Carolina effective May 12, 2017. In Virginia, the Company's d/b/a name has been changed from Dominion Virginia Power to Dominion Energy Virginia, and in North Carolina the d/b/a name has been changed from Dominion North Carolina Power to Dominion Energy North Carolina. The Company's legal corporate entity name "Virginia Electric and Power Company" will not be changing as a result of this rebranding effort.

Virginia ("Va. Code") and the Virginia Utility Facilities Act² the construction and operation by Dominion Energy Virginia of the electric transmission lines and related facilities proposed by the Company in its Application filed in this proceeding on June 11, 2012 ("2012 Application"). Those orders provide that this case is to remain open until the proposed facilities are in service.

2. Those orders were appealed by BASF Corporation and jointly by James City County, Save The James Alliance Trust and James River Association ("JCC Parties") to the Supreme Court of Virginia, which issued its unanimous opinion in those appeals on April 16, 2015, affirming the Commission's approval and certification of these transmission facilities, which comprise the Certificated Project. *BASF Corp. v. State Corp. Comm'n*, 289 Va. 375, 770 S.E.2d 458 (2015) ("*BASF*").

3. The Court's opinion in *BASF* also reversed and remanded (by a 4-3 vote) the holding in the Commission's November 26, 2013 Order that the term "transmission line" includes transmission switching stations such as Skiffes Station under Va. Code § 56-46.1 F, which exempts transmission lines approved by the Commission under that section from Va. Code § 15.2-2232 and local zoning ordinances. Petitions of the Commission and the Company seeking rehearing of this aspect of the *BASF* opinion were denied by the Court on May 15, 2015. As a result, the Company is now required to obtain local land use approval from James City County to construct Skiffes Station.

4. The Court issued its mandate and remand on June 4, 2015, returning the case to the Commission for further proceedings consistent with the views expressed in the written opinion of the Court.

² Va. Code § 56-265.1 *et seq.*

5. The Commission stated in its Order Directing Updates:

The evidence in this proceeding shows that the North Hampton Roads Area is in critical need of a significant electric system upgrade. The need is severe and fast approaching, and the reliability risks are far reaching. The facilities approved in this case, for which judicial review thereof has concluded, are needed to avoid violations of mandatory electric reliability standards approved under federal law to prevent: the loss of electric service to customers; transmission system overloads; and outages in the North Hampton Roads Area with cascading outages into northern Virginia, the City of Richmond, and North Carolina. Given the time required for the construction of significant electric infrastructure projects like the Certificated Project, and the magnitude of the projected reliability violations, the Commission directs Dominion to provide regular updates on the status of the Certificated Project, including but not necessarily limited to the Skiffes Station, the status of the Army Corps process, and the Company's plans for maintaining system reliability in the North Hampton Roads Area.

Order Directing Updates at 2-3.

Updates on Status of the Certificated Project

6. Applications for Section 404 and Section 10 Corps Permits. The Company has continued with its permitting efforts to construct the facilities that have been approved and certificated by the Commission. As the Commission is aware, the Company must obtain permits from the U.S. Army Corps of Engineers ("Corps") under Section 404 of the Clean Water Act to place fill material in the James River for construction of the transmission line towers and Section 10 of the Rivers and Harbors Act of 1899 for resulting obstructions to navigation. The Company filed a Joint Permit Application ("JPA") for the Corps permits in March of 2012 for the Surry to Skiffes Creek portion of the Certificated Project and a separate JPA for the Skiffes Creek to Whealton portion in June of 2013. In August 2013, the Company submitted a combined JPA for the Surry-Skiffes Creek Line and the Skiffes Creek-Whealton Line. This combined JPA superseded the permit applications for each such transmission line that had been submitted in

March 2012 and June 2013.³ On June 12, 2017, the Corps issued a provisional permit to the Company. The provisional permit was conditioned upon: (1) the issuance of a permit by the Virginia Marine Resources Commission ("VMRC"); and (2) certification by the Department of Environmental Quality ("DEQ") that the Company has obtained a Section 401 Water Quality Certification Certification/Virginia Water Protection Permit. On June 30, 2017, the VMRC issued a permit to the Company, and DEQ waived the requirement for a Section 401 Water Quality Certification. On July 3, 2017, the Corps issued the Company a final permit under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.⁴ On July 12, 2017, the National Parks Conservation Association ("NPCA") sought to challenge the Corps permit by filing a Complaint for Declaratory and Injunctive Relief with the United States District Court for the District of Columbia, a copy of which was attached as Exhibit A to the Company's July 18, 2017 Status Update filed with the Commission. On August 3, 2017, the National Trust for Historic Preservation ("NTHP") and Association for the Preservation of Virginia Antiquities ("Preservation Virginia") also sought to challenge the Corps permit by filing a Complaint for Declaratory and Injunctive Relief with the United States District Court for the District of Columbia, a copy of which was attached as Exhibit A to the Company's August 8, 2017 Status Update. On July 24, 2017, the NPCA filed a Motion for Preliminary Injunction with the Court. On July 26, 2017, the Company moved to intervene in the NPCA's case. On July 28, 2017, the parties filed an agreed-upon briefing schedule regarding NPCA's Motion for Preliminary Injunction, which the court accepted. On August 18, 2017, the Corps and the

³ The JPA also served as the application to obtain an authorization from the Virginia Marine Resources Commission for encroachment on subaqueous beds of the Commonwealth in the James River and a Virginia Water Protection Permit from the Virginia Department of Environmental Quality. The latter permit also serves as the required Certificate under Section 401 of the Clean Water Act that the discharges for the Certificated Project will not result in a violation of water quality standards.

⁴ A copy of the Corps permit can be found on the Corps' website at: <http://www.nao.usace.army.mil/Missions/Regulatory/SkiffesCreekPowerLine/>.

Company filed their response briefs. On September 1, 2017, the NPCA filed a reply brief in support of its Motion for Preliminary Injunction. On August 16, 2017, the Coalition to Protect America's National Parks, Inc., Jonathan Jarvis, and American Rivers, Inc. (collectively, the "Coalition") filed a motion for leave to file an *amicus curiae* brief in support of the NPCA's Motion for Preliminary Injunction, and on August 31, 2017, the Sierra Club filed a similar motion to participate as *amicus curiae*. On September 5, 2017, the Chesapeake Conservancy and Scenic Virginia filed a motion to participate as *amici curiae* in support of the NTHP/Preservation Virginia's Motion for Preliminary Injunction. The Corps and the Company responded to the Coalition's motion on August 30, 2017, and the Coalition filed a reply on September 6, 2017. The Corps and the Company responded to: the NTHP/Preservation Virginia's Motion for Preliminary Injunction on September 13, 2017; the Sierra Club's *amicus curiae* motion on September 14, 2017; and the Chesapeake Conservancy/Scenic Virginia's *amici curiae* motion on September 15, 2017. The parties have moved to consolidate the NPCA and NTHP/Preservation Virginia cases. On September 20, 2017, the court held a hearing on both preliminary injunction motions. On October 6, 2017, the Corps and the Company filed answers to the NPCA's and the NTHP/Preservation Virginia's complaints. On October 20, 2017, the court denied both the NPCA's and the NTHP/Preservation Virginia's Motions for Preliminary Injunction. On December 15, 2017, NPCA and NTHP/Preservation Virginia each filed a Motion for Summary Judgment. On January 26, 2018, and January 29, 2018, the Company and the Corps filed Cross-Motions for Summary Judgment, respectively. On March 2, 2018, NPCA and NTHP/Preservation Virginia filed reply briefs in support of their Motions for Summary Judgment. On March 26, 2018, the Corps and the Company filed reply briefs in support of their cross-Motions for Summary Judgment. On May 24, 2018, the Court issued an order denying

NPCA's and NHTP/Preservation Virginia's Motions for Summary Judgment, granting the Corps's and the Company's Cross-Motions for Summary Judgment in their entirety, and dismissing both cases ("District Court MSJ Order"). On June 1, 2018, NPCA filed a notice of appeal in the District Court appealing the District Court MSJ Order to the United States Circuit Court of Appeals for the District of Columbia ("D.C. Circuit"). On June 11, 2018, NTHP/Preservation Virginia filed a notice of appeal in the District Court appealing the District Court MSJ Order to the D.C. Circuit. On July 3, 2018, the District Court denied NPCA's Emergency Motion for Injunction Pending Appeal. On July 31, 2018, the D.C. Circuit denied NPCA's Emergency Motion for Injunction Pending Appeal, and set a briefing schedule on the merits of the appeal. On August 10, 2018, NPCA and NTHP/Preservation Virginia filed their opening briefs on the merits in the D.C. Circuit. On September 28, 2018, the Corps filed its brief on the merits. On October 5, 2018, the Company filed its brief on the merits. Also on October 5, 2018, PJM Interconnection L.L.C. filed an amicus brief in the D.C. Circuit in support of the Corps and the Company. On October 19, 2018, NPCA and NTHP/Preservation Virginia filed their reply briefs. The D.C. Circuit heard oral argument on the appeal on December 7, 2018.

A. **National Environmental Policy Act ("NEPA").** The two Corps permits required for the placement of fill and obstruction to navigation trigger review under NEPA. The Corps has indicated it will prepare an Environmental Assessment ("EA") to satisfy this requirement. NEPA requires the Corps to evaluate alternatives as well as the direct, indirect and cumulative effects of the project on the human environment. As part of this NEPA review, on August 28, 2013, the Corps solicited public comments on the undertaking via public notice in accordance with the requirements of NEPA. The Corps received voluminous comments on the undertaking and has evaluated numerous alternatives. On October 1, 2015, the Corps published

their Preliminary Alternatives Conclusions White Paper ("White Paper"), which concluded, in relevant part:

Therefore, based on information presented to date, our preliminary finding is that two alternatives appear to meet the project purpose while reasonably complying with the evaluation criteria. These are Surry-Skiffes-Whealton 500 kV OH (AC) (Dominion's Preferred) and Chickahominy-Skiffes-Whealton 500kV. We have determined that other alternatives are unavailable due to cost, engineering constraints and/or logistics. Please note this is not a decision on whether Dominion's preferred alternative is or is not permissible, nor does it exclude further consideration of alternatives should new information become available.

White Paper at 7-8. A copy of the White Paper was attached as Exhibit A to the Company's October 2, 2015 Status Update filed with the Commission. On April 5, 2016, the Corps presented a response ("Corps Response" or "Response") to an Advisory Council on Historic Preservation ("ACHP") letter and indicated within its Response to ACHP that, "based on analysis of all information made available to date, the USACE finds nothing to indicate that Dominion's information regarding practicality of alternatives is flawed or incorrect. Additionally, Dominion has explored all feasible alternatives, including those identified by the consulting parties and the public to date." Corps Response at 3. A copy of the Corps Response was attached as Exhibit A to the Company's April 12, 2016 Status Update filed with the Commission. On March 30, 2017, the Corps published their updated Preliminary Alternatives Conclusions White Paper ("Updated White Paper"), a copy of which was attached as Exhibit A to the Company's April 4, 2017 Status Update filed with the Commission. The Updated White Paper concludes, in relevant part:

Based on our thorough review of all information made available to date, it appears that only Dominion's proposed project and the Chickahominy-Skiffes 500kV alternative, meet project purpose and need and are practicable. Other alternatives do not satisfy the project purpose and need and/or are not practicable due to cost, engineering constraints and/or logistics. Please note this is not a

decision on whether Dominion's preferred alternative is or is not permissible, nor does it exclude further consideration of alternatives should new information become available.

Updated White Paper at 10. The Corps made its final selection of alternatives when it issued the EA which accompanied the permit decision.

B. **Endangered Species Act ("ESA").** The two Corps permits also trigger review under the ESA. The Corps must determine that the construction and operation of the facilities will not violate the ESA. The Corps has been consulting with the United States Fish and Wildlife Service ("USFWS") regarding the Certificated Project's potential effect on the Northern Long Eared Bat ("NLEB"), and the National Marine Fisheries Service ("NMFS") regarding the Atlantic Sturgeon. NMFS indicated in a January 28, 2016 letter that they agreed with the Corps that the Project is not likely to adversely affect listed species. On April 12, 2016, the USFWS concurred with the Corps conclusions regarding the NLEB, indicating the Corps would permit Project construction without a time of year restriction on tree clearing. The Corps sent out a request for the USFWS to update its concurrence for all species on May 11, 2017. Consultation was completed upon the issuance of the permit decision. On May 21, 2018, NPCA sent the Corps and NMFS a 60-day notice of intent to sue letter for alleged violations of the ESA based on claims that the agencies failed to consider the impacts of the project on juvenile Atlantic Sturgeon, Atlantic Sturgeon designated critical habitat, and Shortnose Sturgeon.

C. **National Historic Preservation Act ("NHPA").** Finally, the two Corps permits trigger review under the NHPA. Section 106 of the NHPA requires the Corps to take into consideration the effect of permitted activities on historic properties. The NHPA process has four components (a) evaluation of alternatives, (b) identification of historic properties that might be affected, (c) evaluation of whether and to what extent the federally permitted project

will have an adverse effect on those historic properties and (d) mitigation of those adverse effects. This process commenced with the issuance of the initial public notice on August 28, 2013. The comments received helped facilitate the initial steps of the review process and provided interested members of the public with an opportunity to comment on alternatives, the identification of historic properties and potential effects, which includes Carter's Grove, Jamestown and Hog Island. The Corps identified an Area of Potential Effect ("APE") which is shown on a map included as Exhibit A to the Company's February 9, 2016 Status Update filed with the Commission. The Corps, in coordination with the State Historic Preservation Office ("SHPO"), then identified organizations that have a demonstrated interest in the treatment of historic properties associated with the Certificated Project ("Consulting Parties") within the APE.

(i) **Alternatives.** The Corps has conducted its alternative analysis under the NHPA concurrently with that under NEPA described in Paragraph 6 above.

(ii) **Historic Property Identification.** On November 13, 2014, the Corps issued a second public notice soliciting comments specific to historic property identification and an alternatives analysis. The Corps and SHPO reached initial agreement on historic properties within the APE on May 1, 2015. On June 19, 2015, the ACHP requested that the Corps consider whether a portion of the Captain John Smith Chesapeake National Historic Trail ("CAJO") is eligible for inclusion on the National Register of Historic Places. On July 2, 2015, the Corps made a request to the Keeper of the Register ("Keeper") concerning the eligibility of the CAJO within the APE. On August 14, 2015, the Keeper made a determination that a portion of the CAJO

is eligible for listing on the National Register of Historic Places as a contributing element of a historic district within the APE.

(iii) **Determination of Effects.** On May 21, 2015 the Corps issued a third public notice to assist in evaluation of the effects of the Certificated Project on the identified historic properties and evaluation of alternatives or modifications which could avoid, minimize or mitigate adverse effects of the undertaking. As part of the process to assist in consideration of historic impacts, the Company prepared a Consolidated Effects Report ("CER") to merge the various studies that had been prepared beginning in 2011 into a single document. The Corps published the CER on October 1, 2015. The Corps and SHPO subsequently reached agreement on the list of adversely effected properties.

(iv) **Mitigation.** A draft mitigation plan was developed, and the Corps provided for a Consulting Parties comment period on the draft mitigation plan; the draft mitigation plan and comment period was noticed to the Consulting Parties on December 30, 2015, and ended January 29, 2016. A fifth Consulting Parties meeting was held February 2, 2016 to discuss mitigation for impacts to historic properties. A revised draft mitigation plan was developed, which the Corps noticed on June 13, 2016 to the Consulting Parties for a comment period ending July 13, 2016. A copy of the revised mitigation plan was attached as Exhibit A to the Company's June 14, 2016 Status Update filed with the Commission. On July 6, 2016, the Corps extended the comment period until July 27, 2016. On December 7, 2016, the

Corps noticed to the Consulting Parties a further revised mitigation plan for a comment period ending December 21, 2016, which subsequently was extended to January 11, 2017. Additionally, the Corps scheduled a conference call among Consulting Parties for January 19, 2017 to allow for any follow-up and / or clarifying discussion. A copy of the further revised mitigation plan was attached as Exhibit A to the Company's December 20, 2016 Status Update filed with the Commission. The Corps sent an updated Memorandum of Agreement ("MOA") to the Signatory Parties on March 24, 2017. On March 28, 2017, the Corps notified Consulting Parties via email of the latest draft MOA and posted the document on its website. Copies of the Corps' March 24 and March 28 emails and the updated MOA were attached as Exhibit B to the Company's April 4, 2017 Status Update filed with the Commission. On April 24, 2017, the Corps circulated to the Company, SHPO, ACHP, and the other consulting parties the final MOA for signature. A copy of the MOA was attached as Exhibit A to the Company's April 25, 2017 Status Update filed with the Commission. The April 24, 2017 MOA was executed by the four required Signatory Parties. On October 26, 2017, the Company sent the Corps a letter providing notice that it had taken and accomplished the actions that were a prerequisite to beginning "Limited Construction Within the James River," consistent with the definition of that term in the MOA, and the Company currently is conducting such work. On March 21, 2018, the Company sent a letter to the Corps providing notice that it had completed all prerequisite actions required to begin "Construction

Above the James River" as of March 7, 2018. The Company received a letter from the Corps dated July 31, 2018 noting that the Corps finds the Company to be in full compliance with the MOA obligations and has met its obligations to begin "Construction Above the James River."

(v) **Consulting Party Meetings.** In total, the Corps has hosted five Consulting Parties meetings to date (September and December 2014, June and October 2015, and February 2016) to discuss alternatives to the Certificated Project, identification of and impacts to historic properties and potential mitigation opportunities. On October 7, 2016, the Corps welcomed the Pamunkey Indian Tribe as a consulting party following their request to participate in the Section 106 consultation process. On March 28, 2017, the Corps also welcomed Kingsmill Resort as a consulting party following their request to participate in the Section 106 consultation process.

D. Public Hearing. A fourth public notice was published October 1, 2015 providing notice of a public hearing on all aspects of the Corps permitting process to be held on October 30, 2015 at Lafayette High School in Williamsburg, Virginia. The Corps conducted its public hearing on October 30, 2015, during which approximately 80 witnesses appeared to present their views to the Corps. The period for written public comments associated with the October 30, 2015 public hearing (originally scheduled to close on November 9, 2015) was subsequently extended to close of business November 13, 2015, concurrent with the public comment period for the CER and White Paper.

7. Virginia Marine Resources Commission Permit. The Company must obtain an authorization from the VMRC for encroachment on subaqueous beds of the Commonwealth in

the James River. The VMRC considered and unanimously approved the Company's JPA at the June 27, 2017 public hearing. On June 30, 2017, the VMRC issued the Company a permit.

8. **Federal Aviation Administration Review.** Additionally, the Federal Aviation Administration has completed its review of all of the proposed 500 kV structures; the 230 kV structures; and associated cranes and has made a determination of no hazard to air navigation.

9. **United States Fish and Wildlife Service.** Dominion Energy Virginia submitted an application to the USFWS for the removal of an inactive bald eagle nest on one of the 230 kV structures that is proposed to be replaced. The application is currently awaiting approval.

10. **James City County Special Use Permit.** Consistent with the Court's opinion in *BASF*, on June 17, 2015, the Company filed a special use permit application ("SUP"), a rezoning request, a substantial accord determination request and a height waiver application ("the Applications") for a switching station in James City County associated with the Certificated Project. Comments from County staff were received on July 2, 2015, and the Company responded to the County July 10, 2015. The County produced additional comments on the resubmission on July 17, 2015, and the Company responded on July 24, 2015. On July 23, 2015, an open house was hosted by Dominion Energy Virginia to discuss the switching station. There were 26 attendees. The switching station was placed on the James City County Planning Commission agenda scheduled for August 5, 2015, and legal notices were run on July 22 and July 29, 2015 to alert the public of the meeting. A favorable staff report was issued July 29, 2015 recommending approval of the switching station. On August 5, 2015, the James City County Planning Commission voted 4 to 2 against recommending approval of the Company's switching station. Pursuant to Va. Code § 15.2-2232, on August 17, 2015, the Company filed an appeal of the substantial accord determination to the James City County Board of Supervisors

(the "JCC Board"). The JCC Board is responsible for making the final determination on the SUP, rezoning and height waiver requests and for hearing the appeal on the substantial accord determination, and it was anticipated that all four items would be considered during the same meeting of the JCC Board. The appeal and the other pending applications were to be considered by the JCC Board at its October 13, 2015 public meeting, but the Company submitted a letter on September 17, 2015 requesting that action on the appeal be deferred until the JCC Board's meeting on November 24, 2015. The JCC Board approved that request at its meeting on September 22, 2015. A subsequent request was submitted by the Company on November 6, 2015 to defer the vote on the matter until the JCC Board's January 12, 2016 meeting; this request was approved by the JCC Board on November 10, 2015. The Company had anticipated that the decision of the JCC Board would be better informed by the status of the Corps process in January of 2016; so, on December 4, 2015, the Company submitted a letter of request for further deferral of the JCC Board's public hearing on this matter to the JCC Board's February 9, 2016 meeting; this request was approved by the JCC Board on December 8, 2015. The Company sought on January 8, 2016 an additional deferral until the March 8, 2016 JCC Board meeting. The JCC Board approved this request at their January 12, 2016 meeting. However, due to further delay in the Corps process, the Company sought an additional deferral until the August 9, 2016 JCC Board meeting unless the Corps issues its permits before that date, which deferral request was approved by the JCC Board on February 9, 2016. With continuing delays in the Corps process, the Company submitted an additional deferral request dated June 27, 2016 until the December 13, 2016 JCC Board meeting unless the Corps issues its permits before that date. The JCC Board approved the Company's June 27, 2016 deferral request. With additional delays in the Corps process, the Company submitted another deferral request dated November 14, 2016

until the June 27, 2017 JCC Board meeting. The JCC Board approved the Company's November 14, 2016 deferral request on November 22, 2016. On May 23, 2017, the JCC Board granted the Company's request to move the hearing date of the Applications to July 11, 2017, in accordance with the JCC Board's January 2017 policy change regarding public hearings. The JCC Board has made a policy change so that public hearing matters would be scheduled only during the first meeting of the month and that work session matters that do not require a public hearing would be scheduled for the second meeting of the month. At its regularly scheduled meeting on July 11, 2017, the JCC Board voted to approve (3-2 vote) the SUP, rezoning and height waiver requests and also upheld the Company's position regarding the appeal on the substantial accord determination that had been made by the James City County Planning Commission.

11. **James City County Site Plan.** On September 11, 2015, in advance of the JCC Board's vote on the aforementioned items, the Company, at its own risk, submitted the Switching Station site plan to the County for review. Comments from JCC and other review agencies were reviewed by the Company and were addressed in the Company's November 16, 2015 second submission of the Switching Station site plan. Review comments were received on the second submission of the site plan, and the Company reviewed and responded to these comments with a third submission of the site plan with revisions on February 2, 2016. All comments on the third submission were received, and the Company responded to these comments in their fourth submission of the site plan on April 27, 2016. On May 17, 2016, the County provided approval of the Company's Water Quality Impact Assessment. Further comments were generated by other departments. The Company resubmitted the site plan on July 19, 2016. The switching station site plan received its conditional approval from the County

review departments pending the legislative action by the JCC Board. An on-site pre-construction meeting was held between James City County departmental staff and Dominion Energy Virginia representatives on August 11, 2017. At that meeting, the land disturbance permit was issued by JCC to the Company. Subsequently, on August 14, 2017, the Company initiated phase 1 erosion and sediment control on the site. On September 19, 2017, JCC provided the Company final approval on its site plan for work at the switching station.

12. Upon obtaining the required approvals, the Company commenced construction of the applicable Certificated Project components. On February 26, 2019, the new 500 kV line and the 500 kV bus was energized. The fendering system below the surface is 100% complete, and the fender hall section above the surface is 25% complete. The fiberglass covers for the tower piles are at 50% complete; continued work on the covers will start back after the below the surface restrictions are lifted June 15, 2019.

13. **Mercury and Air Toxics Standards ("MATS") Extension.** Additionally, the Company notes that the inability to begin construction since the Application was filed with the Commission had made it impossible for the proposed facilities to be completed and in service by December 31, 2015, as provided in the Commission's February 28, 2014 Order Amending Certificates. As permitted by federal environmental regulations, the Company obtained from the Virginia Department of Environmental Quality a one-year extension of the April 16, 2015 deadline for Yorktown Units 1 and 2 to comply with the U.S. Environmental Protection Agency's ("EPA") MATS regulation that will be achieved by retiring the units, which drove the original June 1, 2015 need date for the new transmission facilities. On October 15, 2015, the Company submitted a Petition seeking from the EPA an administrative order under EPA's

Administrative Order Policy for the MATS rule,⁵ which would provide an additional one-year waiver of non-compliance with the regulations that drive those retirements and further extend the need date for the Certificated Project to June 1, 2017. On December 2, 2015, the Federal Energy Regulatory Commission ("FERC") issued Comments on the Company's request to EPA, stating that Yorktown Unit Nos. 1 and 2 "are needed during the administrative order period, as requested by Dominion, to maintain electric reliability and to avoid possible NERC Reliability Standard violations."⁶ On April 16, 2016, the EPA issued an Administrative Order⁷ under Section 113(g) of the Clean Air Act ("CAA") authorizing the Company to operate the Yorktown coal-fired units (Units 1 and 2) through April 15, 2017 under certain limitations consistent with the MATS rule. Upon expiration of the EPA Administrative Order on April 15, 2017, the Yorktown coal-fired units ceased operations to comply with the MATS rule. On June 13, 2017, PJM Interconnection L.L.C. ("PJM") filed a request for emergency order pursuant to Section 202(c) of the Federal Power Act⁸ with the Department of Energy ("DOE"), and on June 16, 2017, DOE granted an order ("DOE Order") to PJM to direct Dominion Energy Virginia to operate Yorktown Units 1 and 2 as needed to avoid reliability issues on the Virginia Peninsula for 90 days. A copy of the DOE Order was provided as Exhibit A to the Company's June 27, 2017 Status Update filed with the Commission. On July 13, 2017, the Sierra Club filed with DOE a Motion to Intervene and Petition for Rehearing. The Sierra Club alleges that, among other things, DOE failed to establish an emergency exists to support the issuance of the DOE

⁵ *The Environmental Protection Agency's Enforcement Response Policy For Use of Clean Air Act Section 113(a) Administrative Orders In Relation To Electric Reliability and the Mercury and Air Toxics Standard*. EPA Memorandum from Cynthia Giles, Assistant Administrator of the Office of Enforcement and Compliance Assurance to EPA Regional Administrators, Regional Counsel, Regional Enforcement Directors and Regional Air Division Directors (December 16, 2011).

⁶ *Virginia Electric and Power Company*, Docket No. AD16-11-000, 153 FERC ¶ 61,265.

⁷ See <https://www.epa.gov/sites/production/files/2016-04/documents/mats-caa-113a-admin-order-0416-virginia-electric-power-co-virginia.pdf>.

⁸ 16 U.S.C. § 824a(c).

Order, and that DOE failed to comply with NEPA before issuing the DOE Order. On July 31, 2017, PJM filed a Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C. On August 1, 2017, the Company filed a Motion of Virginia Electric and Power Company to Strike the Procedurally Deficient Petition for Rehearing or, in the Alternative, Motion for Leave to Answer and Answer of Virginia Electric and Power Company. On August 18, 2017, the Sierra Club filed a Motion for Leave to File a Response and Response to the Answers by Dominion Energy Virginia and PJM. On September 15, 2017, the DOE issued an order dismissing the Sierra Club's Motion as moot because the DOE order for which the Sierra Club sought rehearing expired on September 14, 2017. On August 24, 2017, PJM submitted a request to the DOE for a 90-day renewal of the DOE Order. On September 14, 2017, the DOE issued a second 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("2d DOE Order"). On October 5, 2017, the Sierra Club filed a Motion to Intervene and Petition for Rehearing with DOE regarding the 2d DOE Order. On November 6, 2017, the DOE denied the Sierra Club's Petition for Rehearing. On November 29, 2017, PJM submitted a request to the DOE for a 90-day renewal of the 2d DOE Order. On December 13, 2017, the DOE issued a third 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("3d DOE Order"). On February 20, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 3d DOE Order. On March 13, 2018, the DOE issued a fourth 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("4th DOE Order"). On May 21, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 4th DOE Order. On June 8, 2018, the DOE issued a fifth 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("5th DOE Order"). On August 17, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 5th DOE Order. On September 5, 2018, the DOE issued a sixth 90-day emergency order

pursuant to Section 202(c) of the Federal Power Act ("6th DOE Order"). On November 13, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 6th DOE Order. On December 6, 2018, the DOE issued a seventh 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("7th DOE Order"). On February 8, 2019, PJM submitted a request to the DOE for a 30-day renewal of the 7th DOE Order, for the period of March 9, 2019, through April 8, 2019.

14. On June 29, 2015, the United States Supreme Court ("Supreme Court") in *Michigan, et al. v. Environmental Protection Agency, et al.*, 576 U.S. __ (2015), reversed and remanded (by a 5-4 vote) the EPA's MATS regulation to the United States Court of Appeals for the D.C. Circuit Court ("D.C. Court of Appeals") for further proceedings consistent with the Supreme Court's Opinion. This decision does not change the Company's plans to close coal units at Yorktown Power Station or the need to construct the Certificated Project by 2017. The Court's ruling required that EPA consider the cost of implementation. The decision neither vacated the rule nor placed a stay on its implementation. On July 31, 2015, the Supreme Court formally sent the litigation back to the D.C. Court of Appeals, to decide whether to vacate or leave in place the MATS rule while the EPA works to address the Supreme Court decision.

15. On November 20, 2015, in response to the Supreme Court decision, the EPA proposed a supplemental finding⁹ that consideration of cost does not alter the agency's previous conclusion that it is appropriate and necessary to regulate coal- and oil-fired electric utility steam generating units ("EGUs") under Section 112 of the CAA. The proposed supplemental finding was published for public comment on December 1, 2015. 80 Fed. Reg. 75025 (Dec. 1, 2015). The public comment period closed on January 15, 2016.

⁹ See <http://www.gpo.gov/fdsys/pkg/FR-2015-12-01/pdf/2015-30360.pdf>.

16. On December 15, 2015, the D.C. Court of Appeals in *White Stallion Energy, LLC v. Environmental Protection Agency*, No. 12-1100, 2015 U.S. App. LEXIS 21819 (D.C. Cir. 2015) issued an order remanding the MATS rulemaking proceeding back to EPA without vacatur. This action means that the MATS rule remains applicable and effective. The D.C. Court of Appeals noted that EPA had represented it was on track to issue by April 15, 2016, a final finding regarding its consideration of cost. EPA officially published a final rule on April 25, 2016.

17. On August 29, 2018, EPA announced that it will move ahead with a draft proposal to reconsider the MATS rule. The reconsideration proposal will address whether it was “appropriate and necessary” to regulate toxic emissions from power plants and will reevaluate the standards set by the rule itself. On February 7, 2019, EPA published a proposed rule revising the “appropriate and necessary” finding regarding the MATS rule, concluding that it is not “appropriate and necessary” to regulate hazardous air pollution (“HAP”) emissions from power plants under Section 112 of the CAA.¹⁰ Specifically, EPA proposes to find that a “proper” consideration of costs demonstrates that the total cost of compliance with MATS is larger than the monetized HAP benefits of the rule, and thus MATS could not be considered “appropriate and necessary.” Notwithstanding this revised finding, EPA is proposing that the MATS rule would remain in place, citing legal precedent in *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), that a negative “appropriate and necessary” finding cannot by itself remove a source category from regulation. In the proposed new finding, EPA would not remove or “de-list” coal- and oil-fired power plants from the list of affected source categories for regulation under CAA Section 112 and would leave MATS in place. The proposal also addresses the CAA requirement

¹⁰ See https://www.epa.gov/sites/production/files/2018-12/documents/fmrmtsfindingandctr_12_2018wdisc.pdf.

for EPA to conduct a residual risk and technology review for power plants, which is due for completion by 2020. EPA's proposal concludes that (i) the residual risks due to emissions of air toxics from power plants are acceptable and the current standards (*i.e.*, MATS) provide an ample margin of safety to protect public health; and (ii) no new developments in HAP emission controls to achieve further cost-effective emissions reductions were identified under the technology review. Therefore, EPA is proposing that revisions to tighten the limits imposed under MATS are not warranted at this time. EPA will accept public comment on the proposal through April 8, 2019. A final rule on this proposal could be issued later this year.

18. On December 1, 2015, the Company filed with the Commission a motion to extend the date for completion and placement in service of the Certificated Project to the date twenty (20) months after the date on which the Corps issues a construction permit for the Certificated Project. On December 22, 2015, the Commission issued an Order granting the Company's motion to extend.

Plans for Maintaining System Reliability in the North Hampton Roads Area

19. In order to ensure reliability for the Peninsula while the Surry-Skiffes Creek Line is being constructed, the Company is conducting a rigorous inspection and maintenance program ("Inspection Program"). The focus of the Inspection Program is transmission lines and stations for assets that directly serve the Peninsula. This includes, but is not limited to, the lines and stations from Chickahominy east to Newport News, as well as lines from Surry and Chuckatuck that feed into the southern end of the Peninsula. The Inspection Program focuses on the human performance factor that will be emphasized consistently over the work period to ensure the Electric Transmission and Station workforce involved in supporting the assets on the Peninsula are cognizant of the ongoing construction. The Inspection Program will also consist of a

complete evaluation of all abnormal equipment logs that require equipment maintenance or replacement in order to ensure that all equipment is in-service, and infrared reviews of stations and transmission lines prior to and during long critical outages to identify any weak links in the system that need attention to prevent unplanned outage events. More frequent aerial and foot patrols of transmission lines and stations will also be incorporated into the Inspection Program. Lastly, the outages required to address any outstanding equipment issues will be scheduled around the necessary planned outages to support the construction of the Certificated Project to limit the overall system exposure.

20. Additional inspection and maintenance work that is currently being conducted as part of the Inspection Program includes performing substation inspections quarterly; augmenting quarterly inspections with Technical Oversight Inspections of select stations; increasing infrared inspections of affected substations; performing infrared inspections every two weeks if load exceeds 18,000 MW; and reviewing all Corrective & Preventative Maintenance orders for substation equipment and relay systems to ensure they are completed or can be deferred during construction of the Certificated Project.

21. Foundation work on the existing transmission lines at the James River Bridge was completed at the end of 2015. Additional inspection and maintenance work also was performed prior to construction of the Certificated Project. This additional future work under the Inspection Program included the following: all line switches were inspected and any necessary maintenance performed; all questionable compression conductor connections were inspected and any necessary repairs were made prior to commencement of work; one month prior to beginning work, a foot patrol was done on the four 230 kV lines serving the Peninsula, and any issues found were corrected prior to commencement of work; one week prior to beginning work, an

aerial patrol was done on the four 230 kV lines serving the Peninsula, and any issues found were corrected prior to commencement of work; and bi-weekly aerial patrols will be done throughout the construction of the Certificated Project on these four 230 kV lines to identify any issues that may have surfaced since the previous patrol. The bi-weekly aerial patrols will specifically look for equipment integrity issues identified through visual inspection, corona camera, and infrared camera; and any third-party work on or near the right-of-way with a potential threat to the lines, which will be identified and addressed accordingly.

22. The plan for maintaining system reliability for the Peninsula will include careful planning of transmission outages and minimum work on assets on the Peninsula while the planned outages to support the construction of the Certificated Project are underway. Under some unplanned event scenarios, the reliability plan must include shedding of load in the amounts necessary to reduce stress on the system below critical demand levels. The shedding of load could occur in some instances at system load levels well below peak demand levels, on the order of 16,000 MW or higher. The exact system load level, load shed amounts and locations will be dependent on the circumstances that exist on the system at the time.

23. To minimize the potential for cascading outages to occur due to the unavailability of Yorktown Units 1 and 2 and until the proposed Skiffes Creek Project is in service, the Company has sought and received approval from SERC Reliability Corporation and PJM to install a Remedial Action Scheme ("RAS") beginning April of 2017. The RAS will reduce the likelihood of cascading outages from occurring by removing from service approximately 150,000 customers on the Peninsula, but would only be activated if certain contingency conditions occur. The RAS will take less than one second to make this determination and actually remove from service the affected customers. In the event the RAS is activated, the

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Company and PJM's System Operators may initiate rotating outages on the Peninsula until the transmission system can be returned to a normal state. Notwithstanding the installation of the RAS, the Company is continuing to evaluate temporary measures for managing system operating conditions in order to minimize the need to activate the RAS.

24. The Company will continue to report to the Commission material developments of its plans for maintaining system reliability on the schedule set forth in the Order Directing Updates.

Respectfully submitted,

VIRGINIA ELECTRIC AND POWER COMPANY

By: Vishwa B. Link

Lisa S. Booth
David J. DePippo
Dominion Energy Services, Inc.
120 Tredegar Street, Riverside 2
Richmond, Virginia 23219
(804) 819-2288 (phone)
(804) 819-2411 (phone)
lisa.s.booth@dominionenergy.com
david.j.depippo@dominionenergy.com

Vishwa B. Link
Stephen H. Watts, II
Jennifer D. Valaika
McGuire Woods LLP
Gateway Plaza
800 East Canal Street
Richmond, Virginia 23219-3916
(804) 775-4330 (phone)
(804) 775-4357 (phone)
(804) 775-1051 (phone)
vlink@mcguirewoods.com
swatts@mcguirewoods.com
jvalaika@mcguirewoods.com

Counsel for Virginia Electric and Power Company

February 27, 2019

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COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF)

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

Case No. PUE-2012-00029

For approval and certification of electric facilities:)
Surry-Skiffes Creek 500 kV Transmission Line,)
Skiffes Creek-Wheaton 230 kV Transmission Line, and)
Skiffes Creek 500 kV-230 kV-115 kV Switching Station)

UPDATE ON STATUS OF CERTIFICATED PROJECT
FEBRUARY 6-27, 2019

Virginia Electric and Power Company, d/b/a Dominion Energy Virginia ("Dominion Energy Virginia" or the "Company"),¹ by counsel, pursuant to Ordering Paragraph (1) of the Order issued by the State Corporation Commission ("Commission") in this proceeding on June 5, 2015 ("Order Directing Updates"), hereby files this Update regarding the status of the Surry-Skiffes Creek Line, Skiffes Creek Switching Station ("Skiffes Station"), Skiffes Creek-Wheaton Line, and additional transmission facilities (collectively, the "Certificated Project"). This Update supersedes prior updates submitted by the Company. For this Update to the Commission, the Company respectfully states as follows:

I. By its November 26, 2013 Order, as modified by its February 28, 2014 Order Amending Certificates in the above-styled proceeding and confirmed by its April 10, 2014 Order Denying Petition, the Commission approved and certificated under § 56-46.1 of the Code of

¹ Effective May 10, 2017, Dominion Resources, Inc., the Company's publicly held parent company, changed its name to Dominion Energy, Inc. As part of this corporate-wide rebranding effort, Virginia Electric and Power Company has changed its "doing business as" ("d/b/a") names in Virginia and North Carolina effective May 12, 2017. In Virginia, the Company's d/b/a name has been changed from Dominion Virginia Power to Dominion Energy Virginia, and in North Carolina the d/b/a name has been changed from Dominion North Carolina Power to Dominion Energy North Carolina. The Company's legal corporate entity name "Virginia Electric and Power Company" will not be changing as a result of this rebranding effort.

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Virginia ("Va. Code") and the Virginia Utility Facilities Act² the construction and operation by Dominion Energy Virginia of the electric transmission lines and related facilities proposed by the Company in its Application filed in this proceeding on June 11, 2012 ("2012 Application"). Those orders provide that this case is to remain open until the proposed facilities are in service.

2. Those orders were appealed by BASF Corporation and jointly by James City County, Save The James Alliance Trust and James River Association ("JCC Parties") to the Supreme Court of Virginia, which issued its unanimous opinion in those appeals on April 16, 2015, affirming the Commission's approval and certification of these transmission facilities, which comprise the Certificated Project. *BASF Corp. v. State Corp. Comm'n*, 289 Va. 375, 770 S.E.2d 458 (2015) ("*BASF*").

3. The Court's opinion in *BASF* also reversed and remanded (by a 4-3 vote) the holding in the Commission's November 26, 2013 Order that the term "transmission line" includes transmission switching stations such as Skiffes Station under Va. Code § 56-46.1 F, which exempts transmission lines approved by the Commission under that section from Va. Code § 15.2-2232 and local zoning ordinances. Petitions of the Commission and the Company seeking rehearing of this aspect of the *BASF* opinion were denied by the Court on May 15, 2015. As a result, the Company is now required to obtain local land use approval from James City County to construct Skiffes Station.

4. The Court issued its mandate and remand on June 4, 2015, returning the case to the Commission for further proceedings consistent with the views expressed in the written opinion of the Court.

² Va. Code § 56-265.1 *et seq.*

5. The Commission stated in its Order Directing Updates:

The evidence in this proceeding shows that the North Hampton Roads Area is in critical need of a significant electric system upgrade. The need is severe and fast approaching, and the reliability risks are far reaching. The facilities approved in this case, for which judicial review thereof has concluded, are needed to avoid violations of mandatory electric reliability standards approved under federal law to prevent: the loss of electric service to customers; transmission system overloads; and outages in the North Hampton Roads Area with cascading outages into northern Virginia, the City of Richmond, and North Carolina. Given the time required for the construction of significant electric infrastructure projects like the Certificated Project, and the magnitude of the projected reliability violations, the Commission directs Dominion to provide regular updates on the status of the Certificated Project, including but not necessarily limited to the Skiffes Station, the status of the Army Corps process, and the Company's plans for maintaining system reliability in the North Hampton Roads Area.

Order Directing Updates at 2-3.

Updates on Status of the Certificated Project

6. Applications for Section 404 and Section 10 Corps Permits. The Company has continued with its permitting efforts to construct the facilities that have been approved and certificated by the Commission. As the Commission is aware, the Company must obtain permits from the U.S. Army Corps of Engineers ("Corps") under Section 404 of the Clean Water Act to place fill material in the James River for construction of the transmission line towers and Section 10 of the Rivers and Harbors Act of 1899 for resulting obstructions to navigation. The Company filed a Joint Permit Application ("JPA") for the Corps permits in March of 2012 for the Surry to Skiffes Creek portion of the Certificated Project and a separate JPA for the Skiffes Creek to Whealton portion in June of 2013. In August 2013, the Company submitted a combined JPA for the Surry-Skiffes Creek Line and the Skiffes Creek-Whealton Line. This combined JPA

superseded the permit applications for each such transmission line that had been submitted in March 2012 and June 2013.³ On June 12, 2017, the Corps issued a provisional permit to the Company. The provisional permit was conditioned upon: (1) the issuance of a permit by the Virginia Marine Resources Commission ("VMRC"); and (2) certification by the Department of Environmental Quality ("DEQ") that the Company has obtained a Section 401 Water Quality Certification Certification/Virginia Water Protection Permit. On June 30, 2017, the VMRC issued a permit to the Company, and DEQ waived the requirement for a Section 401 Water Quality Certification. On July 3, 2017, the Corps issued the Company a final permit under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.⁴ On July 12, 2017, the National Parks Conservation Association ("NPCA") sought to challenge the Corps permit by filing a Complaint for Declaratory and Injunctive Relief with the United States District Court for the District of Columbia, a copy of which was attached as Exhibit A to the Company's July 18, 2017 Status Update filed with the Commission. On August 3, 2017, the National Trust for Historic Preservation ("NTHP") and Association for the Preservation of Virginia Antiquities ("Preservation Virginia") also sought to challenge the Corps permit by filing a Complaint for Declaratory and Injunctive Relief with the United States District Court for the District of Columbia, a copy of which was attached as Exhibit A to the Company's August 8, 2017 Status Update. On July 24, 2017, the NPCA filed a Motion for Preliminary Injunction with the Court. On July 26, 2017, the Company moved to intervene in the NPCA's case. On July 28, 2017, the parties filed an agreed-upon briefing schedule regarding NPCA's Motion for Preliminary Injunction,

³ The JPA also served as the application to obtain an authorization from the Virginia Marine Resources Commission for encroachment on subaqueous beds of the Commonwealth in the James River and a Virginia Water Protection Permit from the Virginia Department of Environmental Quality. The latter permit also serves as the required Certificate under Section 401 of the Clean Water Act that the discharges for the Certificated Project will not result in a violation of water quality standards.

which the court accepted. On August 18, 2017, the Corps and the Company filed their response briefs. On September 1, 2017, the NPCA filed a reply brief in support of its Motion for Preliminary Injunction. On August 16, 2017, the Coalition to Protect America's National Parks, Inc., Jonathan Jarvis, and American Rivers, Inc. (collectively, the "Coalition") filed a motion for leave to file an *amicus curiae* brief in support of the NPCA's Motion for Preliminary Injunction, and on August 31, 2017, the Sierra Club filed a similar motion to participate as *amicus curiae*. On September 5, 2017, the Chesapeake Conservancy and Scenic Virginia filed a motion to participate as *amici curiae* in support of the NTHP/Preservation Virginia's Motion for Preliminary Injunction. The Corps and the Company responded to the Coalition's motion on August 30, 2017, and the Coalition filed a reply on September 6, 2017. The Corps and the Company responded to: the NTHP/Preservation Virginia's Motion for Preliminary Injunction on September 13, 2017; the Sierra Club's *amicus curiae* motion on September 14, 2017; and the Chesapeake Conservancy/Scenic Virginia's *amici curiae* motion on September 15, 2017. The parties have moved to consolidate the NPCA and NTHP/Preservation Virginia cases. On September 20, 2017, the court held a hearing on both preliminary injunction motions. On October 6, 2017, the Corps and the Company filed answers to the NPCA's and the NTHP/Preservation Virginia's complaints. On October 20, 2017, the court denied both the NPCA's and the NTHP/Preservation Virginia's Motions for Preliminary Injunction. On December 15, 2017, NPCA and NTHP/Preservation Virginia each filed a Motion for Summary Judgment. On January 26, 2018, and January 29, 2018, the Company and the Corps filed Cross-Motions for Summary Judgment, respectively. On March 2, 2018, NPCA and NTHP/Preservation Virginia filed reply briefs in support of their Motions for Summary Judgment. On March 26, 2018, the Corps and the Company filed reply briefs in support

⁴ A copy of the Corps permit can be found on the Corps' website at:
<http://www.nao.usace.army.mil/Missions/Regulatory/SkiffesCreekPowerLine/>.

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of their cross-Motions for Summary Judgment. On May 24, 2018, the Court issued an order denying NPCA's and NHTP/Preservation Virginia's Motions for Summary Judgment, granting the Corps's and the Company's Cross-Motions for Summary Judgment in their entirety, and dismissing both cases ("District Court MSJ Order"). On June 1, 2018, NPCA filed a notice of appeal in the District Court appealing the District Court MSJ Order to the United States Circuit Court of Appeals for the District of Columbia ("D.C. Circuit"). On June 11, 2018, NTHP/Preservation Virginia filed a notice of appeal in the District Court appealing the District Court MSJ Order to the D.C. Circuit. On July 3, 2018, the District Court denied NPCA's Emergency Motion for Injunction Pending Appeal. On July 31, 2018, the D.C. Circuit denied NPCA's Emergency Motion for Injunction Pending Appeal, and set a briefing schedule on the merits of the appeal. On August 10, 2018, NPCA and NTHP/Preservation Virginia filed their opening briefs on the merits in the D.C. Circuit. On September 28, 2018, the Corps filed its brief on the merits. On October 5, 2018, the Company filed its brief on the merits. Also on October 5, 2018, PJM Interconnection L.L.C. filed an amicus brief in the D.C. Circuit in support of the Corps and the Company. On October 19, 2018, NPCA and NTHP/Preservation Virginia filed their reply briefs. The D.C. Circuit heard oral argument on the appeal on December 7, 2018.

A. National Environmental Policy Act ("NEPA"). The two Corps permits required for the placement of fill and obstruction to navigation trigger review under NEPA. The Corps has indicated it will prepare an Environmental Assessment ("EA") to satisfy this requirement. NEPA requires the Corps to evaluate alternatives as well as the direct, indirect and cumulative effects of the project on the human environment. As part of this NEPA review, on August 28, 2013, the Corps solicited public comments on the undertaking via public notice in accordance with the requirements of NEPA. The Corps received voluminous comments on the

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undertaking and has evaluated numerous alternatives. On October 1, 2015, the Corps published their Preliminary Alternatives Conclusions White Paper ("White Paper"), which concluded, in relevant part:

Therefore, based on information presented to date, our preliminary finding is that two alternatives appear to meet the project purpose while reasonably complying with the evaluation criteria. These are Surry-Skiffes-Whealton 500 kV OH (AC) (Dominion's Preferred) and Chickahominy-Skiffes-Whealton 500kV. We have determined that other alternatives are unavailable due to cost, engineering constraints and/or logistics. Please note this is not a decision on whether Dominion's preferred alternative is or is not permissible, nor does it exclude further consideration of alternatives should new information become available.

White Paper at 7-8. A copy of the White Paper was attached as Exhibit A to the Company's October 2, 2015 Status Update filed with the Commission. On April 5, 2016, the Corps presented a response ("Corps Response" or "Response") to an Advisory Council on Historic Preservation ("ACHP") letter and indicated within its Response to ACHP that, "based on analysis of all information made available to date, the USACE finds nothing to indicate that Dominion's information regarding practicality of alternatives is flawed or incorrect. Additionally, Dominion has explored all feasible alternatives, including those identified by the consulting parties and the public to date." Corps Response at 3. A copy of the Corps Response was attached as Exhibit A to the Company's April 12, 2016 Status Update filed with the Commission. On March 30, 2017, the Corps published their updated Preliminary Alternatives Conclusions White Paper ("Updated White Paper"), a copy of which was attached as Exhibit A to the Company's April 4, 2017 Status Update filed with the Commission. The Updated White Paper concludes, in relevant part:

Based on our thorough review of all information made available to date, it appears that only Dominion's proposed project and the Chickahominy-Skiffes 500kV alternative, meet project purpose and need and are practicable. Other alternatives do not satisfy the project purpose and need and/or are not practicable due to cost, engineering constraints and/or logistics. Please note this is not a

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decision on whether Dominion's preferred alternative is or is not
permissible, nor does it exclude further consideration of alternatives
should new information become available.

Updated White Paper at 10. The Corps made its final selection of alternatives when it issued the
EA which accompanied the permit decision.

B. Endangered Species Act ("ESA"). The two Corps permits also trigger
review under the ESA. The Corps must determine that the construction and operation of the
facilities will not violate the ESA. The Corps has been consulting with the United States Fish and
Wildlife Service ("USFWS") regarding the Certificated Project's potential effect on the Northern
Long Eared Bat ("NLEB"), and the National Marine Fisheries Service ("NMFS") regarding the
Atlantic Sturgeon. NMFS indicated in a January 28, 2016 letter that they agreed with the Corps
that the Project is not likely to adversely affect listed species. On April 12, 2016, the USFWS
concurred with the Corps conclusions regarding the NLEB, indicating the Corps would permit
Project construction without a time of year restriction on tree clearing. The Corps sent out a
request for the USFWS to update its concurrence for all species on May 11, 2017. Consultation
was completed upon the issuance of the permit decision. On May 21, 2018, NPCA sent the Corps
and NMFS a 60-day notice of intent to sue letter for alleged violations of the ESA based on claims
that the agencies failed to consider the impacts of the project on juvenile Atlantic Sturgeon,
Atlantic Sturgeon designated critical habitat, and Shortnose Sturgeon.

C. National Historic Preservation Act ("NHPA"). Finally, the two Corps
permits trigger review under the NHPA. Section 106 of the NHPA requires the Corps to take into
consideration the effect of permitted activities on historic properties. The NHPA process has four
components (a) evaluation of alternatives, (b) identification of historic properties that might be
affected, (c) evaluation of whether and to what extent the federally permitted project will have an

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adverse effect on those historic properties and (d) mitigation of those adverse effects. This process commenced with the issuance of the initial public notice on August 28, 2013. The comments received helped facilitate the initial steps of the review process and provided interested members of the public with an opportunity to comment on alternatives, the identification of historic properties and potential effects, which includes Carter's Grove, Jamestown and Hog Island. The Corps identified an Area of Potential Effect ("APE") which is shown on a map included as Exhibit A to the Company's February 9, 2016 Status Update filed with the Commission. The Corps, in coordination with the State Historic Preservation Office ("SHPO"), then identified organizations that have a demonstrated interest in the treatment of historic properties associated with the Certificated Project ("Consulting Parties") within the APE.

(i) **Alternatives.** The Corps has conducted its alternative analysis under the NHPA concurrently with that under NEPA described in Paragraph 6 above.

(ii) **Historic Property Identification.** On November 13, 2014, the Corps issued a second public notice soliciting comments specific to historic property identification and an alternatives analysis. The Corps and SHPO reached initial agreement on historic properties within the APE on May 1, 2015. On June 19, 2015, the ACHP requested that the Corps consider whether a portion of the Captain John Smith Chesapeake National Historic Trail ("CAJO") is eligible for inclusion on the National Register of Historic Places. On July 2, 2015, the Corps made a request to the Keeper of the Register ("Keeper") concerning the eligibility of the CAJO within the APE. On August 14, 2015, the Keeper made a determination that a portion of the CAJO is

eligible for listing on the National Register of Historic Places as a contributing element of a historic district within the APE.

(iii) **Determination of Effects.** On May 21, 2015 the Corps issued a third public notice to assist in evaluation of the effects of the Certificated Project on the identified historic properties and evaluation of alternatives or modifications which could avoid, minimize or mitigate adverse effects of the undertaking. As part of the process to assist in consideration of historic impacts, the Company prepared a Consolidated Effects Report ("CER") to merge the various studies that had been prepared beginning in 2011 into a single document. The Corps published the CER on October 1, 2015. The Corps and SHPO subsequently reached agreement on the list of adversely effected properties.

(iv) **Mitigation.** A draft mitigation plan was developed, and the Corps provided for a Consulting Parties comment period on the draft mitigation plan; the draft mitigation plan and comment period was noticed to the Consulting Parties on December 30, 2015, and ended January 29, 2016. A fifth Consulting Parties meeting was held February 2, 2016 to discuss mitigation for impacts to historic properties. A revised draft mitigation plan was developed, which the Corps noticed on June 13, 2016 to the Consulting Parties for a comment period ending July 13, 2016. A copy of the revised mitigation plan was attached as Exhibit A to the Company's June 14, 2016 Status Update filed with the Commission. On July 6, 2016, the Corps extended the comment period until July 27, 2016. On December 7, 2016, the Corps noticed to the Consulting

Parties a further revised mitigation plan for a comment period ending December 21, 2016, which subsequently was extended to January 11, 2017. Additionally, the Corps scheduled a conference call among Consulting Parties for January 19, 2017 to allow for any follow-up and / or clarifying discussion. A copy of the further revised mitigation plan was attached as Exhibit A to the Company's December 20, 2016 Status Update filed with the Commission. The Corps sent an updated Memorandum of Agreement ("MOA") to the Signatory Parties on March 24, 2017. On March 28, 2017, the Corps notified Consulting Parties via email of the latest draft MOA and posted the document on its website. Copies of the Corps' March 24 and March 28 emails and the updated MOA were attached as Exhibit B to the Company's April 4, 2017 Status Update filed with the Commission. On April 24, 2017, the Corps circulated to the Company, SHPO, ACHP, and the other consulting parties the final MOA for signature. A copy of the MOA was attached as Exhibit A to the Company's April 25, 2017 Status Update filed with the Commission. The April 24, 2017 MOA was executed by the four required Signatory Parties. On October 26, 2017, the Company sent the Corps a letter providing notice that it had taken and accomplished the actions that were a prerequisite to beginning "Limited Construction Within the James River," consistent with the definition of that term in the MOA, and the Company currently is conducting such work. On March 21, 2018, the Company sent a letter to the Corps providing notice that it had completed all prerequisite actions required to begin "Construction Above the James River" as of March 7, 2018. The Company received a letter from the

Corps dated July 31, 2018 noting that the Corps finds the Company to be in full compliance with the MOA obligations and has met its obligations to begin "Construction Above the James River."

(v) **Consulting Party Meetings.** In total, the Corps has hosted five Consulting Parties meetings to date (September and December 2014, June and October 2015, and February 2016) to discuss alternatives to the Certificated Project, identification of and impacts to historic properties and potential mitigation opportunities. On October 7, 2016, the Corps welcomed the Pamunkey Indian Tribe as a consulting party following their request to participate in the Section 106 consultation process. On March 28, 2017, the Corps also welcomed Kingsmill Resort as a consulting party following their request to participate in the Section 106 consultation process.

D. **Public Hearing.** A fourth public notice was published October 1, 2015 providing notice of a public hearing on all aspects of the Corps permitting process to be held on October 30, 2015 at Lafayette High School in Williamsburg, Virginia. The Corps conducted its public hearing on October 30, 2015, during which approximately 80 witnesses appeared to present their views to the Corps. The period for written public comments associated with the October 30, 2015 public hearing (originally scheduled to close on November 9, 2015) was subsequently extended to close of business November 13, 2015, concurrent with the public comment period for the CER and White Paper.

7. **Virginia Marine Resources Commission Permit.** The Company must obtain an authorization from the VMRC for encroachment on subaqueous beds of the Commonwealth in the James River. The VMRC considered and unanimously approved the Company's JPA at the June

8. **Federal Aviation Administration Review.** Additionally, the Federal Aviation Administration has completed its review of all of the proposed 500 kV structures; the 230 kV structures; and associated cranes and has made a determination of no hazard to air navigation.

10. James City County Special Use Permit. Consistent with the Court's opinion in *BASF*, on June 17, 2015, the Company filed a special use permit application ("SUP"), a rezoning request, a substantial accord determination request and a height waiver application ("the Applications") for a switching station in James City County associated with the Certificated Project. Comments from County staff were received on July 2, 2015, and the Company responded to the County July 10, 2015. The County produced additional comments on the resubmission on July 17, 2015, and the Company responded on July 24, 2015. On July 23, 2015, an open house was hosted by Dominion Energy Virginia to discuss the switching station. There were 26 attendees. The switching station was placed on the James City County Planning Commission agenda scheduled for August 5, 2015, and legal notices were run on July 22 and July 29, 2015 to alert the public of the meeting. A favorable staff report was issued July 29, 2015 recommending approval of the switching station. On August 5, 2015, the James City County Planning Commission voted 4 to 2 against recommending approval of the Company's switching station. Pursuant to Va. Code § 15.2-2232, on August 17, 2015, the Company filed an appeal of the substantial accord determination to the James City County Board of Supervisors (the "JCC Board"). The JCC Board is responsible for making the final determination on the SUP, rezoning and height waiver requests

and for hearing the appeal on the substantial accord determination, and it was anticipated that all four items would be considered during the same meeting of the JCC Board. The appeal and the other pending applications were to be considered by the JCC Board at its October 13, 2015 public meeting, but the Company submitted a letter on September 17, 2015 requesting that action on the appeal be deferred until the JCC Board's meeting on November 24, 2015. The JCC Board approved that request at its meeting on September 22, 2015. A subsequent request was submitted by the Company on November 6, 2015 to defer the vote on the matter until the JCC Board's January 12, 2016 meeting; this request was approved by the JCC Board on November 10, 2015. The Company had anticipated that the decision of the JCC Board would be better informed by the status of the Corps process in January of 2016; so, on December 4, 2015, the Company submitted a letter of request for further deferral of the JCC Board's public hearing on this matter to the JCC Board's February 9, 2016 meeting; this request was approved by the JCC Board on December 8, 2015. The Company sought on January 8, 2016 an additional deferral until the March 8, 2016 JCC Board meeting. The JCC Board approved this request at their January 12, 2016 meeting. However, due to further delay in the Corps process, the Company sought an additional deferral until the August 9, 2016 JCC Board meeting unless the Corps issues its permits before that date, which deferral request was approved by the JCC Board on February 9, 2016. With continuing delays in the Corps process, the Company submitted an additional deferral request dated June 27, 2016 until the December 13, 2016 JCC Board meeting unless the Corps issues its permits before that date. The JCC Board approved the Company's June 27, 2016 deferral request. With additional delays in the Corps process, the Company submitted another deferral request dated November 14, 2016 until the June 27, 2017 JCC Board meeting. The JCC Board approved the Company's November 14, 2016 deferral request on November 22, 2016. On May 23, 2017, the

JCC Board granted the Company's request to move the hearing date of the Applications to July 11, 2017, in accordance with the JCC Board's January 2017 policy change regarding public hearings. The JCC Board has made a policy change so that public hearing matters would be scheduled only during the first meeting of the month and that work session matters that do not require a public hearing would be scheduled for the second meeting of the month. At its regularly scheduled meeting on July 11, 2017, the JCC Board voted to approve (3-2 vote) the SUP, rezoning and height waiver requests and also upheld the Company's position regarding the appeal on the substantial accord determination that had been made by the James City County Planning Commission.

11. **James City County Site Plan.** On September 11, 2015, in advance of the JCC Board's vote on the aforementioned items, the Company, at its own risk, submitted the Switching Station site plan to the County for review. Comments from JCC and other review agencies were reviewed by the Company and were addressed in the Company's November 16, 2015 second submission of the Switching Station site plan. Review comments were received on the second submission of the site plan, and the Company reviewed and responded to these comments with a third submission of the site plan with revisions on February 2, 2016. All comments on the third submission were received, and the Company responded to these comments in their fourth submission of the site plan on April 27, 2016. On May 17, 2016, the County provided approval of the Company's Water Quality Impact Assessment. Further comments were generated by other departments. The Company resubmitted the site plan on July 19, 2016. The switching station site plan received its conditional approval from the County review departments pending the legislative action by the JCC Board. An on-site pre-construction meeting was held between James City County departmental staff and Dominion Energy Virginia representatives on August 11, 2017. At that meeting, the land disturbance permit was issued by JCC to the Company. Subsequently, on

August 14, 2017, the Company initiated phase 1 erosion and sediment control on the site. On September 19, 2017, JCC provided the Company final approval on its site plan for work at the switching station.

12. Upon obtaining the required approvals, the Company commenced construction of the applicable Certificated Project components. ~~As of December 1, 2018, the construction of the switching station is approximately 95% complete; the 230 kV and the 115 kV line work is approximately 85% complete; the new 500 kV line on land is approximately 98% complete and on water is approximately 70% complete. The Company will continue to report to the Commission material developments in its permitting and construction activities on the schedule set forth in the Order Directing Updates.~~ On February 26, 2019, the new 500 kV line and the 500 kV bus was energized. The fendering system below the surface is 100% complete, and the fender hull section above the surface is 25% complete. The fiberglass covers for the tower piles are at 50% complete; continued work on the covers will start back after the below the surface restrictions are lifted June 15, 2019.

13. Mercury and Air Toxics Standards ("MATS") Extension. Additionally, the Company notes that the inability to begin construction since the Application was filed with the Commission had made it impossible for the proposed facilities to be completed and in service by December 31, 2015, as provided in the Commission's February 28, 2014 Order Amending Certificates. As permitted by federal environmental regulations, the Company obtained from the Virginia Department of Environmental Quality a one-year extension of the April 16, 2015 deadline for Yorktown Units 1 and 2 to comply with the U.S. Environmental Protection Agency's ("EPA") MATS regulation that will be achieved by retiring the units, which drove the original June 1, 2015 need date for the new transmission facilities. On October 15, 2015, the Company

submitted a Petition seeking from the EPA an administrative order under EPA's Administrative Order Policy for the MATS rule,⁵ which would provide an additional one-year waiver of non-compliance with the regulations that drive those retirements and further extend the need date for the Certificated Project to June 1, 2017. On December 2, 2015, the Federal Energy Regulatory Commission ("FERC") issued Comments on the Company's request to EPA, stating that Yorktown Unit Nos. 1 and 2 "are needed during the administrative order period, as requested by Dominion, to maintain electric reliability and to avoid possible NERC Reliability Standard violations."⁶ On April 16, 2016, the EPA issued an Administrative Order⁷ under Section 113(g) of the Clean Air Act ("CAA") authorizing the Company to operate the Yorktown coal-fired units (Units 1 and 2) through April 15, 2017 under certain limitations consistent with the MATS rule. Upon expiration of the EPA Administrative Order on April 15, 2017, the Yorktown coal-fired units ceased operations to comply with the MATS rule. On June 13, 2017, PJM Interconnection L.L.C. ("PJM") filed a request for emergency order pursuant to Section 202(c) of the Federal Power Act⁸ with the Department of Energy ("DOE"), and on June 16, 2017, DOE granted an order ("DOE Order") to PJM to direct Dominion Energy Virginia to operate Yorktown Units 1 and 2 as needed to avoid reliability issues on the Virginia Peninsula for 90 days. A copy of the DOE Order was provided as Exhibit A to the Company's June 27, 2017 Status Update filed with the Commission. On July 13, 2017, the Sierra Club filed with DOE a Motion to Intervene and Petition

⁵ *The Environmental Protection Agency's Enforcement Response Policy For Use of Clean Air Act Section 113(a) Administrative Orders In Relation To Electric Reliability and the Mercury and Air Toxics Standard*. EPA Memorandum from Cynthia Giles, Assistant Administrator of the Office of Enforcement and Compliance Assurance to EPA Regional Administrators, Regional Counsel, Regional Enforcement Directors and Regional Air Division Directors (December 16, 2011).

⁶ *Virginia Electric and Power Company*, Docket No. AD16-11-000, 153 FERC ¶ 61,265.

⁷ See

<https://www.epa.gov/sites/production/files/2016-04/documents/mats-cao-113a-admin-order-0416-virginia-electric-power-co-virginia.pdf>.

⁸ 16 U.S.C. § 824a(c).

for Rehearing. The Sierra Club alleges that, among other things, DOE failed to establish an emergency exists to support the issuance of the DOE Order, and that DOE failed to comply with NEPA before issuing the DOE Order. On July 31, 2017, PJM filed a Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C. On August 1, 2017, the Company filed a Motion of Virginia Electric and Power Company to Strike the Procedurally Deficient Petition for Rehearing or, in the Alternative, Motion for Leave to Answer and Answer of Virginia Electric and Power Company. On August 18, 2017, the Sierra Club filed a Motion for Leave to File a Response and Response to the Answers by Dominion Energy Virginia and PJM. On September 15, 2017, the DOE issued an order dismissing the Sierra Club's Motion as moot because the DOE order for which the Sierra Club sought rehearing expired on September 14, 2017. On August 24, 2017, PJM submitted a request to the DOE for a 90-day renewal of the DOE Order. On September 14, 2017, the DOE issued a second 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("2d DOE Order"). On October 5, 2017, the Sierra Club filed a Motion to Intervene and Petition for Rehearing with DOE regarding the 2d DOE Order. On November 6, 2017, the DOE denied the Sierra Club's Petition for Rehearing. On November 29, 2017, PJM submitted a request to the DOE for a 90-day renewal of the 2d DOE Order. On December 13, 2017, the DOE issued a third 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("3d DOE Order"). On February 20, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 3d DOE Order. On March 13, 2018, the DOE issued a fourth 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("4th DOE Order"). On May 21, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 4th DOE Order. On June 8, 2018, the DOE issued a fifth 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("5th DOE Order"). On August 17, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 5th

DOE Order. On September 5, 2018, the DOE issued a sixth 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("6th DOE Order"). On November 13, 2018, PJM submitted a request to the DOE for a 90-day renewal of the 6th DOE Order. On December 6, 2018, the DOE issued a seventh 90-day emergency order pursuant to Section 202(c) of the Federal Power Act ("7th DOE Order"). On February 8, 2019, PJM plans to request further renewals of the DOE emergency orders on a rolling basis until the Certificated Project is placed into service. While this is not a long-term solution to the reliability issues, Dominion Energy Virginia supports PJM's action and the DOE decision, and will work to ensure the units' availability as required, submitted a request to the DOE for a 30-day renewal of the 7th DOE Order, for the period of March 9, 2019, through April 8, 2019.

14. On June 29, 2015, the United States Supreme Court ("Supreme Court") in *Michigan, et al. v. Environmental Protection Agency, et al.*, 576 U.S. __ (2015), reversed and remanded (by a 5-4 vote) the EPA's MATS regulation to the United States Court of Appeals for the D.C. Circuit Court ("D.C. Court of Appeals") for further proceedings consistent with the Supreme Court's Opinion. This decision does not change the Company's plans to close coal units at Yorktown Power Station or the need to construct the Certificated Project by 2017. The Court's ruling required that EPA consider the cost of implementation. The decision neither vacated the rule nor placed a stay on its implementation. On July 31, 2015, the Supreme Court formally sent the litigation back to the D.C. Court of Appeals, to decide whether to vacate or leave in place the MATS rule while the EPA works to address the Supreme Court decision.

15. On November 20, 2015, in response to the Supreme Court decision, the EPA proposed a supplemental finding⁹ that consideration of cost does not alter the agency's previous

⁹ See <http://www.gpo.gov/fdsys/pkg/FR-2015-12-01/pdf/2015-30360.pdf>.

conclusion that it is appropriate and necessary to regulate coal- and oil-fired electric utility steam generating units ("EGUs") under Section 112 of the CAA. The proposed supplemental finding was published for public comment on December 1, 2015. 80 Fed. Reg. 75025 (Dec. 1, 2015). The public comment period closed on January 15, 2016.

16. On December 15, 2015, the D.C. Court of Appeals in *White Stallion Energy, LLC v. Environmental Protection Agency*, No. 12-1100, 2015 U.S. App. LEXIS 21819 (D.C. Cir. 2015) issued an order remanding the MATS rulemaking proceeding back to EPA without vacatur. This action means that the MATS rule remains applicable and effective. The D.C. Court of Appeals noted that EPA had represented it was on track to issue by April 15, 2016, a final finding regarding its consideration of cost. EPA officially published a final rule on April 25, 2016.

17. On August 29, 2018, EPA announced that it will move ahead with a draft proposal to reconsider the MATS rule. The reconsideration proposal will address whether it was "appropriate and necessary" to regulate toxic emissions from power plants and will reevaluate the standards set by the rule itself. On ~~December 27, 2018, EPA issued (but has not yet~~ officially February 7, 2019, EPA published) a proposed rule revising the "appropriate and necessary" finding regarding the MATS rule, concluding that it is not "appropriate and necessary" to regulate hazardous air pollution ("HAP") emissions from power plants under Section 112 of the CAA.¹⁰ Specifically, EPA proposes to find that a "proper" consideration of costs demonstrates that the total cost of compliance with MATS is larger than the monetized HAP benefits of the rule, and thus MATS could not be considered "appropriate and necessary." Notwithstanding this revised finding, EPA is proposing that the MATS rule would remain in place, citing legal precedent in *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), that a negative "appropriate and

¹⁰ See https://www.epa.gov/sites/production/files/2018-12/documents/fimmatsfindingandtrc_12_2018wdisc.pdf.

necessary" finding cannot by itself remove a source category from regulation. In the proposed new finding, EPA would not remove or "de-list" coal- and oil-fired power plants from the list of affected source categories for regulation under CAA Section 112 and would leave MATS in place. The proposal also addresses the CAA requirement for EPA to conduct a residual risk and technology review for power plants, which is due for completion by 2020. EPA's proposal concludes that (i) the residual risks due to emissions of air toxics from power plants are acceptable and the current standards (*i.e.*, MATS) provide an ample margin of safety to protect public health; and (ii) no new developments in HAP emission controls to achieve further cost-effective emissions reductions were identified under the technology review. Therefore, EPA is proposing that revisions to tighten the limits imposed under MATS are not warranted at this time. EPA will accept public comment on the proposal ~~for 60 days following official publication of the proposal in the Federal Register~~ through April 8, 2019. A final rule on this proposal could be issued later this year.

18. On December 1, 2015, the Company filed with the Commission a motion to extend the date for completion and placement in service of the Certificated Project to the date twenty (20) months after the date on which the Corps issues a construction permit for the Certificated Project. On December 22, 2015, the Commission issued an Order granting the Company's motion to extend.

Plans for Maintaining System Reliability in the North Hampton Roads Area

19. In order to ensure reliability for the Peninsula while the Surry-Skiffes Creek Line is being constructed, the Company is conducting a rigorous inspection and maintenance program ("Inspection Program"). The focus of the Inspection Program is transmission lines and stations for assets that directly serve the Peninsula. This includes, but is not limited to, the lines and stations

from Chickahominy east to Newport News, as well as lines from Surry and Chuckatuck that feed into the southern end of the Peninsula. The Inspection Program focuses on the human performance factor that will be emphasized consistently over the work period to ensure the Electric Transmission and Station workforce involved in supporting the assets on the Peninsula are cognizant of the ongoing construction. The Inspection Program will also consist of a complete evaluation of all abnormal equipment logs that require equipment maintenance or replacement in order to ensure that all equipment is in-service, and infrared reviews of stations and transmission lines prior to and during long critical outages to identify any weak links in the system that need attention to prevent unplanned outage events. More frequent aerial and foot patrols of transmission lines and stations will also be incorporated into the Inspection Program. Lastly, the outages required to address any outstanding equipment issues will be scheduled around the necessary planned outages to support the construction of the Certificated Project to limit the overall system exposure.

20. Additional inspection and maintenance work that is currently being conducted as part of the Inspection Program includes performing substation inspections quarterly; augmenting quarterly inspections with Technical Oversight Inspections of select stations; increasing infrared inspections of affected substations; performing infrared inspections every two weeks if load exceeds 18,000 MW; and reviewing all Corrective & Preventative Maintenance orders for substation equipment and relay systems to ensure they are completed or can be deferred during construction of the Certificated Project.

21. Foundation work on the existing transmission lines at the James River Bridge was completed at the end of 2015. Additional inspection and maintenance work also was performed prior to construction of the Certificated Project. This additional future work under the Inspection

Program included the following: all line switches were inspected and any necessary maintenance performed; all questionable compression conductor connections were inspected and any necessary repairs were made prior to commencement of work; one month prior to beginning work, a foot patrol was done on the four 230 kV lines serving the Peninsula, and any issues found were corrected prior to commencement of work; one week prior to beginning work, an aerial patrol was done on the four 230 kV lines serving the Peninsula, and any issues found were corrected prior to commencement of work; and bi-weekly aerial patrols will be done throughout the construction of the Certificated Project on these four 230 kV lines to identify any issues that may have surfaced since the previous patrol. The bi-weekly aerial patrols will specifically look for equipment integrity issues identified through visual inspection, corona camera, and infrared camera; and any third-party work on or near the right-of-way with a potential threat to the lines, which will be identified and addressed accordingly.

22. The plan for maintaining system reliability for the Peninsula will include careful planning of transmission outages and minimum work on assets on the Peninsula while the planned outages to support the construction of the Certificated Project are underway. Under some unplanned event scenarios, the reliability plan must include shedding of load in the amounts necessary to reduce stress on the system below critical demand levels. The shedding of load could occur in some instances at system load levels well below peak demand levels, on the order of 16,000 MW or higher. The exact system load level, load shed amounts and locations will be dependent on the circumstances that exist on the system at the time.

23. To minimize the potential for cascading outages to occur due to the unavailability of Yorktown Units 1 and 2 and until the proposed Skiffes Creek Project is in service, the Company has sought and received approval from SERC Reliability Corporation and PJM to install a

Remedial Action Scheme ("RAS") beginning April of 2017. The RAS will reduce the likelihood of cascading outages from occurring by removing from service approximately 150,000 customers on the Peninsula, but would only be activated if certain contingency conditions occur. The RAS will take less than one second to make this determination and actually remove from service the affected customers. In the event the RAS is activated, the Company and PJM's System Operators may initiate rotating outages on the Peninsula until the transmission system can be returned to a normal state. Notwithstanding the installation of the RAS, the Company is continuing to evaluate temporary measures for managing system operating conditions in order to minimize the need to activate the RAS.

24. The Company will continue to report to the Commission material developments of its plans for maintaining system reliability on the schedule set forth in the Order Directing Updates.

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Respectfully submitted,
VIRGINIA ELECTRIC AND POWER COMPANY

By: _____

Lisa S. Booth
David J. DePippo
Dominion Energy Services, Inc.
120 Tredegar Street, Riverside 2
Richmond, Virginia 23219
(804) 819-2288 (phone)
(804) 819-2411 (phone)
lisa.s.booth@dominionenergy.com
david.j.depippo@dominionenergy.com

Vishwa B. Link
Stephen H. Watts, II
Jennifer D. Valaika
McGuireWoods LLP
Gateway Plaza
800 East Canal Street
Richmond, Virginia 23219-3916
(804) 775-4330 (phone)
(804) 775-4357 (phone)
(804) 775-1051 (phone)
vlink@mcguirewoods.com
swatts@mcguirewoods.com
jvalaika@mcguirewoods.com
Counsel for Virginia Electric and Power Company
February 6, ~~2019~~ 2019

CERTIFICATE OF SERVICE

I hereby certify that on this 27th day of February, 2019, copies of the foregoing were hand delivered, electronically mailed, and/or mailed first class postage prepaid to:

William H. Chambliss
K. Beth Clowers
Alisson Klaiber
State Corporation Commission
1300 E. Main St., Tyler Bldg., 10th Fl.
Richmond, VA 23219
william.chambliss@scc.virginia.gov
beth.clowers@scc.virginia.gov
alisson.klaiber@scc.virginia.gov

Timothy E. Biller
Richard D. Gary
Hunton & Williams LLP
Riverfront Plaza, E Tower
951 E. Byrd Street
Richmond, Virginia 23219
TBiller@hunton.com
rgary@hunton.com

Michael J. Quinan
Cliona M. Robb
Christian & Barton
909 E. Main St., Suite 1200
Richmond, VA 23219
mquinan@cblaw.com
crobb@cblaw.com

Patrick A. Cushing
Williams Mullen
200 South 10th St., Suite 1600
Richmond, VA 23219
pcushing@williamsmullen.com

Andrew R. McRoberts
Sands Anderson
1111 E. Main St., Suite 2400
Richmond, VA 23218-1320
amcroberts@sandsanderson.com

Adam Kinsman
James City County
101-C Mounts Bay Road
Williamsburg, VA 23187-8784
adam.kinsman@jamescitycountyva.gov

B. Randolph Boyd
Randolph, Boyd, Cherry and Vaughan
14 East Main Street
Richmond, VA 23219
rboyd@rbcvlaw.com

James River Association
c/o Jameson Brunkow
Lower James RIVERKEEPER
4833 Old Main St.
Richmond, VA 23231

Brian E. Gordineer
Piney Grove
P.O. Box 242
Williamsburg, VA 23187-0242
brian@pineygrove.com

M.A. Bradshaw
P.O. Box 456
Toano, VA 23168
anabradshaw@aol.com

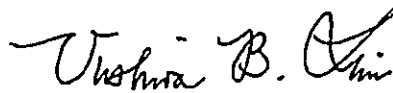
James Patrick Guy II
Garland S. Carr
LeClair Ryan PC
4201 Dominion Blvd., Suite 200
Glen Allen, VA 23060
james.guy@leclairryan.com
garland.carr@leclairryan.com

Elizabeth L. White
Sands Anderson PC
P.O. Box 1998
Richmond, VA 23218
EWhite@sandsanderson.com

David O. Ledbetter
Judith F. Ledbetter
16530 The Glebe Lane
Charles City, VA 23030
mossie2@gmail.com

Mark Ringhausen
VP of Engineering
Old Dominion Electric Cooperative
4201 Dominion Blvd., Suite 300
Glen Allen, VA 23060
MRinghausen@odec.com

William C. Cleveland
Caleb A. Jaffe
Frank Rambo
Southern Environmental Law Center
201 W. Main St., Suite 14
Charlottesville, VA 22902-5065
cjaffe@selcva.org
frambo@selcdc.org



Virginia B. Chini

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
CALCULATION OF ANNUITY FACTOR FOR EDIT
LIABILITY RIDER
For the Test Year Ended December 31, 2018

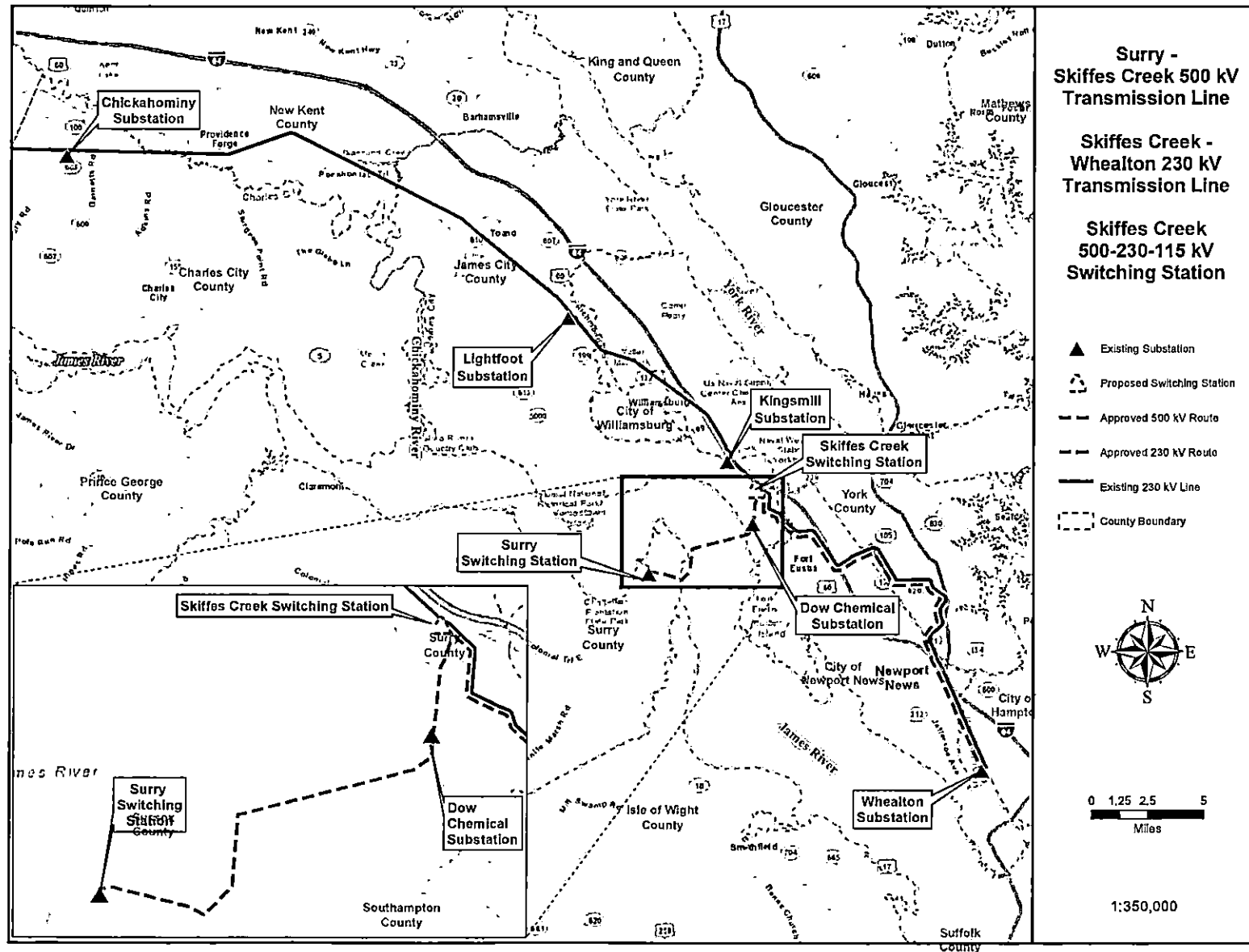
Boswell Exhibit I
Schedule 1(a)

Line No.	Item	Amount
	<u>Annuity Factor</u>	
1	Number of years	5 ^{1/}
2	Payment per period	1
3	After tax rate of return (L9)	6.150%
4	Present value of 1 dollar over number of years with with 1 payment per year	4.1952
5	1 plus (interest rate divided by two)	1.0308
6	Annuity factor (L4 x L5)	<u>4.3244</u>

	Capital Structure (a)	Cost Rates (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/}	4.44% ^{4/}	2.22%
8	Common equity	50.00% ^{3/}	9.00% ^{5/}	4.50%
9	Total	<u>100.00%</u>	<u>6.72%</u>	<u>6.150%</u>

- 1/ Rider period recommended by Public Staff.
2/ Johnson Exh bit I, Schedule 1-2, Column (a), Line 2.
3/ Johnson Exh bit I, Schedule 1-2, Column (a), Line 3.
4/ Johnson Exh bit I, Schedule 1-2, Column (b), Line 2.
5/ Johnson Exh bit I, Schedule 1-2, Column (b), Line 3.
6/ Column (a) times Column (b).
7/ Column (c) times 1 minus the composite income tax rate of 25.6228%.
8/ Amount from Column (c).

I/A



F/A

DOMINION ENERGY VIRGINIA ANNUAL PROJECT COST REPORT
REPORTING PERIOD ENDING 06/30/2019

PROJECT DESCRIPTION						
SCC Case Number	DEV Project Number	PJM RTEP #	Project Description	Construction Start Date	In-Service Date identified in Final Order	Current In-Service Date
PUE-2012-00029	992245	b1905.1-b1905.9	Surry-Skiffes Creek-Wheaton	October 2013	12/31/2015	2/26/2019

Please Note: 'Construction', and 'Material', and 'Other (Army Corps MOA)' columns are highlighted

ACTUAL/ESTIMATED COSTS (\$)											TOTAL COST VARIANCE	COMMENTS/REASON FOR DEVIATIONS EXCEEDING +/-10%
	Construction	Removal**	Engineering Services	Material	Land & Land Rights	Support Services	Other (Army Corps MOA)	Salvage	Project Costs Prior to AFE Approval	Total		
SCC Application Filed Cost (a)	\$64,540,515	\$3,797,217	\$2,456,838	\$73,449,943	\$636,903	\$6,063,258	\$0	-\$344,673		\$150,600,000		U.S. Army Corps of Engineers federal permit delay and associated costs, including mitigation
Final Order Cost Estimate (b)	\$64,540,515	\$3,797,217	\$2,456,838	\$73,449,943	\$636,903	\$6,063,258	\$0	-\$344,673		\$150,600,000	\$0	
Updated Estimate (c) 2018YE	\$95,888,924	\$5,375,609	\$5,885,432	\$98,175,026	\$4,857,618	\$20,057,460	\$95,247,875	-\$487,944		\$325,000,000	\$174,400,000	
Updated Estimate (c) 2019YE	\$167,085,586	\$3,797,217	\$7,138,498	\$112,967,341	\$5,055,318	\$33,922,076	\$105,378,637	-\$344,673		\$435,000,000	\$130,000,000	
Actual Expenditure to date (d)	\$171,711,768	\$1,355,140	\$7,498,206	\$112,556,412	\$5,073,168	\$32,917,195	\$105,611,862	-\$222,355	\$2,128,021	\$438,629,417	Upon Project completion, calculated as (d) - (b)	

** cost of removal stated on this report with 2018YE actual costs to accommodate a conversion in Fixed Asset reporting software. All other costs are stated through the defined reporting period ending.

List of overheads included in the conceptual estimate(s) identified above:

Conceptual estimate predates current estimating software. Below is a representative list of overheads.

VA Power Labor Surcharge, VA Power Labor AFUDC, DTECH Labor Surcharges, DTECH Labor AFUDC, Lump Sum Labor Surcharges, Lump Sum Labor AFUDC, External/Contractor Labor Surcharge, External/Contractor Labor AFUDC, Contractor Supplied Material Sales Tax, Contractor Supplied Material Surcharges, Contractor Supplied Material AFUDC, Stock Material Sales Tax, Stock Material Surcharge, Stock Material AFUDC, Non Stock Material Sales Tax, Non Stock Material Surcharges, Non Stock Material AFUDC, Equipment Surcharges, Equipment AFUDC, Other/Misc AFUDC

List of overheads in any updated estimate and the actual costs, if different from the Final Order Cost estimate

N/A

The total amount (total dollars) of contingency included in the conceptual estimates identified above.

Unavailable, see above. For projects of this vintage, estimates typically included 10% to accommodate detailed design and contingency.

DEFINITIONS:

Construction	Cost of construction labor and equipment (DEV and Contractor)
Removal	Cost to remove any existing facilities, e.g. in rebuild projects.
Engineering Services	Cost of any necessary engineering services, such as substation engineering or transmission engineering.
Material	Cost of material ordered for the project.
Land & Land Rights	Cost of acquiring easements, rights-of-way, forestry (e.g. danger tree clearance rights), or other land-related costs
Support Services	Cost of project management and various other groups that provide support services such as Siting, Permitting, Legal, and Encroachment Management. Includes DEV and Contractors
Salvage	Compensation received for any salvage, such as scrap value for tower steel, conductors and transformer oil
Project Costs Prior to AFE	
Approval	Funds spent prior to internal authorization for expenditure (primarily conceptual design costs).
Total	Sum of all cost categories above.
SCC Application Filed Cost	Estimated Project cost stated in Application. May be different from Final Order cost
Final Order Cost Estimate	Estimated Project cost based on Final Order.
Updated Estimate	Updated costs as at the end of the reporting period, caused by factors such as scope change, higher-than-estimated contractor costs, increases in land acquisition costs, or other unforeseen circumstances
Total Cost Variance	Cost Difference between Final Order Cost and either the Updated Estimate, the SCC Application Filed Cost, or the final Project cost once the project is completed.
Comments/Reasons for	
Deviations exceeding +/-10%	To be provided only if the Total Cost Variance between Final Order Cost and Updated Estimate (or final cost upon Project completion) exceeds +/-10% of the Final Order Cost Estimate.
Contingency adders	Specific categories of markup to allow for inherent unknowns causing cost increases (e.g. weather-related construction delays)

CALCULATION OF 1-CP ALLOCATION FACTOR 1

JURISDICTIONAL 1-CP ALLOCATOR						
Line No.	Item	Total System	Virginia Jurisdiction	Virginia Non-Juris.	FERC	NC Jurisdiction
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Winter Coincident Peak	17,887,645	15,142,090	1,574,418	235,220	935,916
2	North Anna	1,052,204	890,703	92,612	13,836	55,053
3	Peak Demand Less North Anna	16,835,441	14,251,387	1,481,806	221,384	880,863
4	Factor 1 (1-CP)	1.000000	0.846511	0.088017	0.013150	0.052322

CLASS 1-CP ALLOCATOR									
Line No.	Item	NC Total	Residential	SGS Co & Muni	LGS	6VP	NS	ST & OL	Traffic Lts
(a)	(b)								
5	Winter Coincident Peak	935,916	670,355	136,647	63,415	27,528	37,906	-	64
6	Factor 1 (1-CP)	1.000000	0.716256	0.146004	0.067757	0.029413	0.040501	-	0.000069

SUMMARY OUTPUT OF COST OF SERVICE MODEL
1-CP ALLOCATION OF PRODUCTION AND TRANSMISSION PLANT AND EXPENSES
REVENUE INCREASES COMPUTED TO ACHIEVE COMPANY RECOMMENDED ROR INDEX FOR EACH CLASS

PER BOOKS CLASS RATE OF RETURNS - FROM ITEM 45a								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$73,230,462	\$24,369,408	\$19,725,054	\$12,295,192	\$12,067,592	\$4,084,422	\$675,681	\$13,111
Rate Base	\$1,220,893,345	\$780,453,105	\$199,875,297	\$101,876,813	\$78,145,028	\$41,157,612	\$19,233,807	\$151,683
ROR	5.9981%	3.1225%	9.8687%	12.0687%	15.4426%	9.9239%	3.5130%	8.6438%
Index		0.52	1.65	2.01	2.57	1.65	0.59	1.44

PER BOOKS CLASS RATE OF RETURNS WITH ANNUALIZED REVENUE - FROM ITEM 45b								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$78,780,972	\$29,654,560	\$20,053,682	\$12,464,804	\$11,526,878	\$4,300,092	\$768,664	\$12,292
Rate Base	\$1,220,893,345	\$780,453,105	\$199,875,297	\$101,876,813	\$78,145,028	\$41,157,612	\$19,233,807	\$151,683
ROR	6.4527%	3.7997%	10.0331%	12.2352%	14.7506%	10.4479%	3.9964%	8.1037%
Index		0.63	1.67	2.04	2.46	1.74	0.67	1.35

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS BEFORE REVENUE INCREASE - FROM ITEM 45c, COL. 3								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$69,610,333	\$20,314,210	\$18,325,045	\$13,740,138	\$11,787,197	\$4,818,210	\$613,090	\$12,444
Rate Base	\$1,173,317,884	\$772,512,502	\$188,621,596	\$91,964,212	\$64,093,372	\$37,440,098	\$18,541,967	\$144,137
ROR	5.9328%	2.6296%	9.7152%	14.9407%	18.3907%	12.8691%	3.3065%	8.6331%
Index		0.44	1.64	2.52	3.10	2.17	0.56	1.46

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS AND AFTER REVENUE INCREASE TO MATCH ROR INDEX RECOMMENDATION FROM DENC								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Revenue Increase	\$30,015,216	\$51,927,500	(\$1,829,000)	(\$7,560,000)	(\$10,445,800)	(\$2,408,800)	\$332,150	(\$834)
Adjusted NOI	\$91,814,304	\$58,727,949	\$16,972,030	\$8,147,574	\$4,059,842	\$3,036,283	\$858,800	\$11,827
Rate Base	\$1,178,053,693	\$774,775,943	\$189,482,644	\$92,577,386	\$64,824,868	\$37,687,425	\$18,561,065	\$144,362
ROR	7.7937%	7.5800%	8.9570%	8.8008%	6.2628%	8.0565%	4.6269%	8.1923%
Index		0.97	1.15	1.13	0.80	1.03	0.59	1.05

IIA

Docket No. E-22, Sub 562
Nucor Exhibit JMT-4

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Aug 23 2019

CALCULATION OF RE-WEIGHTED ALLOCATION FACTOR 1
(Weight = 60% S/W Demand and 40% Average Demand)

JURISDICTIONAL RE-WEIGHT SWPA ALLOCATOR						
Line No.	Item	Total System	Virginia Jurisdiction	Virginia Non-Juris.	FERC	NC Jurisdiction
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Energy - Production	89,918,644	71,450,024	12,258,874	1,630,688	4,579,058
2	Average Demand	10,264,685	8,156,395	1,399,415	186,152	522,723
3	North Anna	603,800	479,784	82,318	10,950	30,748
4	Avg. Demand Less North Anna	9,660,885	7,676,611	1,317,097	175,202	491,975
5	Winter Coincident Peak	17,887,645	15,142,090	1,574,418	235,220	935,916
6	Summer Coincident Peak	16,958,384	14,061,656	1,881,941	296,382	718,405
7	Average CP Demand	17,423,014	14,601,873	1,728,180	265,801	827,161
8	North Anna	1,024,874	858,926	101,657	15,635	48,656
9	Avg. Peak Demand Less North Anna	16,398,140	13,742,947	1,626,523	250,166	778,505
10	Unweighted Average Demand Factor	1.000000	0.794607	0.136333	0.018135	0.050924
11	System Load Factor	40.0000%				
12	Weighted Average Demand Factor	0.400000	0.317843	0.054533	0.007254	0.020370
13	Unweighted Peak Demand Factor	1.000000	0.838080	0.099189	0.015256	0.047475
14	1 Minus System Load Factor	60.0000%				
15	Weighted Peak Demand Factor	0.600000	0.502848	0.059514	0.009153	0.028485
16	Factor 1 (Re-weighted SWPA)	1.000000	0.820691	0.114047	0.016408	0.048855

CLASS RE-WEIGHTED SWPA ALLOCATOR									
Line No.	Item	NC Total	Residential	SGS Co & Muni	LGS	6VP	NS	ST & OL	Traffic Lts
(a)	(b)								
17	Energy - Production	4,579,058	1,781,071	873,326	686,156	280,465	932,119	25,368	552
18	Average Demand	522,723	203,319	99,695	78,328	32,017	106,406	2,896	63
19	North Anna								
20	Avg. Demand Less North Anna	522,723	203,319	99,695	78,328	32,017	106,406	2,896	63
21	Winter Coincident Peak	935,916	670,355	136,647	63,415	27,528	37,906	-	64
22	Summer Coincident Peak	718,405	395,218	161,872	89,165	26,053	46,035	-	62
23	Average CP Demand	827,161	532,787	149,260	76,290	26,791	41,970	-	63
24	North Anna								
25	Avg. Peak Demand Less North Anna	827,161	532,787	149,260	76,290	26,791	41,970	-	63
26	Unweighted Average Demand Factor	1.000000	0.388960	0.190722	0.149846	0.061250	0.203561	0.005540	0.000121
27	System Load Factor	40.0000%							
28	Weighted Average Demand Factor	0.316311	0.155584	0.076289	0.059939	0.024500	0.081425	0.002216	0.000048
29	Unweighted Peak Demand Factor	1.000000	0.644115	0.180448	0.092231	0.032389	0.050740	-	0.000076
30	1 Minus System Load Factor	60.0000%							
31	Weighted Peak Demand Factor	0.569510	0.386469	0.108269	0.055339	0.019433	0.030444	-	0.000046
32	Factor 1 (Re-weighted SWPA)	1.000000	0.542053	0.184558	0.115277	0.043933	0.111868	0.002216	0.000094

I/A

**SUMMARY OUTPUT OF COST OF SERVICE MODEL
RE-WEIGHTED SWPA ALLOCATION OF PRODUCTION AND TRANSMISSION PLANT AND EXPENSES
REVENUE INCREASES COMPUTED TO ACHIEVE COMPANY RECOMMENDED ROR INDEX FOR EACH CLASS**

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AUG 23 2019

PER BOOKS CLASS RATE OF RETURNS - FROM ITEM 45a								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$77,014,241	\$37,857,678	\$17,891,946	\$9,611,679	\$7,805,742	\$3,297,486	\$537,886	\$11,823
Rate Base	\$1,185,825,943	\$661,654,237	\$215,490,629	\$125,053,960	\$115,099,776	\$47,933,392	\$20,431,223	\$162,726
ROR	6.4946%	5.7217%	8.3029%	7.6860%	6.7817%	6.8793%	2.6327%	7.2658%
Index		0.88	1.28	1.18	1.04	1.06	0.41	1.12

PER BOOKS CLASS RATE OF RETURNS WITH ANNUALIZED REVENUE - FROM ITEM 45b								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$82,469,626	\$41,793,995	\$18,490,128	\$10,124,203	\$7,785,850	\$3,617,107	\$647,161	\$11,181
Rate Base	\$1,185,825,943	\$661,654,237	\$215,490,629	\$125,053,960	\$115,099,776	\$47,933,392	\$20,431,223	\$162,726
ROR	6.9546%	6.3166%	8.5805%	8.0959%	6.7644%	7.5461%	3.1675%	6.8712%
Index		0.97	1.32	1.25	1.04	1.16	0.49	1.06

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS BEFORE REVENUE INCREASE - FROM ITEM 45c, COL. 3								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$73,222,525	\$32,176,232	\$16,798,578	\$11,457,692	\$8,137,846	\$4,152,917	\$487,927	\$11,333
Rate Base	\$1,134,867,439	\$640,372,162	\$206,158,330	\$117,893,941	\$105,387,331	\$45,028,862	\$19,870,322	\$156,491
ROR	6.4521%	5.0246%	8.1484%	9.7186%	7.7218%	9.2228%	2.4556%	7.2418%
Index		0.78	1.26	1.51	1.20	1.43	0.38	1.12

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS AND AFTER REVENUE INCREASE TO MATCH ROR INDEX RECOMMENDATION FROM DENC								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Revenue Increase	\$21,207,388	\$22,336,500	\$2,362,000	(\$1,385,000)	(\$2,011,100)	(\$681,600)	\$584,550	\$2,038
Adjusted NOI	\$88,910,841	\$48,699,817	\$18,545,885	\$10,433,128	\$6,650,120	\$3,648,699	\$920,352	\$12,840
Rate Base	\$1,139,603,248	\$642,477,762	\$207,053,337	\$118,550,004	\$106,184,454	\$45,289,523	\$19,891,432	\$156,735
ROR	7.8019%	7.5800%	8.9571%	8.8006%	6.2628%	8.0564%	4.6269%	8.1924%
Index		0.97	1.15	1.13	0.80	1.03	0.59	1.05

IIA

SUMMARY OUTPUT OF COST OF SERVICE MODEL
EQUALLY WEIGHTED SWPA ALLOCATION OF PRODUCTION AND TRANSMISSION PLANT AND EXPENSES*
REVENUE INCREASES COMPUTED TO ACHIEVE COMPANY RECOMMENDED ROR INDEX FOR EACH CLASS

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Aug 23 2019

PER BOOKS CLASS RATE OF RETURNS - FROM ITEM 45a								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$76,656,010	\$39,251,315	\$17,761,925	\$9,211,798	\$6,814,604	\$3,102,148	\$502,679	\$11,541
Rate Base	\$1,189,143,756	\$649,645,081	\$216,658,664	\$128,554,663	\$123,741,346	\$49,640,951	\$20,737,850	\$165,201
ROR	6.4463%	6.0420%	8.1981%	7.1657%	5.5071%	6.2492%	2.4240%	6.9880%
Index		0.94	1.27	1.11	0.85	0.97	0.38	1.08

PER BOOKS CLASS RATE OF RETURNS WITH ANNUALIZED REVENUE - FROM ITEM 45b								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$82,120,867	\$43,004,940	\$18,369,414	\$9,767,828	\$6,908,273	\$3,443,428	\$616,054	\$10,929
Rate Base	\$1,189,143,756	\$649,645,081	\$216,658,664	\$128,554,663	\$123,741,346	\$49,640,951	\$20,737,850	\$165,201
ROR	6.9059%	6.6198%	8.4785%	7.5982%	5.5828%	6.9367%	2.9707%	6.6157%
Index		1.03	1.32	1.18	0.87	1.08	0.46	1.03

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS BEFORE REVENUE INCREASE - FROM ITEM 45c, COL. 3								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Adjusted NOI	\$72,881,388	\$33,358,081	\$16,680,542	\$11,109,408	\$7,280,862	\$3,983,229	\$458,177	\$11,089
Rate Base	\$1,138,521,958	\$626,939,039	\$207,453,095	\$121,795,994	\$115,028,770	\$46,932,780	\$20,213,030	\$159,250
ROR	6.4014%	5.3208%	8.0406%	9.1213%	6.3296%	8.4871%	2.2667%	6.9634%
Index		0.83	1.26	1.42	0.99	1.33	0.35	1.09

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS AND AFTER REVENUE INCREASE TO MATCH ROR INDEX RECOMMENDATION FROM DENC								
	North Carolina Juris Amount	Residential	SGS, County, & Muni	Large General Service	Schedule NS	6VP	Street & Outdoor Lights	Traffic Lights
Revenue Increase	\$21,958,113	\$19,360,000	\$2,678,500	(\$449,300)	(\$35,400)	(\$244,600)	\$646,240	\$2,673
Adjusted NOI	\$89,125,059	\$47,679,779	\$18,661,981	\$10,777,035	\$7,254,675	\$3,802,284	\$936,238	\$13,067
Rate Base	\$1,143,257,767	\$629,023,986	\$208,348,929	\$122,456,710	\$115,838,276	\$47,195,776	\$20,234,592	\$159,498
ROR	7.7957%	7.5800%	8.9571%	8.8007%	6.2628%	8.0564%	4.6269%	8.1923%
Index		0.97	1.15	1.13	0.80	1.03	0.59	1.05

* Model uses an SWPA factor in which the weighting is 50% on average demand and 50% on summer/winter peak demand.

DOMINION NORTH CAROLINA POWER
DOCKET NO. E-22, SUB 532
TWELVE MONTHS ENDED DECEMBER 31, 2015
SUMMARY NORTH CAROLINA JURISDICTION AND CUSTOMER CLASS RATES OF RETURN
PER BOOKS, ANNUALIZED, FULLY ADJUSTED AND FULLY ADJUSTED WITH INCREASE

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Aug 12 2016

PER BOOKS CLASS RATE OF RETURNS - FROM ITEM 45a								
	North Carolina Juris. Amount	Residential	SGS, County & Muni	Large General Service	Sch. NS	GVP	Outdoor Street Lights	Traffic Lights
Adjusted NOI	\$57,958,136	\$31,327,939	\$13,056,369	\$2,554,171	\$2,169,579	\$7,509,639	\$1,314,896	\$15,343
Rate Base	\$1,155,093,887	\$607,105,199	\$225,978,429	\$149,387,074	\$112,977,074	\$41,553,266	\$17,988,333	\$124,511
ROR	5.02%	5.16%	5.78%	1.71%	1.92%	18.07%	7.32%	12.32%
Index		1.03	1.15	0.34	0.38	3.60	1.46	2.46

PER BOOKS CLASS RATE OF RETURNS WITH ANNUALIZED REVENUE - FROM ITEM 45b								
	North Carolina Juris. Amount	Residential	SGS, County & Muni	Large General Service	Sch. NS	GVP	Outdoor Street Lights	Traffic Lights
Adjusted NOI	\$57,698,203	\$30,920,622	\$12,702,920	\$7,178,221	\$2,280,319	\$3,198,488	\$1,402,762	\$14,871
Rate Base	\$1,155,093,887	\$607,105,199	\$225,978,429	\$149,387,074	\$112,977,074	\$41,553,266	\$17,988,333	\$124,511
ROR	5.00%	5.09%	5.62%	4.81%	2.02%	7.70%	7.81%	11.94%
Index		1.02	1.12	0.95	0.40	1.53	1.56	2.38

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS BEFORE REVENUE INCREASE - FROM ITEM 45c, COL. 3								
	North Carolina Juris. Amount	Residential	SGS, County & Muni	Large General Service	Sch. NS	GVP	Outdoor Street Lights	Traffic Lights
Adjusted NOI	\$53,235,927	\$26,980,155	\$12,481,539	\$7,220,649	\$2,201,568	\$3,103,319	\$1,234,788	\$13,789
Rate Base	\$1,050,572,870	\$551,149,948	\$205,915,014	\$135,435,038	\$103,110,012	\$37,883,240	\$15,966,276	\$113,340
ROR	5.07%	4.90%	6.05%	5.29%	2.14%	8.19%	7.73%	12.17%
Index		0.97	1.2	1.04	0.42	1.62	1.53	2.4

CLASS RATE OF RETURNS AFTER ALL RATEMAKING ADJUSTMENTS AND AFTER REVENUE INCREASE - FROM ITEM 45c, COLS. 4 & 5								
	North Carolina Juris. Amount	Residential	SGS, County & Muni	Large General Service	Sch. NS	GVP	Outdoor Street Lights	Traffic Lights
Revenue Increase	\$47,804,000	\$26,765,115	\$7,728,427	\$5,464,758	\$6,227,739	\$796,879	\$817,559	\$3,423
Adjusted NOI	\$82,311,597	\$43,258,734	\$17,183,402	\$10,544,873	\$5,888,011	\$3,598,612	\$1,732,092	\$15,873
Rate Base	\$1,054,930,870	\$553,183,209	\$206,777,054	\$137,062,220	\$103,677,613	\$38,103,545	\$16,013,324	\$113,904
ROR	7.80%	7.82%	8.31%	7.69%	5.78%	9.42%	10.82%	13.94%
Index		1.03	1.07	0.99	0.74	1.21	1.39	1.75

4. Judgmental Energy Weightings

Some regulatory commissions, recognizing that energy loads are an important determinant of production plant costs, require the incorporation of judgmentally-established energy weighting into cost studies. One example is the "peak and average demand" allocator derived by adding together each class's contribution to the system peak demand (or to a specified group of system peak demands; e.g., the 12 monthly CPs) and its average demand. The allocator is effectively the average of the two numbers: class CP (however measured) and class average demand. Two variants of this allocation method are shown in Tables 4-14 and 4-15.

TABLE 4-14
CLASS ALLOCATION FACTORS AND ALLOCATED
PRODUCTION PLANT REVENUE REQUIREMENT USING THE
1 CP AND AVERAGE DEMAND METHOD

Rate Class	Demand Allocation Factor - 1 CP MW (Percent)	Demand-Related Production Plant Revenue Requirement	Avg. Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	34.84	233,869,251	30.96	120,512,062	354,381,313
LSMP	37.25	250,020,306	33.87	131,822,415	381,842,722
LP	24.63	165,313,703	31.21	121,450,476	286,764,179
AG&P	3.29	22,078,048	3.22	12,545,108	34,623,156
SL	0.00	0	0.74	2,864,631	2,864,631
TOTAL	100.00	671,281,308	100.00	389,194,692	\$1,060,476,000

Notes: The portion of the production plant classified as demand-related is calculated by dividing the annual system peak demand by the sum of (a) the annual system peak demand, Table 4-3, column 2, plus (b) the average system demand for the test year, Table 4-10A, column 3. Thus, the percentage classified as demand-related is equal to $13591 / (13591 + 7880)$, or 63.30 percent. The percentage classified as energy-related is calculated similarly by dividing the average demand by the sum of the system peak demand and the average system demand. For the example, this percentage is 36.70 percent.

Some columns may not add to indicated totals due to rounding.

TABLE 4-15
CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION
PLANT REVENUE REQUIREMENT USING THE
12 CP AND AVERAGE DEMAND METHOD

Rate Class	Demand Allocation Factor - 12 CP MW (Percent)	Demand-Related Production Plant Revenue	Average Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	32.09	198,081,400	30.96	137,226,133	335,307,533
LSMP	38.43	237,225,254	33.87	150,105,143	387,330,397
LP	26.71	164,899,110	31.21	138,294,697	303,193,807
AG&P	2.42	14,960,151	3.22	14,285,015	29,245,167
SL	0.35	2,137,164	0.74	3,261,933	5,399,097
TOTAL	100.00	617,303,080	100.00	443,172,920	\$1,060,476,000

Notes: The portion of production plant classified as demand-related is calculated by dividing the annual system peak demand by the sum of the 12 monthly system coincident peaks (Table 4-3, column 4) by the sum of that value plus the system average demand (Table 4-10A, column 3). Thus, for example, the percentage classified as demand-related is equal to $10976 / (10976 + 7880)$, or 58.21 percent. The percentage classified as energy-related is calculated similarly by dividing the average demand by the sum of the average demand and the average of the twelve monthly peak demands. For the example, 41.79 percent of production plant revenue requirements are classified as energy-related.

Another variant of the peak and average demand method bases the production plant cost allocators on the 12 monthly CPs and average demand, with 1/13th of production plant classified as energy-related and allocated on the basis of the classes' KWH use or average demand, and the remaining 12/13ths classified as demand-related. The resulting allocation factors and allocations of revenue responsibility are shown in Table 4-16 for the example data.

TABLE 4-16
CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION
PLANT REVENUE REQUIREMENT USING THE 12 CP AND
1/13TH WEIGHTED AVERAGE DEMAND METHOD

Rate	Demand Allocation Factor - 12 CP MW (Percent)	Demand-Related Production Plant Revenue Requirement	Average Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	32.09	314,111,612	30.96	25,259,288	339,370,900
LSMP	38.43	376,184,775	33.87	27,629,934	403,814,709
LP	26.71	261,492,120	31.21	25,455,979	286,948,099
AG&P	2.42	23,723,364	3.22	2,629,450	26,352,815
SL	0.35	3,389,052	0.74	600,426	3,989,478
TOTAL	100.00	978,900,923	100.00	81,575,077	\$1,060,476,000

Notes: Using this method, 12/13ths (92.31 percent) of production plant revenue requirement is classified as demand-related and allocated using the 12 CP allocation factor, and 1/13th (7.69 percent) is classified as energy-related and allocated on the basis of total energy consumption or average demand.

Some columns may not add to indicated totals due to rounding.

C. Time-Differentiated Embedded Cost of Service Methods

Time-differentiated cost of service methods allocate production plant costs to baseload and peak hours, and perhaps to intermediate hours. These cost of service methods can also be easily used to allocate production plant costs to classes without specifically identifying allocation to time periods. Methods discussed briefly here include production stacking methods, system planning approaches, the base-intermediate-peak method, the LOLP production cost method, and the probability of dispatch method.

1. Production Stacking Methods

Objective: The cost of service analyst can use production stacking methods to determine the amount of production plant costs to classify as energy-related and to determine appropriate cost allocations to on-peak and off-peak periods. The basic

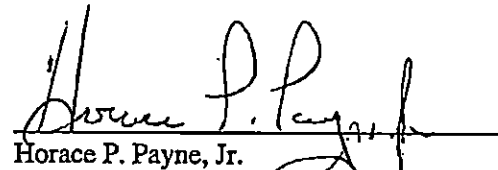
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Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 2

The following response to Question No. 3 of Nucor Data Request No. 2, dated April 12, 2019 has been prepared under my supervision.


Horace P. Payne, Jr.
Assistant General Counsel

Question No. 3:

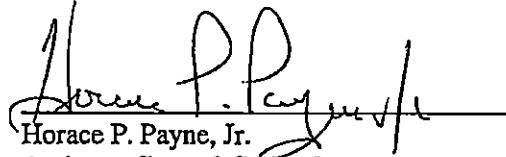
If Nucor were to relocate a portion (for example, twenty to forty percent) of Nucor Steel-Hertford's load from DENC's service territory, how would this impact the local community in northeastern North Carolina with regard to the multiplier effects (including the impact on local jobs, business revenues and tax revenues) resulting from Nucor's current load?

Response:

The Company recognizes Nucor as a valuable contributor to the economy in DENC's service territory and a valued customer but cannot speculate exactly how the relocation of any given percentage of its load would affect DENC's service territory.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 2

The following response to Question No. 4 of Nucor Data Request No. 2, dated April 12, 2019 has been prepared under my supervision.


Horace P. Payne, Jr.
Assistant General Counsel

Question No. 4:

If Nucor were to relocate a portion (for example, twenty to forty percent) of Nucor Steel-Hertford's load from DENC's service territory, how would this impact the state of North Carolina with regard to the multiplier effects (including the impact on local jobs, business revenues and tax revenues) resulting from Nucor's current load?

Response:


Similar to the Company's response to Question No. 3 of Nucor's Second Set, the Company recognizes Nucor as a valuable contributor to the economy in DENC's service territory and a valued customer but cannot speculate exactly how the relocation of any given percentage of its load would affect the state of North Carolina.

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Dominion Energy North Carolina 2019
NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 2

The following response to Question No. 17 of Nucor Data Request No. 2, dated April 12, 2019 has been prepared under my supervision.



Paul B. Haynes
Director - Regulation

Question No. 17:

In allocating generation-related capacity costs to a jurisdiction or intra-class, does the SWPA cost allocation method give equal weight to (1) peak load(s), and (2) energy consumption?

Response:

No, this is not the case for the 2018 test period. If the system load factor had been 50%, then the answer to this question would be yes. However, the system load factor was 58.9145%. The energy portion of the allocation factor was weighted by the system load factor, and the peak demand portion of the allocation factor was weighted by (1 minus the system load factor).

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Dominion Energy North Carolina 2019
NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 2

The following response to Question No. 21 of Nucor Data Request No. 2, dated April 12, 2019 has been prepared under my supervision.



Katherine Farmer
Senior Financial Analyst Specialist

Question No. 21


Does DENC invest in generation primarily in order to serve its annual or seasonal peak load(s)?
Explain your answer in detail.

Response:

The Company invests in generation to provide reliable electric service during all seasons. These investments help the Company meet its electric service obligations and manage the capacity performance risk in the PJM capacity market.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 4

The following response to Question No. 2 of Nucor Data Request No. 4, dated May 17, 2019 has been prepared under my supervision.


Paul B. Haynes
Director – Regulation
Dominion Energy Services, Inc.

Question No. 2:

Regarding DENC's response to NUC-2-27, the Company responded that "the allocation of rate base to the Schedule NS class would decline under a 1 CP methodology thereby increasing the class' ROR." Is it accurate to state that using the SWPA methodology instead of the 1 CP methodology has, or almost certainly has, a greater negative impact on Schedule NS (i.e., the allocation of rate base to Schedule NS increases) than on any other class of customers?

Response:

The use of the 1 CP methodology considers customer class loads during the 1 hour of the year when the Company's power supply obligation is the highest for the entire system. During this hour, the Company provided Nucor a price signal and request to curtail its furnace load under its current contract.

The use of the SWPA methodology considers customer class usage not only during the 1 hour of the year when the Company's power supply obligation is the highest, but also considers the other 8,759 hours in which the Company has a power supply obligation. The SWPA methodology's consideration of all other hours, many of which Nucor's load has not been requested to be curtailed, does result in a greater allocation of power supply plant costs and related expenses to the Schedule NS class than the 1 CP method.

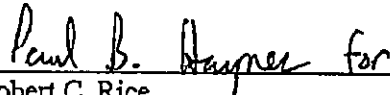
In terms of whether the Schedule NS class receives a greater relative allocation of cost under the SWPA methodology as compared to the 1 CP methodology, than any other class of customers, there is a greater negative relative cost impact, in terms of percentage, in the allocation of production plant cost to the street and outdoor lighting class. The Schedule NS class has the second most significant relative cost impact between use of the SWPA methodology, as proposed by the Company in this proceeding, and the 1 CP methodology.

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Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Nucor
Data Request No. 6

The following response to Question No. 10 of Nucor Data Request No. 6, dated July 9, 2019 has been prepared under my supervision.


Robert C. Rice
Manager – Regulation
Dominion Energy Services, Inc.

Question No. 10:

What is the size of the Schedule NS load relative to DENC's total load?

Response:

The Company is providing 2018 data due to the time provided for the response. Nucor can derive the pre-2018 data using the model provided in this response. For purposes of this data request the Company is defining "load" as generation supply load or Factor 1. For supporting data for this response see Attachment Nucor Set 3-6 which is a spreadsheet with formulas intact. The data for this response is found next to Factor 1 on the NC CLASS tab. The size of the Schedule NS load relative to DENC's retail load is 20.1216% for Energy and 4.0136% for Demand.

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AUG 23 2019

[illegible]

[illegible]

Actual kWh (Jan. - Dec., 2018):	1,028,025
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[illegible]

Actual kWh (Jan. - Dec., 2019)	514,013	7,977,419
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													Base Total
Planned:	Bulbs	0	0	0	0	0	0	0	0	0	0	0	127,975
Actual:	Bulbs	0	0	0	0	0	0	0	0	0	0	0	37,120
													29%

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied
2. The May 1, 2019 EM&V Report was filed with the NC Public Utilities Commission and included EM&V data through the end of 2018.
3. The EM&V data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEP (Standard Tracking Engineering Protocol) formulas used in preparing the EM&V data for 2018.
4. The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
5. Program measure life is 9.4 years (9 years, 5 months; or 113 months)

Company Supplemental Exhibit DRK-1
Schedule 1
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Actual kWh (Jan. - Dec., 2022):													Actual kWh (Jan. - Dec., 2023):												
73,600													118,077												
43	43	43	46	618	2	2	2	2	2	2	2	2	2	2	2	11	33								
0	0	0	0	150	13	13	13	3	3	0	1	25	15	14	11	9	120								
30%													354%												

Company Supplemental Exhibit DRK-1
Schedule 1
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Dominion Energy North Carolina
Docket No. E-22, Sub 562

Company Supplemental Exhibit DRK-1
Schedule 1
Page 9 of 50

With (Net) to North Carolina
Revenue Low Case: 100% (Year Savings) (Lowest with
assumed inflation and net to gross rates from May 1, 2019
E&P Report)

Scenario - Adjusted With (Net)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017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Company Supplemental Exhibit DRK-1
Schedule 1
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	2012												2013													
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
KWH [Net] In North Carolina Commercial HVAC - KWh /Year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)	28,365	18,067	-	-	-	-	-	-	-	69,133	-	-	110,566	-	-	-	-	-	-	-	-	-	-	-	-	110,566
Monthly - Adjusted kWh (Net)	Total Months													Total Months												
Jan, 2012	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	12	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	24	
Feb		1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	11	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	23	
Mar													10												22	
Apr													9												21	
May													8												20	
Jun													7												19	
Jul													6												18	
Aug													5												17	
Sep													4												16	
Oct										5,761	5,761	5,761	3	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	15	
Nov													2												14	
Dec													1												13	
Jan, 2013																									12	
Feb																									11	
Mar																									10	
Apr																									9	
May																									8	
Jun																									7	
Jul																									6	
Aug																									5	
Sep																									4	
Oct																									3	
Nov																									2	
Dec																									1	
Total (Cumulative by Month) - Adjusted kWh (Net)	2,364	3,453	3,453	3,453	3,453	3,453	3,453	3,453	3,453	3,453	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	
ENV GL Tracking																										
Schedule S	37%	279	408	408	408	408	408	408	408	1,089	1,089	1,089		1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	
Schedule GP (TOU)	11%	269	392	392	392	392	392	392	392	1,047	1,047	1,047		1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	
Schedule 10 (Variable Pricing)	63%	1,478	2,159	2,159	2,159	2,159	2,159	2,159	2,159	5,761	5,761	5,761		5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	
Schedule 30 - Public Authority	14%	330	494	494	494	494	494	494	494	1,317	1,317	1,317		1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	
		2,364	3,453	3,453	3,453	3,453	3,453	3,453	3,453	3,453	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	9,214	

Actual kWh (Jan. - Dec., 2012):														Actual kWh (Jan. - Dec., 2013):											
Planned:														Planned:											
Actual:														Actual:											
1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11%														11%											
63%														63%											
14%														14%											

Actual kWh (Jan. - Dec., 2015):	110,566
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[illegible]

[illegible]

2018												2019												Total
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
kWh (Net) in North Carolina																								110,566
Commercial HVAC - kWh/year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)																								110,566
																								110,566
Monthly - Adjusted kWh (Net)																								
Jan, 2012	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	2,364	84
Feb	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	83
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76
Oct	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	75
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73
Jan, 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	68
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Total (Cumulative by Month) - Adjusted kWh (Net)																								776,305
DNV GL Tracking																								
Schedule 5	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	1,089	84
Schedule 6 (TOU)	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	83
Schedule 10 (Variable Pricing)	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	5,761	75
Schedule 30 - Public Authority	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	1,317	81
																								776,305

Actual kWh (Jan. - Dec., 2018)												Actual kWh (Jan. - Dec., 2019)												55,283
																								776,305
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Schedule 1
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Actual kWh (Jan. - Dec., 2012):	1,793,188
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Participation

[illegible]

[illegible]

[illegible]

[illegible]

Actual kWh (Jan. - Dec., 2019):	1,371,734	18,483,273
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NOTES:

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied
2. The May 1, 2019 EM&V Report was filed with the NC Public Utilities Commission and included EM&V data through the end of 2018.
3. The EM&V data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEP (Standard Tracking Engineering Protocol) formulas used in preparing the EM&V data for 2018.
4. The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
5. Program measure life is 10 years (120 months)

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[illegible]

[illegible]

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[illegible]

- The birth savings are based on actual participation from Denmark, Haiti, Cambodia, Rwanda, Burkina Faso, and Senegal, with program planning, evaluation, and set-up costs calculated as percentages applied.
- The May 2015 IDH report was first filed with the UK Public Information and Freedom of Information (PIA) and then with the PIA of 2016.
- The IDH data collected for January 2011–June 2014 was prepared by Gary C. Smith for IDH, and the IDH data for January 2015–June 2014 was prepared by Gary C. Smith for IDH, and the IDH data for January 2015–June 2014 was prepared by Gary C. Smith for IDH.
- The IDH savings are calculated as the difference between the IDH savings for the IDH savings and the IDH savings for the IDH savings.
- The IDH savings are calculated as the difference between the IDH savings for the IDH savings and the IDH savings for the IDH savings.

MOTTS

Participation


Actual 1640 (Jan. - Dec., 2018): 1,699,300

Actual EWIN (Jan. - Dec., 2019): 609,819 4,728,361

[illegible]

Factor
7.09
5.18
751

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Actual kWh (Jan. + Dec., 2015):	 67,989
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[illegible]

[illegible]

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Dominion Energy North Carolina
Docket No. E-22, Sub 562


Company Supplemental Exhibit DRK-1
Schedule 1
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WNV (West) to North Carolina
Residential Heat Pump Incentive - WNV Heat Savings
(Compared with assumed reduction and net-to-gross rates
from May 1, 2018 ENEP Report)

Month/Year - Adjusted WNV (Net)

Month/Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015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Schedule 1
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Actual kWh (Jan. - Dec., 2014)										Actual kWh (Jan. - Dec., 2015)					635,108		
14	16	18	19	20	21	14	16	18	19	20	21	14	16	18	19	20	21
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total: 180					Total: 152					Total: 635,108							
Average: 18					Average: 15.2					Average: 52,925.67					613%		

Participation

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[illegible]

[illegible]

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2014													2015													
Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
kWh (Net) in North Carolina													kWh (Net) in North Carolina													
Non-Residential Duct Sealing and Testing - kWh/year													Non-Residential Duct Sealing and Testing - kWh/year													
Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)													Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)													
Monthly - Adjusted kWh (Net)													Monthly - Adjusted kWh (Net)													
Jan. 2014													Jan. 2014													
Feb.													Feb.													
Mar.													Mar.													
Apr.													Apr.													
May													May													
Jun.													Jun.													
Jul.													Jul.													
Aug.													Aug.													
Sep.													Sep.													
Oct.													Oct.													
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Dec.													Dec.													
Jan. 2015													Jan. 2015													
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Total (Cumulative by Month) - Adjusted kWh (Net)													Total (Cumulative by Month) - Adjusted kWh (Net)													
DWP GL Tracking													DWP GL Tracking													
Schedule 10													Schedule 10													
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Schedule 650													Schedule 650													

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	3354	3355	3356	3357	3358	3359	3360	3361	3362	3363	3364	3365	3366	3367	3368	3369	3370	3371	3372
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Company Supplemental Exhibit DRK-1
Schedule 1
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- The 14th sample is based on actual participation from Dominion North Carolina Power customers with program planning realization and feed-in cost adjustments supported.
- The 19th 2013 OASD Report was held working 19th Public Utilizing Commission and issued the 19th Data through the end of 2013.
- The 2014 Data was reflected for January 2014, 2019 was prepared by DNV GL using the 19th Data through the end of 2014.
- The 14th sample is inclusive of all 14 requests installed from program inception through June 30, 2013.
- Program summary data is via 1020 monthly.

2014													2015																								
Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	1	2	3	Total	Jan.	Feb.	March	April	May	6	7	8	9	10	11	12	13	14	15	Total								
kWh (Net) in North Carolina																																					
Non-Residential Energy Audit - kWh/year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2013 EMV Report)																																					
													65,429	427,300			487,729														1,796	89,383	62,319			641,227	
Monthly - Adjusted kWh (Net)													Total Months																Total Months								
Jan, 2014													12														12										
Feb													11														11										
Mar													10														10										
Apr													9														9										
May													8														8										
Jun													7														7										
Jul													6														6										
Aug													5														5										
Sep													4														4										
Oct													3	5,452	5,452	5,452	3	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	5,452	15				
Nov													2	35,192	35,192	2	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	35,192	14				
Dec													1			1														1							
Jan, 2015																																					
Feb																																					
Mar																																					
Apr																																					
May																																					
Jun																											150	150	150	150	150	150	150	7			
Jul																																					
Aug																											7,449	7,449	7,449	7,449	7,449	7,449	7,449	6			
Sep																											5,193	5,193	5,193	5,193	5,193	5,193	5,193	5			
Oct																																					
Nov																																					
Dec																																					
Total (Cumulative by Month) - Adjusted kWh (Net)													5,452	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,794	48,242	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436
DNI GL Tracking																																					
Schedule 10	23.80%													1,298	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673	9,673		
Schedule 20	0.12%													7	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	
Schedule 30	0.01%													1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6			
Schedule 43	0.01%													1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			
Schedule 5	17.97%													980	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303	7,303			
Schedule SP	54.11%													2,951	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994	21,994			
Schedule 6P	3.97%													215	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614	1,614			
													5,452	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,644	40,794	48,242	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436	53,436			
Actual kWh (Jan. - Dec., 2014):													86,741			Actual kWh (Jan. - Dec., 2015):													859,434								
Participation																																					
Planned:	3	3	2	3	3	3	3	3	3	4	4	3	37	3	3	2	3	3	3	3	3	3	3	3	3	4	4	3	78								
Actual:	0	0	0	0	0	0	0	0	0	2	14	0	18	0	0	0	0	0	0	0	1	17	60	0	0	0	0	0	211								
													43%																								

[illegible]

[illegible]

NOTES:

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program participation realization and net-to-gross adjustments assumptions applied
2. The July 1, 2018 EM&V Report was filed with the NC Public Utilities Commission and included B&A data through the end of 2017.
3. The LMRV data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEEP (Standard Training Engineering Protocol) formulas used in preparing the EM&V data for 2018.
4. The kWh savings are inclusive of all EEM measures installed from program inception through June 30, 2019.
5. Program measure life is 7 years (84 months).

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2015													2016													
Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
kWh (Net) in North Carolina																										
Non-Residential Heating, Cooling Efficiency - kWh/year																										
Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)																										
-	-	-	26,568	37,233		-	-	-	-	-	-	63,801	-	-	-	7,683	43,077	146,545	-	4,483	-	-	861	-	266,451	
Monthly - Adjusted kWh (Net)													Total Months													
Jan, 2015	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	24	
Feb	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	23	
Mar	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	22	
Apr			2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	9	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	21	
May			3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	8	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	20	
Jun												7													19	
Jul												6													18	
Aug												5													17	
Sep												4													16	
Oct												3													15	
Nov												2													14	
Dec												1													13	
Jan, 2016																									12	
Feb																									11	
Mar																									10	
Apr																									9	
May																									8	
Jun																									7	
Jul																									6	
Aug																									5	
Sep																									4	
Oct																									3	
Nov																									2	
Dec																									1	
Total (Cumulative by Month) - Adjusted kWh (Net):			2,214	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,957	6,547	21,759	21,759	22,132	22,132	22,132	22,132	22,132	22,132	
UNV GL Tracking																										
Schedule 10	6.80%	151	362	362	362	362	362	362	362	362	362	362	362	362	362	405	649	1,480	1,480	1,506	1,506	1,506	1,511	1,511		
Schedule 30	19.12%	423	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,017	1,139	1,825	4,160	4,160	4,231	4,231	4,231	4,231	4,245	4,245		
Schedule 42	17.34%	384	922	922	922	922	922	922	922	922	922	922	922	922	1,033	1,655	3,773	3,773	3,837	3,837	3,837	3,850	3,850	3,850		
Schedule 5	55.69%	1,255	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,377	5,412	12,334	12,334	12,546	12,546	12,546	12,587	12,587	12,587		
Schedule 5P	0.05%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
			7,214	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,317	5,957	6,547	21,759	21,759	22,132	22,132	22,132	22,132	22,132	22,132	
Actual kWh (Jan. - Dec., 2015):													44,748													
Actual kWh (Jan. - Dec., 2016):													183,778													
Participation																										
Planned:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Actual:	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	0	1	0	0	
													6%													
													12%													

2017												2018												Total
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
-	-	-	-	51,921	294	-	-	5,965	-	-	-	824,831	-	-	53,223	104,819	-	-	-	-	-	-	-	442,973
Total Months												Total Months												
-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	-	-	-	-	48
-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-	-	-	-	47
-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-	-	-	46
2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	33	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	2,214	44
3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	32	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	3,103	43
-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	-	-	-	-	-	-	42
-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	41
-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-	-	-	40
-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-	39
-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	38
-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	37
-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-	-	36
-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	35
-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	34
640	640	640	640	640	640	640	640	640	640	640	640	21	640	640	640	640	640	640	640	640	640	640	640	33
3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	20	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	3,590	32
12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	19	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	12,212	31
-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	30
374	374	374	374	374	374	374	374	374	374	374	374	17	374	374	374	374	374	374	374	374	374	374	374	29
-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	28
-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	27
72	72	72	72	72	72	72	72	72	72	72	72	14	72	72	72	72	72	72	72	72	72	72	72	26
-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	25
-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	24
-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	23
-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	22
-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	21
4,318.39	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	8	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	4,318	20
25	25	25	25	25	25	25	25	25	25	25	25	7	25	25	25	25	25	25	25	25	25	25	25	19
-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	18
-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	17
-	-	-	-	-	-	-	-	-	-	-	-	4	497	497	497	497	497	497	497	497	497	497	497	16
-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	15
-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	14
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	13
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	12
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	11
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	10
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	9
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	8
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	1

Actual kWh (Jan. - Dec., 2017):												823,186
Actual kWh (Jan. - Dec., 2018):												447,496

9	9	4	4	4	4	4	4	4	4	4	4	9	9	4	4	4	4	4	4	4	4	4	4	9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
												823,186												
												447,496												

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7. FIVE YEAR TOTAL FTE	6
8. FIVE YEAR TOTAL FTE ADJ	206
9. FIVE YEAR TOTAL FTE ADJ	20
10. FIVE YEAR TOTAL FTE ADJ	176

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied.
2. The May 1, 2019 (EM&V Report was filed with the NC Public Utilities Commission and included EM&V data through the end of 2018).
3. The EM&V data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEP (Standard Tracking Engineering (Protocol)) formulas used in preparing the EM&V data for 2018.
4. The EM&V data for the period July 2019 - June 2020 was prepared by DNV GL using the same STEP (Standard Tracking Engineering (Protocol)) formulas used in preparing the EM&V data for 2018.
5. Program measure life is 25.0 years (15 years, 6 months); or 180 months.

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	2015												2016												Total	
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		
kWh (Net) in North Carolina																										
Non-Residential Lighting Systems and Controls - kWh/year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2015 EMV Report)	-	-	-	22,633	-	-	-	-	83,023	250,816	10,080	28,466	395,028	8,381	26,371	637,359	172,657	-	184,152	59,441	604,152	39,871	231,672	102,896	266,516	2,728,497
Monthly - Adjusted kWh (Net)																										
Jan, 2015	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	24
Feb	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	23
Mar	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	22
Apr	-	-	-	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	9	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	21
May	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	20
Jun	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	19
Jul	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	18
Aug	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	17
Sep	-	-	-	-	-	-	-	-	6,919	6,919	6,919	6,919	4	6,919	6,919	6,919	6,919	6,919	6,919	6,919	6,919	6,919	6,919	6,919	6,919	16
Oct	-	-	-	-	-	-	-	-	20,902	20,902	20,902	3	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	20,902	15
Nov	-	-	-	-	-	-	-	-	840	840	840	2	840	840	840	840	840	840	840	840	840	840	840	840	840	14
Dec	-	-	-	-	-	-	-	-	-	-	-	1	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372	2,372	13	
Jan, 2016	-	-	-	-	-	-	-	-	-	-	-	-	698	698	698	698	698	698	698	698	698	698	698	698	698	12
Feb	-	-	-	-	-	-	-	-	-	-	-	-	2,198	2,198	2,198	2,198	2,198	2,198	2,198	2,198	2,198	2,198	2,198	2,198	11	
Mar	-	-	-	-	-	-	-	-	-	-	-	-	53,113	53,113	53,113	53,113	53,113	53,113	53,113	53,113	53,113	53,113	53,113	53,113	10	
Apr	-	-	-	-	-	-	-	-	-	-	-	-	14,388	14,388	14,388	14,388	14,388	14,388	14,388	14,388	14,388	14,388	14,388	14,388	9	
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Jun	-	-	-	-</																						

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NOTES:

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied.
2. The May 1, 2019 ENM&V Report was filed with the NC Public Utilities Commission and included ENM&V data through the end of 2018.
3. The kWh savings reflected for January 2019 was prepared by ENM&V Q1, using the same sTRM (Standard Tracking Instruction Protocol) formulae used in preparing the ENM&V data for 2018.
4. The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
5. Program measure life is 9.0 years (9 years, 0 months; or 108 months)

2018													2019																
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total				
-	-	-	-	-	-	-	3,613	-	-	-	-	3,613	-	-	-	-	-	-	-	-	-	-	-	-	3,613				
Monthly - Adjusted kWh (Net)													Total Months															Total Months	
Jan, 2018	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	18				
Feb	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	17				
Mar	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	16				
Apr	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	15				
May	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	14				
Jun	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	13				
Jul	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	12				
Aug	-	-	-	-	-	-	301	301	301	301	301	5	301	301	301	301	301	301	301	301	301	301	301	301	11				
Sep	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	10				
Oct	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	9				
Nov	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	8				
Dec	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7				
Jan, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6				
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5				
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4				
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3				
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2				
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Total (Cumulative by Month) - Adjusted kWh (Net)													301	301	301	301	301	301	301	301	301	301	301	301	301				
EMV GL Tracking													301	301	301	301	301	301	301	301	301	301	301	301	301				
Schedule 3													301	301	301	301	301	301	301	301	301	301	301	301	301				
100%													301	301	301	301	301	301	301	301	301	301	301	301	301				

Summary Total kWh

3,613

Total Months

18

Summary Total kWh

3,613

Total Months

18

Summary Total kWh

3,613

Total Months

18

Actual kWh (Jan. - Dec., 2018):												1,505		Actual kWh (Jan. - Dec., 2019):												1,876		3,312																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Participation	Planned (sq. ft.)	7,992	7,992	7,992	7,992	7,992	7,992	7,992	7,992	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991	7,991

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WWh (Net) in North Carolina

Residential Income and Age Qualifying Items Improvement -
WWh/Year Savings (Derived with assumed residential and
net-to-gross rates from May 1, 2019 EVM Report)

Monthly - Adjusted WWh (Net)

Jan, 2016

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan, 2017

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Jan, 2018

Feb

Mar

Apr

May

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Jul

Aug

Sep

Oct

Nov

Dec

Jan, 2019

Feb

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Apr

May

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Jul

Aug

Sep

Oct

Nov

Dec

Jan, 2020

Feb

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Apr

May

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Aug

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Oct

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Dec

Jan, 2021

Feb

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May

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Jan, 2022

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May

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Jan, 2023

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Jan, 2024

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Oct

Nov

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Jan, 2025

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Jan, 2026

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Jan, 2027

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Jan, 2028

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Jan, 2029

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Jan, 2031

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Jan, 2032

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Jan, 2033

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Jan, 2034

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Jan, 2035

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Jan, 2036

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Jan, 2037

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Jan, 2038

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Jan, 2039

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Jan, 2040

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Jan, 2041

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Jan, 2042

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Jan, 2043

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Jan, 2044

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Jul

Aug

Sep

Oct

Nov

Dec

Jan, 2045

Feb

Mar

Apr

May

Jun

Jul

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Total Males	
	178,925

200000000 426,034	True-up
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Actual kWh (Jan. - Dec., 2019):	87,442	425,034
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2003 Total 7,379
2002-2003 652
2001-2002 319
2000-2001 496

NOTES:

1. The kWh savings are based on actual participation from Dominion North Carolina Power customers with program participation realization and net-to-gross adjustments assumptions applied.
2. The May 1, 2019 IAWB report was filed with the N.C. Public Utilities Commission and included IMAK data through the end of 2018.
3. The IMAK data reflected for January 2019 - June 2019 was prepared by DOE using the same STEEP Standard Training Engineering Protocol formulas used in preparing the IMAK data for 2018.
4. The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
5. Program measure life is 14 years (14 years, 0 months), or 168 months; for 2015-2017 and 15 years (15 years, 0 months, or 180 months) after 2018.

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Actual kWh (Jan. - Dec., 2017):	39,108	Actual kWh (Jan. - Dec., 2018):	615,769
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[illegible]

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	2019												
	20	21	22	23	24	25	26	27	28	29	30	31	
kWh (Net) in North Carolina	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Non-residential Small Business Improvement - kWh /year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)	86,055	150,942	1,218	99,687	-	77,737							1,501,155
													1,501,155
Monthly - Adjusted kWh (Net)													Total Months
Jan, 2017	-	-	-	-	-	-	-	-	-	-	-	-	30
Feb	-	-	-	-	-	-	-	-	-	-	-	-	29
Mar	-	-	-	-	-	-	-	-	-	-	-	-	28
Apr	-	-	-	-	-	-	-	-	-	-	-	-	27
May	-	-	-	-	-	-	-	-	-	-	-	-	26
Jun	1,049	1,049	1,049	1,049	1,049	1,049							25
Jul	3,982	3,982	3,982	3,982	3,982	3,982							24
Aug	-	-	-	-	-	-							23
Sep	-	-	-	-	-	-							22
Oct	-	-	-	-	-	-							21
Nov	-	-	-	-	-	-							20
Dec	7,873	7,873	7,873	7,873	7,873	7,873							19
Jan, 2018	-	-	-	-	-	-							18
Feb	2,963	2,963	2,963	2,963	2,963	2,963							17
Mar	1,746	1,746	1,746	1,746	1,746	1,746							16
Apr	2,643	2,643	2,643	2,643	2,643	2,643							15
May	17,548	17,548	17,548	17,548	17,548	17,548							14
Jun	17,101	17,101	17,101	17,101	17,101	17,101							13
Jul	8,161	8,161	8,161	8,161	8,161	8,161							12
Aug	-	-	-	-	-	-							11
Sep	-	-	-	-	-	-							10
Oct	25,309	25,309	25,309	25,309	25,309	25,309							9
Nov	-	-	-	-	-	-							8
Dec	2,085	2,085	2,085	2,085	2,085	2,085							7
Jan, 2019	7,171	7,171	7,171	7,171	7,171	7,171							6
Feb	-	12,578	12,578	12,578	12,578	12,578							5
Mar	-	-	101	101	101	101							4
Apr	-	-	-	8,307	8,307	8,307							3
May	-	-	-	-	-	-							2
Jun	-	-	-	-	-	6,478							1
Jul	-	-	-	-	-	-							
Aug	-	-	-	-	-	-							
Sep	-	-	-	-	-	-							
Oct	-	-	-	-	-	-							
Nov	-	-	-	-	-	-							
Dec	-	-	-	-	-	-							
DNV GL Tracking	97,631	110,209	110,311	118,618	118,618	125,096							1,335,351 True-up
Schedule 5	97,631	110,209	110,311	118,618	118,618	125,096							

Actual kWh (Jan. - Dec., 2019):	680,484	1,335,351
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Participation	Planned:	6	5	5	9	5	5						31
	Actual:	3	2	1	6	0	4						18

Total	176
Actual	59
Participation	47%

NOTES:

- The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied
- The May 1, 2019 EM&V Report was filed with the NC Public Utilities Commission and included EM&V data through the end of 2018.
- The EM&V data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEP (Standard Tracking Engineering Protocol) formulas used in preparing the EM&V data for 2018.
- The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
- Program measure life is 14.0 years (14 years, 0 months; or 168 months).

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	2017	2018
Jan	1	6
Feb	2	7
Mar	3	8
Apr	4	9
May	5	10
Jun		11
Jul		12
Aug		13
Sep		14
Oct		15
Nov		16
Dec		17

	2017	2018
Jan	13,065	1,882,812
Feb	382,438	27,792
Mar	387,851	571,506
Apr	344,016	361,188
May	425,554	404,047
Jun		227,518
Jul		253,705
Aug		394,648
Sep		473,270
Oct		548,671
Nov		241,724
Dec		772,721
Total	609,769	6,103,246

[illegible][illegible]

kWh (Net) In North Carolina

Residential LED - kWh/year Savings (Deemed with assumed realization and net-to-gross rates from May 1, 2019 EMV Report)

2019											
18	19	20	21	22	23	24	25	26	27	28	29
Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

6,913,336

Total
6,913,336

Monthly - Adjusted kWh (Net)

							Total Months
Jan, 2017	-	-	-	-	-	-	30
Feb	-	-	-	-	-	-	29
Mar	-	-	-	-	-	-	28
Apr	-	-	-	-	-	-	27
May	-	-	-	-	-	-	26
Jun	-	-	-	-	-	-	25
Jul	-	-	-	-	-	-	24
Aug	11,080	11,080	11,080	11,080	11,080	11,080	23
Sep	31,886	31,886	31,886	31,886	31,886	31,886	22
Oct	32,304	32,304	32,304	32,304	32,304	32,304	21
Nov	45,335	45,335	45,335	45,335	45,335	45,335	20
Dec	36,296	36,296	36,296	36,296	36,296	36,296	19
Jan, 2018	19,791	19,791	19,791	19,791	19,791	19,791	18
Feb	47,625	47,625	47,625	47,625	47,625	47,625	17
Mar	21,932	21,932	21,932	21,932	21,932	21,932	16
Apr	33,671	33,671	33,671	33,671	33,671	33,671	15
May	18,995	18,995	18,995	18,995	18,995	18,995	14
Jun	24,434	24,434	24,434	24,434	24,434	24,434	13
Jul	32,054	32,054	32,054	32,054	32,054	32,054	12
Aug	39,443	39,443	39,443	39,443	39,443	39,443	11
Sep	45,748	45,748	45,748	45,748	45,748	45,748	10
Oct	20,227	20,227	20,227	20,227	20,227	20,227	9
Nov	64,477	64,477	64,477	64,477	64,477	64,477	8
Dec	50,814	50,814	50,814	50,814	50,814	50,814	7

Total (Cumulative by Month) - Adjusted kWh (Net):	576,111	576,111	576,111	576,111	576,111	576,111	576,111
DNV GL Tracking							
Schedule 1	571,819	571,819	571,819	571,819	571,819	571,819	571,819

8,166,007	True-up
-----------	---------

Actual kWh (Jan. - Dec., 2019):	3,458,668	8,166,007
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Participation	Planned (Bulbs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Actual (Bulbs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total
385,000
334,497
87%

NOTES:

- The kWh savings are based on actual participation from Dominion North Carolina Power customers with program planning realization and net-to-gross adjustments assumptions applied
- The May 1, 2019 EM&V Report was filed with the NC Public Utilities Commission and included EM&V data through the end of 2018.
- The EM&V data reflected for January 2018 - June, 2019 was prepared by DNV GL using the same STEP (Standard Tracking Engineering Protocol) formulas used in preparing the EM&V data for 2018.
- The kWh savings are inclusive of all EE measures installed from program inception through June 30, 2019.
- Program measure life is 20.0 years (20 years, 0 months; or 240 months).

DOMINION ENERGY NORTH CAROLINA
DOCKET NO. E-22, SUB 562
ENERGY AND FUEL EXPENSES
(8 + 4 Year End Projected)

Company Exhibit BEP-1
Schedule 2
Page 1 of 1

Normalized and Adjusted Energy and Fuel Expense based on Actual + Projected 12-Months Ended June 2019
(Company Ownership Only)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	12-Months Ended June 2019								June 2019		Normalized & Adjusted Fuel Expense at Applicable Rate (8) x (11)
	Expense (\$)	Generation (MWh)	Rate (\$/MWh)	Supply (%)	Ratio of Coal Oil, CT & CC NUG & Other MWh To Total Sum	Coal, Oil, CT & CC, NUG, Other, Nuclear Adj. and Growth MWh	Adjusted Generation (MWh)	Expense (\$)	Generation (MWh)	Rate (\$/MWh)	
Coal (1)	313,973,502	10,209,959	30.75	11.3	0.1669	59,152,510	9,869,892	39,177,455	1,186,626	30.75	(5) 303,499,179
Nuclear											
Sunny	84,587,007	14,117,079	5.99	15.7			14,117,079	7,879,153	1,216,094		
North Anna	91,232,300	14,098,591	6.47	15.7			14,098,591	7,827,546	1,214,887		
Total Nuclear	175,819,307	(4) 27,914,622	6.30	31.0			28,213,670	15,506,699	2,430,980	6.30	(5) 177,746,123
Heavy Oil	0	0	0.00	0.0	0.0000	59,152,510	0	6,716,689	138,525	0.00	(5) 0
CC & CT (2)	995,568,789	36,825,319	27.03	40.9	0.6018	59,152,510	35,598,690	69,750,846	2,912,060	27.03	(5) 962,232,591
Hydro	0	4,319,137		4.8			4,319,137	0	378,644		0
Solar	0	97,562		0.1			97,562		7,585		
Power Transactions											
NUG Fuel (6)	59,241,654	3,728,474	15.89	4.1	0.0609	59,152,510	3,604,281	7,998,059	367,450	15.89	(5) 57,268,351
PJM Purchases	338,418,531	10,427,002	32.46	11.6	0.1704	59,152,510	10,079,706	21,462,163	223,702	32.46	(7) 327,146,714
Marketer Percent Adj to 71%											(30,370,894)
NUG Expense Adj (8)											57,015,416
NCEMC Expense Adj (9)											(23,683,023)
Greenville Adjustment (10)											(22,684,198)
Adjustments											
Sales for Resale	(5,522,163)	(253,812)		-0.3			(253,812)	0	(33,308)		(5,522,163) (3)
Net	392,138,023	13,901,664	28.21	15.4			13,430,175	29,460,222	557,844		359,170,204
Pumping	0	(3,229,818)		-3.6			(3,229,818)	0	(383,829)		0
Energy Supply	1,877,499,620	80,038,445	20.85	100.0			88,201,746	160,611,912	7,228,434	20.44	1,802,648,097

NOTE: ALL VALUES REFLECT COMPANY'S OWNERSHIP OF NORTH ANNA, CLOVER AND BATH COUNTY

- (1) Coal includes wood and natural gas steam generation
- (2) CC & CT includes jet oil, light oil and natural gas generation
- (3) Fuel expense is equal to 12 months ended June 2019
- (4) Nuclear expense excludes interim storage
- (5) Fuel expense rate based on weather normalized fuel expense
- (6) NUG fuel includes expenses related to dispatchable NUGs at 78% for those units subject to the marketer percentage
- (7) Purchases include 71% of the fuel expense and the impact of the FTRs
- (8) NUG Expense adjustment includes the impact of statutory changes to NUG capacity and fuel expense
- (9) System Expense adjustment includes the impact of the end of the NCEMC contract in March 2019
- (10) System Expense adjustment includes the impact of the remainder of the year of operations for Greenville.

71A

DOMINION ENERGY NORTH CAROLINA
ENERGY AND FUEL EXPENSES

Docket No. E-22, Sub 562

Normalized and Adjusted Energy and Fuel Expense based on Actual 12-Months Ended June 2019
(Company Ownership Only)

Company Supplemental Exhibit BEP-1
Schedule 1
Page 1 of 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	12-Months Ended June 2019								June 2019		
	Expense (\$)	Generation (MWh)	Rate (\$/MWh)	Supply (%)	Ratio of Coal Oil, CT & CC NUG & Other MWh To Total Sum	Coal, Oil, CT & CC, NUG, Other, Nuclear Adj. and Growth MWh	Adjusted Generation (MWh)	Expense (\$)	Generation (MWh)	Rate (\$/MWh)	Normalized & Adjusted Fuel Expense at Applicable Rate (8) x (11)
Coal (1)	329,626,242	10,291,395	32.03	11.3	0.1671	59,532,474	9,950,079	38,640,485	999,127	32.03 (5)	318,701,030
Nuclear											
Surry	86,857,325	14,084,831	6.17	15.5			13,932,840	7,679,153	1,216,093		
North Anna	88,327,543	13,998,765	6.31	15.4			14,128,653	7,827,546	1,214,886		
Total Nuclear	175,184,868 (4)	28,083,596	6.24	30.9			28,061,493	15,506,699	2,430,979	6.24 (5)	175,103,716
Heavy Oil	0	0	0.00	0.0	0.0000	59,532,474	0	0	0	0.00 (5)	0
CC & CT (2)	967,449,526	35,509,724	27.24	39.1	0.5767	59,532,474	34,331,961	78,233,786	4,004,986	27.24 (5)	935,202,618
Hydro	0	4,533,733		5.0			4,533,733	0	322,191		0
Solar		76,055		0.1			76,055		11,894		
Power Transactions											
NUG Fuel (6)	48,928,014	3,604,032	13.58	4.0	0.0585	59,532,474	3,484,495	3,416,701	207,158	13.58 (5)	47,305,190
PJM Purchases	341,059,652	12,169,620	28.03	13.4	0.1976	59,532,474	11,765,998	174,907	196,459	28.03 (7)	329,747,945
Marketer Percent Adj to 71%											(30,607,918)
NUG Expense Adj (8)											44,736,521
NCEMC Expense Adj (9)											(23,683,023)
Greenville Adjustment (10)											(39,997,000)
Congestion removed from Base											31,820,071
Adjustments											
Sales for Resale	(4,947,928)	(472,518)	10.47	-0.5			(472,518)	0	(280,934)		(4,947,928) (3)
Net	385,039,738	15,301,134	25.16	16.9			14,777,975	3,591,608	122,683		354,373,859
Pumping	0	(3,038,494)		-3.3			(3,038,494)	0	(238,864)		0
Energy Supply	1,857,300,374	90,757,143	20.46	100.0			88,616,747	135,972,578	7,652,996	20.12	1,783,381,223

NOTE: ALL VALUES REFLECT COMPANY'S OWNERSHIP OF NORTH ANNA, CLOVER AND BATH COUNTY

- (1) Coal includes wood and natural gas steam generation
- (2) CC & CT includes jet oil, light oil and natural gas generation
- (3) Fuel expense is equal to 12 months ended June 2019
- (4) Nuclear expense excludes interim storage
- (5) Fuel expense rate based on weather normalized fuel expense
- (6) NUG fuel includes expenses related to dispatchable NUGs at 78% for those units subject to the marketer percentage
- (7) Purchases include 71% of the fuel expense and the impact of the FTRs
- (8) NUG Expense adjustment includes the impact of statutory changes to NUG capacity and fuel expense
- (9) System Expense adjustment includes the impact of the end of the NCEMC contract in Dec 2019
- (10) System Expense adjustment includes the impact of a full year of operations for Greenville.
- (11) Purchased power expense adjusted for the impact of the removal of congestion expense from Base Rates

1 A P P E A R A N C E S:

2 FOR DUKE ENERGY PROGRESS, LLC:

3 Lawrence B. Somers, Esq.

4 Deputy General Counsel

5 410 South Wilmington Street, NCRH 20

6 Raleigh, North Carolina 27602

8 Heather Shirley Smith, Esq.

9 Deputy General Counsel

10 40 West Broad Street, Suite 690

11 Greenville, South Carolina 29601

13 John Burnett, Esq.

14 Deputy General Counsel

15 Camal O. Robinson, Esq.

16 Senior Counsel

17 550 South Tryon Street

18 Charlotte, North Carolina 28202

20 Robert W. Kaylor, Esq.

21 Law Office of Robert W. Kaylor, P.A.

22 353 East Six Forks Road, Suite 260

23 Raleigh, North Carolina 27609

1 A P P E A R A N C E S Cont'd.:

2 Mary Lynne Grigg, Esq.

3 Joan Dinsmore, Esq.

4 McGuireWoods LLP

5 434 Fayetteville Street, Suite 2600

6 Raleigh, North Carolina 27601

7

8 Brandon Frank Marzo, Esq.

9 Troutman Sanders LLP

10 600 Peachtree Street, NE, Suite 5200

11 Atlanta, Georgia 30308

12

13 Kiran Mehta, Esq.

14 Troutman Sanders LLP

15 301 South College Street, Suite 3400

16 Charlotte, North Carolina 28202

17

18 FOR NC WARN:

19 John D. Runkle, Esq.

20 2121 Damascus Church Road

21 Chapel Hill, North Carolina 27516

22

23

24

1 A P P E A R A N C E S Cont'd.:

2 FOR CAROLINA UTILITY CUSTOMERS ASSOCIATION, INC.:

3 Robert F. Page, Esq.

4 Crisp & Page, PLLC

5 4010 Barrett Drive, Suite 205

6 Raleigh, North Carolina 27609

7
8 FOR NORTH CAROLINA SUSTAINABLE ENERGY ASSOCIATION:

9 Peter Ledford, Esq.

10 General Counsel

11 4800 Six Forks Road, Suite 300

12 Raleigh, North Carolina 27609

13
14 Thad Culley, Esq.

15 Keyes and Fox LLP

16 401 Harrison Oaks Boulevard, Suite 100

17 Cary, North Carolina 27513

18
19 FOR ENVIRONMENTAL DEFENSE FUND:

20 John Finnigan, Esq.

21 Senior Counsel

22 6735 Hidden Hills Drive

23 Cincinnati, Ohio 45230

24

A P P E A R A N C E S Cont'd.:

FOR NORTH CAROLINA JUSTICE CENTER, NORTH CAROLINA
HOUSING COALITION, NATURAL RESOURCES DEFENSE COUNCIL,
and SOUTHERN ALLIANCE FOR CLEAN ENERGY:

Gudrun Thompson, Esq.

Senior Attorney

David L. Neal, Esq.

Senior Attorney

Nadia Luhr, Esq.

Associate Attorney

Southern Environmental Law Center

601 West Rosemary Street, Suite 220

Chapel Hill, North Carolina 27516

FOR CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY RATES

II:

Ralph McDonald, Esq.

Warren K. Hicks, Esq.

Bailey & Dixon, LLP

Post Office Box 1351

Raleigh, North Carolina 27602-1351

1 A P P E A R A N C E S Cont'd.:

2 FOR PIEDMONT ELECTRIC MEMBERSHIP CORPORATION:

3 Ralph McDonald, Esq.

4 Warren K. Hicks, Esq.

5 Bailey & Dixon, LLP

6 Post Office Box 1351

7 Raleigh, North Carolina 27602-1351

9 FOR HAYWOOD ELECTRIC MEMBERSHIP CORPORATION:

10 Ralph McDonald, Esq.

11 Warren K. Hicks, Esq.

12 Bailey & Dixon, LLP

13 Post Office Box 1351

14 Raleigh, North Carolina 27602-1351

16 FOR UNITED STATES DEPARTMENT OF DEFENSE AND ALL

17 OTHER FEDERAL EXECUTIVE AGENCIES:

18 Kyle J. Smith, Esq.

19 General Counsel

20 United States Army Legal Services Agency

21 9275 Gunston Road

22 Fort Belvoir, Virginia 22060

1 A P P E A R A N C E S Cont'd:

2 FOR THE KROGER COMPANY:

3 Kurt Boehm, Esq.

4 Boehm, Kurtz & Lowry

5 36 East 7th Street, Suite 1510

6 Cincinnati, Ohio 45202

7

8 FOR THE COMMERCIAL GROUP:

9 Alan Jenkins, Esq.

10 Jenkins at Law, LLC

11 2950 Yellowtail Avenue

12 Marathon, Florida 33050

13

14 FOR NORTH CAROLINA LEAGUE OF MUNICIPALITIES:

15 Karen Kemerait, Esq.

16 Smith Moore Leatherwood LLP

17 434 Fayetteville Street, Suite 2800

18 Raleigh, North Carolina 27601

19

20 FOR RATE-PAYING NEIGHBORS:

21 Catherine Cralle Jones, Esq.

22 Law Office of F. Bryan Brice, Jr.

23 127 West Hargett Street, Suite 600

24 Raleigh, North Carolina 27601

1 A P P E A R A N C E S Cont'd:

2 FOR SIERRA CLUB:

3 Bridget Lee, Esq.

4 50 F Street, NW, Floor 8

5 Washington, DC 20001

6
7 Matthew D. Quinn, Esq.

8 Law Office of F. Bryan Brice, Jr.

9 127 West Hargett Street, Suite 600

10 Raleigh, North Carolina 27601

11
12 FOR FAYETTEVILLE PUBLIC WORKS COMMISSION:

13 James P. West, Esq.

14 West Law Offices, P.C.

15 434 Fayetteville Street, Suite 2325

16 Raleigh, North Carolina 27601

1 A P P E A R A N C E S Cont'd:
2 FOR THE USING AND CONSUMING PUBLIC:
3 Margaret A. Force, Esq.
4 Assistant Attorney General
5 Teresa L. Townsend, Esq.
6 Special Deputy Attorney General
7 Jennifer T. Harrod, Esq.
8 Special Deputy Attorney General
9 North Carolina Department of Justice
10 Post Office Box 629
11 Raleigh, North Carolina 27602
12
13 David T. Drooz, Esq.
14 Chief Counsel
15 Dianna W. Downey, Esq.
16 Tim R. Dodge, Esq.
17 Robert Gillam, Esq.
18 Lucy E. Edmondson, Esq.
19 William E. Grantmyre, Esq.
20 Heather D. Fennell, Esq.
21 Robert Josey, Jr., Esq.
22 Public Staff - North Carolina Utilities Commission
23 4326 Mail Service Center
24 Raleigh, North Carolina 27699-4300

T A B L E O F C O N T E N T S
E X A M I N A T I O N S

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E X H I B I T S

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P R O C E E D I N G S:

CHAIRMAN FINLEY: Let's go back on the record. Mr. Burnett.

MR. BURNETT: Thank you, Mr. Chairman.

MICHAEL MANESS and JAY LUCAS,
having previously been duly sworn, were examined
and testified as follows:

CONTINUED CROSS EXAMINATION BY MR. BURNETT:

Q. Good morning, again.

MR. BURNETT: Mr. Chairman, at this time I would like to hand out what I would like to mark as DEP Lucas Cross Exhibit Number 4, please.

BY MR. BURNETT:

Q. Mr. Lucas, what I have handed out and marked as DEP Lucas Cross Exhibit 4 is a copy of your deposition in this matter. Do you need a copy, sir, or do you have one with you?

A. (Jay Lucas) I've got one.

CHAIRMAN FINLEY: We will mark it as Exhibit 4.

(Whereupon, DEP Lucas Cross Examination Exhibit Number 4 marked for identification.)

BY MR. BURNETT:

1 Q. Mr. Lucas, we left off yesterday with your
2 second recommended category of cost disallowances.

3 You agree with me that the second category of
4 disallowance that you recommend are costs to remedy
5 environmental violations, as you say, where the costs
6 exceed what CAMA would have required in the absence of
7 the environmental violations; isn't that right?

8 A. Yes.

9 Q. And under the second category of recommended
10 disallowance, at least in part, you suggest that cost
11 for installing water extraction wells at our Sutton
12 facility should be disallowed; isn't that right?

13 A. Also, when we did the calculations, we found
14 extraction in treatment at H.F. Lee Plant and Asheville
15 Plant. So those costs also we removed.

16 Q. That's right. And your suggested removal of
17 those extraction wells is based on your theory that
18 they are in excess or incremental to what CAMA or CCR
19 would have required; is that correct?

20 A. That's correct.

21 Q. Yet you agree with me, though, that you have
22 not conducted a site analysis under CAMA or the CCR
23 rules for any of those sites, including Sutton, to
24 determine whether those same extraction wells would

1 have been required for compliance under CCR or CAMA,
2 have you?

3 A. Well, to back up a little bit, Duke Energy
4 would not have had to extract and treat clean
5 groundwater. The Company contaminated groundwater, and
6 as we established yesterday, the Company had over 2,800
7 groundwater violations. Also, the Company agreed to
8 this extraction treatment as part of the Sutton
9 settlement. I know that we talked yesterday, and we
10 were talking about cash settlements, but there is a lot
11 more to the case. In the Sutton settlement I will
12 see -- I will just quote it here. It's just one
13 paragraph. "Duke Energy will commence installation of
14 extraction wells on the eastern portion of the Sutton
15 Plant property where data show constituents associated
16 with ash basins at concentrations over the 2L
17 standards."

18 Q. Mr. Lucas, I appreciate that that is your
19 theory of disallowance, but I will ask you my question
20 again.

21 You will agree with me that you have not
22 conducted a site analysis under CAMA or CCR --

23 A. That I --

24 Q. Can I finish my question?

1 A. Oh, I'm sorry.

2 Q. -- at the Sutton site or any other sites
3 where you take issue with extraction wells; isn't that
4 correct?

5 A. That's correct. We had two sources for our
6 data. We had data provided to the Public Staff by Duke
7 Energy Progress, and also, we had discussions with the
8 groundwater section regarding these problems.

9 Q. In fact, Mr. Lucas, when it comes to
10 calculating an actual cost that you claim the Company
11 should be denied under your second category of
12 disallowance, you admit that you have only looked at
13 this issue, using your words, to a limited degree;
14 isn't that right?

15 A. That's correct. And that sort of goes into
16 my proposal for the sharing of costs of -- the costs
17 and the problems are so vast, we can't assess
18 everything that occurred. Through data requests, the
19 Company's provided over half a million pages of data.
20 There is no way I could have reviewed over half a
21 million pages of data.

22 Q. In fact, Mr. Lucas, throughout all four of
23 your proposals for disallowance for coal ash costs in
24 this matter, you don't really attempt to quantify

1 actual costs that you think the Company should be
2 disallowed; isn't that right?

3 A. No. I talk about the \$88,000 for litigation
4 costs and the \$6.7 million to extract and treat
5 groundwater. I took those from -- the extraction of
6 treatment of groundwater, I took that data from the
7 Company's E-1 Item 10, Section NC-1800, and that's
8 where the Company provided most of its coal ash costs.
9 And the Public Staff sent a data request, and the
10 Company came back with an itemized list of all the
11 entries. There was about 27,000 entries. I scanned
12 through there and found what were extraction and
13 treatment costs. And I go back to my premise that the
14 Company would not have had to extract and treat clean
15 groundwater. I mean, the Company is responsible for
16 doing that kind of cleanup.

17 MR. BURNETT: Mr. Chairman, at this
18 time, I would like to hand out a package of
19 demonstrative exhibits. There are three of them.
20 I do not intend to mark them as cross exhibits or
21 enter them into evidence. They will be citations
22 of -- testimony citations or deposition citations
23 in the hope of moving my questioning along.

24 BY MR. BURNETT:

1. Q. Mr. Lucas, do you have that package in front
2 of you?

3 A. Yes, I do.

4 Q. If you would turn to Demonstrative Exhibit
5 Number 3 for me in that package.

6 A. (Witness peruses document.)

7 Q. And I will go through these site by site, and
8 you can have the references there in front of you,
9 again, with the hope that we don't have to hunt and
10 peck for each one of these in your testimony and your
11 depositions, but you admit that you have not attempted
12 to quantify the amount of coal ash costs for which you
13 contend the Company has some degree of culpability;
14 isn't that right?

15 A. Not the total amount. I know I just talked
16 about the \$88,000 litigation cost and \$6.7 million
17 extraction of treatment, but the other costs that we
18 are talking about, the shared cost, I assume that's
19 what you are talking about?

20 Q. I'm talking about any cost that you allege,
21 other than those that you have, in fact, identified
22 with specificity.

23 A. Yes. That's correct. I believe there is a
24 shared responsibility.

1 Q. Right. And related to what you call in your
2 testimony, quote, 200 distinct seeps at the Company's
3 basins, you have not calculated any specific cost that
4 you believe should be disallowed related to those, have
5 you?

6 A. No. But those seeps were part of the
7 lawsuits that DEP [sic] filed against the Company; had
8 unpermitted seeps, which is a violation of state law,
9 DEQ filed a lawsuit, and part of the resolution of that
10 lawsuit was for the Company to comply with CAMA. And
11 another part of my testimony, and I still adhere to
12 this, is that the Company -- the Company's actions were
13 a contributing factor to the creation of CAMA. So
14 therefore, the Company, indeed, caused this -- or
15 was -- had a contributing factor to making this law be
16 created, and that did satisfy the requirements of the
17 DEQ.

18 Q. Mr. Lucas, you have not calculated any
19 specific costs that you contend should be disallowed
20 due to alleged dam safety issues at the Company's
21 sites, have you?

22 A. That's correct.

23 Q. And regarding an August 22, 2016, dam safety
24 order that you attach as Exhibit 3 to your testimony,

1 you did not calculate any specific cost that should be
2 disallowed due to that exhibit, did you?

3 A. No. I was shown an exhibit where the Company
4 had problems. That dam safety order came out in 2016.
5 That was two years after the Dan River spill, and the
6 DEQ was still finding problems at the Company's
7 impoundments.

8 Q. Mr. Lucas, regarding what you call in your
9 testimony, quote, other dam safety requirements outside
10 of CAMA, you have not calculated any specific cost that
11 should be disallowed under whatever those requirements
12 are, have you?

13 A. No, I haven't.

14 Q. And you have not calculated any specific cost
15 that you believe should be disallowed for the Company's
16 alleged failure to comply with NPDES permits; isn't
17 that right?

18 A. That's correct.

19 Q. And regarding several lawsuits that you list
20 out on Exhibit 8 to your testimony, you admit, do you
21 not, sir, that you are not sure whether those costs are
22 in the Company's rate case request or not; isn't that
23 right?

24 A. Oh, I believe they are. I mean, the

1 Company's asset retirement obligation, that request, I
2 talked about the section NC-1800, I believe was, like,
3 \$236 million. And like I said, there were 27,000
4 entries that made up that money. I mean, there is a
5 lot of costs that the Company is trying to put in rates
6 regarding coal ash -- coal ash remediation.

7 Q. Mr. Lucas, let's turn to page 62 of your
8 deposition, which I marked as DEP Lucas Cross
9 Exhibit 4, and if you will let me know when you are
10 there.

11 A. (Witness peruses document.)

12 Okay. I'm on page 62.

13 Q. And you will see there, Ms. Dinsmore asks --
14 starts to ask you on line 1 of page 62 of Cross
15 Exhibit 4. She shows you Lucas Exhibit 8, which I just
16 asked you about, and then she asked you the question,
17 "You're not sure whether those costs are part of this
18 rate recovery case?" Your response, "I am not sure.
19 Some of those costs could be in the E-1. I might not
20 have been able to identify them."

21 Isn't that what you said?

22 A. That's correct.

23 Q. And at least one of the reasons that you
24 chose not to include specific cost recommendations for

1 disallowances in this matter is, to use your words,
2 quote, it would be too difficult to do so; isn't that
3 right?

4 A. Yes. It goes back to my equitable sharing.
5 And your witness, Dr. Wright, stating Friday -- find
6 his words -- he says it's difficult -- and this is not
7 an exact quote. This is pretty much what he said. It
8 is difficult to make an engineering estimate on costs
9 for past improvements. So if the Company had taken
10 steps to prevent groundwater violations years and years
11 ago, those costs would be in rates today. But Duke
12 Energy did not take those steps. Those costs are not
13 there. But to my equitable sharing recommendation,
14 looking at what costs the Company incurred to remediate
15 the violations, and also as part of the settlements to
16 make environmental corrections, those costs have to be
17 taken into account. We believe the customers don't
18 bear full responsibility of all that environmental
19 remediation.

20 Q. Mr. Lucas, rather than conducting what we
21 just established you think is a difficult analysis to
22 determine actual cost that should be disallowed, you
23 relied on what you call -- and I will use your words
24 again -- quote, the simplest way to determine

1 disallowances in this case, which leads to your
2 equitable sharing support; isn't that right?

3 A. Yeah. There is nothing wrong with a simple
4 solution.

5 Q. Mr. Lucas, you would agree with me that
6 simplicity is not a cost recovery standard that this
7 Commission uses for recommending or approving
8 disallowances, wouldn't you?

9 A. No. Simplicity -- I mean, that's not the
10 reason I recommend equitable sharing. The reason I
11 recommend equitable sharing, it's the only feasible
12 method to figure out what costs should be borne by the
13 ratepayers.

14 A. (Michael Maness) May I elaborate on
15 Mr. Lucas' answer?

16 Q. No.

17 MR.. BURNETT: If the choice is mine,
18 Mr. Chairman.

19 CHAIRMAN FINLEY: When you have a panel,
20 it's appropriate for Counsel to ask the particular
21 witness a particular question. That does not
22 prevent your lawyer from asking you a question in
23 redirect. You can leave the question with
24 Mr. Lucas.

1 THE WITNESS: (Jay Lucas) I'm sorry.

2 Go ahead.

3 BY MR. BURNETT:

4 Q. Mr. Lucas, let's go ahead to your third
5 recommended proposal for disallowance of cost, which is
6 the exclusion of cost required to be excluded under
7 probation conditions of Duke Energy's federal plea
8 agreement.

9 A. Okay.

10 Q. You take no issue with the Company's
11 contention that all of these costs have already been
12 excluded from the Company's rate case request in this
13 matter; isn't that right?

14 A. That's correct.

15 Q. All right. So we will move along to your
16 fourth and final proposal for disallowance, what you
17 call -- and I realize this is in support of Mr. Maness'
18 equitable sharing proposal, but you contribute support
19 for that, so I'm not going to call it your theory, but
20 your contribution; is that fair enough?

21 A. That's fair.

22 Q. Okay. You agree with me that this Commission
23 has historically based disallowances on some degree of
24 utility fault attributable to specific decisions that

1 constitute mismanagement; isn't that right?

2 A. That's correct.

3 Q. Mr. Lucas, would it surprise you to learn
4 that, in your testimony, you make at least six
5 references to instances where you admit that the
6 Company has not been found to have been imprudent, but
7 nonetheless, you recommend a disallowance via your
8 support of the equitable sharing proposal?

9 A. Yeah. I will explain. Prudence analysis and
10 rate recovery analysis are two different things, and I
11 would like to give an example. Say the Company
12 transformer broke and spilled oil. It's prudent for
13 the Company to clean up that oil quickly and
14 efficiently, and there would be costs associated with
15 that spill of oil. Now, rate recovery analysis is a
16 second step. If the Company had been negligent and had
17 not maintained its transformers, and that results in an
18 oil spill, Public Staff might say, well, that's Company
19 fault. Company has to bear that cost. The other end
20 of the spectrum would be, what if it's force majeure?
21 What if there had been a storm that broke that
22 transformer and spilled that oil? If -- it may be
23 considered part of storm costs. So prudence analysis
24 and cost recovery analysis are two different things.

1 Q. Mr. Lucas, if you would take a look at
2 Demonstrative Exhibit 1 that I have handed out.

3 If you would agree with me that this is a
4 fair citation and generally a fair experiment
5 description of your prefiled testimony in this matter,
6 I could avoid at least six questions to you, as long as
7 you think I have fairly and accurately made a citation
8 and characterization.

9 A. Please give me a moment.

10 Q. Yes, sir.

11 A. (Witness peruses document.)

12 Some of this looks a little bit taken out of
13 context, but let's go with your questions.

14 Q. Well, you would agree with me, Mr. Lucas,
15 that the Commissioners can read your prefiled testimony
16 and draw whatever conclusions they wish on context?

17 A. That's correct.

18 Q. Okay. I will just go ahead and move along
19 then.

20 You would agree with me, Mr. Lucas, that the
21 best practice for making recommendations for
22 disallowances is to wait until the full facts
23 surrounding an issue are known; isn't that right?

24 A. That's usually ideal, but we rarely can get

1 all full facts. We have to make decisions on the facts
2 that we have at the time.

3 Q. And, in fact, in your summary that you read
4 to the Commission yesterday on page 2, you seem to take
5 issue with the use of speculation and "what if"
6 scenarios as a basis for recommending disallowances;
7 did I understand you correctly?

8 A. (Witness peruses document.)

9 Q. Top of the page of page 2, sir.

10 A. I see. Yes. So that's right, speculative.
11 If the Company had installed -- for example, had
12 installed liners when it constructed the ash basins,
13 it's too difficult to go back in the past years and
14 figure out -- I said liners. There are various types
15 of liners. What kind of costs could have been in past
16 years, and since the Company did not make those
17 expenditures, it's speculative to come up with a dollar
18 amount as to what they should have been.

19 Q. Mr. Lucas, notwithstanding your apparent
20 distaste for speculation and "what if" scenarios as a
21 basis for cost recovery, isn't it true that you have at
22 least 10 instances in your testimony where you draw
23 support for the equitable sharing proposal based on the
24 events that you admit may have never happened or that

1 may never happen in the future?

2 A. (No response.)

3 Q. We could take a look at Demonstrative
4 Exhibit 2, if that gives you context.

5 A. Can you state your question again, please?

6 Q. Yes, sir. Would it surprise you to learn --
7 I will ask it that way -- that there are at least 10
8 instances in your testimony where you draw support for
9 the equitable sharing concept based on events that you
10 admit may have never happened or that may never happen
11 in the future?

12 A. I disagree. Again, I think some of these are
13 taken out of context. Like your second one,
14 "Settlements may indicate probable violations." Well,
15 we have gone back and established there were over --
16 definitely over 2,800 groundwater violations. Let's
17 see. Okay. I talk about some things that could occur
18 in the future. You don't number these, but take a look
19 at the fourth bullet. Since you provided this to the
20 Commission, I know you are not having this as a cross
21 examination exhibit, but I feel like I need to answer
22 them.

23 Q. Yes, sir. Take your time.

24 A. Yeah. This is in my prefiled testimony as I

1 filed October 20th, but then I came back with my
2 revised exhibit. Had to come back and -- we were --
3 just weren't sitting on our hands in this analysis. A
4 lot of this data we didn't -- a lot of this information
5 we didn't get back from DEQ until October, and we had
6 to analyze it, and we weren't able to finish that
7 analysis before filing. And then when I filed my
8 revised testimony, I come back and say -- I know you
9 got this "may be" data. Well, then I come back in my
10 revised and there is definitely data -- there are
11 definitely 2,800 -- definitely 2,800 groundwater
12 violations. And I say, "Yeah, there appear to be
13 extensive violations NPDES permits." That's data I
14 took from the Department of Environmental Quality.

15 (Witness peruses document.)

16 Q. Mr. Lucas, I'm sorry. I don't want to
17 interrupt you at all. You take all the time you need.
18 If you'll just let me know when you've completed your
19 answer. I just don't want to jump in and interrupt.

20 A. Oh, yeah. Sure. Sure. I will let you know
21 when I'm done.

22 (Witness peruses document.)

23 I mean, I stand by what -- we were talking
24 about Demonstrative Exhibit 2. I stand by these

1 statements.

2 Q. Thank you, sir. Mr. Lucas, my next topic
3 that I would like to discuss with you involves your
4 assertion that the State's 2L groundwater rule creates
5 what you call an effective, quote, strict paradigm in
6 North Carolina; are you familiar with that?

7 A. Yes.

8 Q. You do realize, do you now, sir, that the
9 term "strict liability" is a legal term; do you not?

10 A. Yes.

11 Q. And you are not a lawyer; isn't that right,
12 sir?

13 A. That's correct. But, I mean, my testimony
14 was developed'-- I mean, I worked with our Public
15 Staff's attorneys, and I worked with our Public Staff
16 accountants to develop this testimony. So I worked
17 with them to develop some of the words in my testimony.

18 Q. I'm glad you raised that, Mr. Lucas, because,
19 while I see two instances in your testimony where you
20 talk about advice your legal counsel gave you,
21 specifically page 60, lines 20, and page 70, lines 13,
22 I did not see any similar notations showing that you
23 had received advice from your legal counsel on whether
24 a 2L violation does, in fact, create a strict liability .

1 paradigm.

2 A. That's true. I believe that. I mean, I
3 believe it does create a strict liability, and I want
4 to explain why. If you go to my Lucas Exhibit
5 Number 2, this is regarding groundwater violations.
6 And the 2L rule says that whoever creates a violation
7 has to implement an approved corrective action plan.
8 It doesn't say you may implement it or you -- we'll
9 talk to you, and maybe. It says you have to implement
10 a corrective action plan, and I think that creates a
11 strict liability.

12 Q. Just to be clear, though, Mr. Lucas, you're
13 not rendering any legal opinions in your testimony or
14 here today, of course; you will leave that to the
15 lawyers to brief; isn't that right?

16 A. I'm not rendering a legal opinion, but the
17 requirement to implement an approved correction action
18 plan when there is an environment violation I believe
19 is a strict liability. I mean, I believe that.

20 Q. Okay. Under this theory, Mr. Lucas, you
21 contend that, if an electric utility allows a
22 contaminant to reach the groundwater, that is
23 automatically mismanagement; isn't that right?

24 A. Okay. Sorry. I have to flip back to my

1 deposition now.

2 (Witness peruses document.)

3 I will just -- I will just read the entire
4 question and answer. This is top of that -- starting
5 at the top of the page 80, and this is the attorney
6 that was asking me questions, and she asked me, "So, is
7 it your opinion that the fact of groundwater
8 contamination means there is mismanagement?" My answer
9 is, "It could be. It could be the result of
10 mismanagement of an ash basin." Back to her question,
11 "It could be. Is it necessarily the result of
12 mismanagement?" "Yes. If the electric utility is
13 responsible for contaminants in the groundwater, that's
14 mismanagement."

15 Q. Thank you, Mr. Lucas. Your read is actually
16 better than my slide to make that point in context. I
17 appreciate that.

18 You admit, though, don't you, that
19 constituents from coal ash being in groundwater from
20 ash basins is a national issue that's not unique to
21 Duke Energy; isn't that right?

22 A. I believe there have been problems at other
23 utilities, and to some extent, it is a national issue.

24 Q. You contend that the Company could have

1 . avoided the impacts of this alleged strict liability
2 paradigm if it had retrofitted its ash basins with
3 impervious bottom liners or dry ash stacking in the
4 1970s; isn't that right?

5 A. No, I don't -- I don't contend that. I
6 don't -- don't recommend any specific technology to be
7 implemented any certain year. I believe the Company
8 had a duty, though, to prevent environmental
9 violations, and it failed to do so. So it bears
10 responsibility for correction of those violations.

11 Q. Well, let's take a look at your deposition
12 testimony, Mr. Lucas, if you would. Let's go to page
13 81.

14 A. Okay. I'm there.

15 Q. Let's look at line 16. "Is there anything
16 about the design of basins, themselves, rather than the
17 operation or management that could have resulted in the
18 groundwater exceedances?" "Yes." "Okay. Can you tell
19 me about that?" "Not having impervious barriers could
20 be a problem." Do you see that?

21 A. That could be one problem, yes.

22 Q. And you see on page 82 of your deposition,
23 starting at line 7, where you testify, "I believe Duke
24 Energy Progress should have brought the ash basins up

1 to modern standards. Those ash basins were built
2 decades ago. The Clean Water Act of 1972, the Resource
3 Conservation Recovery Act of 1976, more and more
4 environmental awareness was coming about, and I believe
5 Duke Energy Progress, at that time, certainly should
6 have been aware that there were potential problems that
7 could have arisen from ash basins and causing
8 groundwater problems." "Question: And when do you
9 believe DEP should have taken those steps?" "In the
10 1970s." Do you see that there?

11 A. Yes. Let me finish answering the question.

12 Q. Yes, sir.

13 A. I know this part of my deposition, she's
14 asking me questions about steps the Company could have
15 taken. That's not really the premise of my testimony.
16 I don't say the Company should have used -- absolutely
17 used one type of technology at any particular year.
18 The premise of my testimony is, somewhere, at some
19 time, the Company should have prevented groundwater
20 problems, it should have prevented unpermitted seeps,
21 and it somewhere had -- somewhere, at some time, had
22 the responsibility to prevent contamination of
23 groundwater.

24 Q. Well, Mr. Lucas, let's look at page 61 of

1 your prefiled testimony. Go to line 8. Just let me
2 know when you are there, please.

3 A. (Witness peruses document.)

4 I'm there.

5 Q. You say there, don't you, sir, "For example,
6 most violations could have arguably been avoided by
7 taking a different approach to ash management in the
8 earlier years, such as lining the ash basins with
9 impervious materials or creating dry stack lined
10 landfills"; isn't that right?

11 A. That's correct. And I see there I use the
12 word "arguably" it could have been avoided by taking a
13 different approach such as lining the basins. And I'm
14 just opining to some types of technology, and lining an
15 ash basin could take many permutations. I mean, it
16 could be a clay liner, it could have been a plastic
17 liner. I believe your witness opined on doing a
18 concrete liner. And that's the premise of my equitable
19 sharing. We can't go back in time and say, oh, they
20 should have put in a clay liner in 1978 or done dry ash
21 stacking in the 1980s. I mean, that's impossible to go
22 back and put all these "what ifs" together and say
23 exactly here's what they should have done, and here's
24 what would have been the cost, and that cost would have

1 been in the rates today for customers. That's why I
2 sort of hedge when I say arguably could have been
3 avoided, and just give examples of what could have been
4 done.

5 Q. Mr. Lucas, let me ask you this question,
6 hopefully a direct one, if I ask a good one.

7 From 1920 until 2014, with respect to my
8 Company's ash basins in this state, what should we have
9 done differently and when should we have done it?

10 A. Should not have contaminated groundwater,
11 should not have allowed unpermitted seeps, and I'm
12 going back to the basis of my testimony. I can't say
13 exactly what year or exactly what technologies. I know
14 I keep repeating this. And that difficulty is why I'm
15 recommending an equitable sharing. The Company had a
16 responsibility to protect groundwater, had a
17 responsibility to not allow unpermitted seeps, and a
18 responsibility to comply with its NPDES permit limits.
19 In many cases it didn't. And DEQ brought lawsuits
20 about -- not seeking settlements for cash, but they
21 brought lawsuits because of groundwater violations and
22 those seeps. I can't give you the exact year. That's
23 -- it's the difficulty. I mean, I talk about this in
24 my testimony. The difficulty of going back and

1 determining, so I can't give you specific technology or
2 a specific year.

3 Q. I see. So along that timeline, again, 1920
4 to 2014, you can't tell me any specific basin
5 modifications I could have made, anything I should have
6 done differently with handling or managing that ash at
7 any given time?

8 A. There are lots of potential options. I'm
9 not -- I feel like you keep asking me the same
10 question. I'm not recommending any specific technology
11 on any certain time. The Company -- there are steps
12 the Company could have taken. That's why I give
13 examples. Like I give examples such as lining the ash
14 basins or creating dry ash handling. Somewhere along
15 the line the Company should have taken some kind of
16 action to not contaminate the groundwater. And looking
17 at it another way, the Company can't sit there and
18 claim, in order for us to generate electricity, there
19 are no reasonable steps we could have done to prevent
20 contamination of groundwater, and therefore prevented
21 contamination of people's drinking water. I don't
22 think the Company can take that position.

23 Q. But you would agree with me that it would be
24 helpful if someone could simply tell me what I should

1 have done and when I should have done it; isn't that
2 right, with specificity?

3 MR. DROOZ: Asked and answered.

4 CHAIRMAN FINLEY: Overruled.

5 THE WITNESS: But that's going back to
6 the past. Somebody could have gone back and said
7 what you should have done back at a certain time,
8 and that's -- you could be talking about the
9 prudence, and I can't go back and -- I can't go
10 back and tell you exactly what would have happened
11 -- what you should have done at a certain time.
12 I'm not sure what good it would have done for
13 somebody to tell you, oh, 40 years ago you should
14 have put in a clay liner at Asheville and Sutton,
15 put in a concrete liner at the H.F. Lee plant. I
16 mean, you just can't go back and do that kind of
17 assessment.

18 BY MR. BURNETT:

19 Q. We have heard lots of discussion in this
20 case, Mr. Lucas, about when the industry knew or should
21 have knew that coal ash basin water making contact with
22 groundwater was an issue, and we have had lots of
23 discussion over whether people should have been
24 concerned about that at given times or done things at

1 given times; do you recall all that?

2 A. Yes.

3 Q. I have heard some indication that that date
4 may be, in the intervenor's perspective, sometime
5 around the 1980s; do you agree or disagree with that?

6 A. I mean, certain more -- the amount of
7 information was changing over time. Give me a moment.
8 Let me find a document.

9 (Witness peruses document.)

10 I have got a letter written by the
11 North Carolina Department of Natural Resources and
12 Community Development. That's the predecessor to the
13 DEQ. And this is written August 16th of 1978. But I
14 can make this a late-filed exhibit. And this is
15 regarding Mayo project. Duke Energy was getting ready
16 to build the Mayo Power Plant. I will just read one
17 paragraph. This letter is to the Corps of Engineers,
18 but the Company was copied on this letter. And it
19 says, "The Company shall provide such testing as
20 necessary to assure that pollutants are not discharged
21 to the groundwaters, and thereby to the downstream
22 point of the Crutchfield branch in violations of the
23 provisions stated above." So this is 1978. Looks like
24 DEQ was concerned about ash basins and their effects on

1 groundwater.

2 Q. Sir, the issues in that letter that you just
3 referenced, do you believe that these were serious
4 issues?

5 A. Yeah, I believe -- yeah. Not creating
6 groundwater pollution or contaminating people's
7 drinking water is a serious issue.

8 Q. Do you think, at that time, that these issues
9 put in jeopardy the health of the environment of this
10 state?

11 A. I said there is a high possibility. I mean,
12 we talked about some of these ash basins being decades
13 old. The first groundwater violation wasn't found,
14 according to what we have, until 1990. It's not like
15 those ash basins were built in the 1950s and didn't
16 create any problems; we just don't know. I mean, we
17 started finding problems. Like with the Sutton test,
18 it failed -- had a groundwater violation for chloride
19 in 1990. I can't go back and say exactly when those
20 basins would have contaminated groundwater. I don't
21 believe the ash basins were perfectly sound and not
22 contaminating groundwater for decades, and suddenly,
23 once we start looking, oh, they did start contaminating
24 groundwater.

1 Q. At that time that you referenced in the
2 letter in 1978 that you just read, do you believe the
3 issues that you reference presented a real and present
4 harm to human health and safety?

5 A. I'm sorry, say that question again, please.

6 Q. Yes, sir. In the 1978 letter that you just
7 referenced, do you believe that the groundwater issues
8 referenced in that letter presented a real and present
9 danger to human health and safety?

10 A. They could have. I mean, if they were
11 downstream -- excuse me, if they were downgradient
12 wells from homeowners, yeah, it could have presented a
13 danger.

14 Q. If we are to believe some of the testimony
15 that we have heard here in this proceeding, that coal
16 ash water coming into contact with the ground presented
17 hazards to health and safety and to the environment of
18 this state that were real and present until as early as
19 the 1978s -- '78, do you have any explanation for why
20 the federal EPA or the state DEQ or its predecessor
21 agency never came to my Company and said, "Stop. Don't
22 use these unlined wet ash basins anymore"?

23 A. It's not necessarily their responsibility.
24 It's the Company's responsibility -- overall, it's the

1 Company's responsibility to not create pollution
2 problems. You don't have to wait for someone else to
3 tell you not to.

4 Q. I agree, sir, but you would agree with me
5 that a regulator charged with protecting the
6 environment, this country, and this state, would also
7 intervene and prohibit a practice if they felt
8 necessary to do so; isn't that right?

9 A. If they had the staffing level and they had
10 the data, they would intervene, yes.

11 Q. Thank you, sir. Nothing further.

12 CHAIRMAN FINLEY: Redirect?

13 MR. DROOZ: Yes.

14 REDIRECT EXAMINATION BY MR. DROOZ:

15 Q. Mr. Lucas, just on that last question, since
16 we are there, do you know when the 2L groundwater
17 standards were adopted in the state of North Carolina?

18 A. 1979.

19 Q. And did Duke Energy Progress and its
20 predecessor company have an obligation to comply with
21 those standards?

22 A. Yes.

23 Q. And was that obligation in effect without
24 regard to whether there was any imprudence or

1 negligence on their part?

2 A. Yeah. The two standards don't talk about
3 negligence and prudence. They just say, here are the
4 standards, and everyone must obey them.

5 Q. If you would, please turn to your revised
6 Exhibit 5. You were asked some questions about what
7 number of NPDES violations exist, and you had a larger
8 number in your initial Exhibit 5; is that correct?

9 A. That's correct.

10 Q. And why did you file a Revised Exhibit 5?

11 A. For two reasons. First, in my original
12 exhibit, I was concerned that some of those NPDES
13 permit violations would be groundwater exceedances that
14 might not later prove to be violations. A second
15 reason I did is, my original exhibit had some
16 groundwater data, and I wanted to really separate
17 surface water violations and groundwater violations.
18 That's why I have surface water violations in
19 Exhibit -- my Revised Exhibit Number 5, and only
20 groundwater violations in my Revised Lucas Exhibit
21 Number 6.

22 Q. What was your source of data for coming up
23 with these numbers of NPDES violations?

24 A. Took those from the monitoring reports of the

1 Department of Environmental Quality.

2 Q. And at the top of those reports, do they
3 label them as violations?

4 A. Yes, they do. And for each parameter there
5 are several columns on each report, and three of those
6 columns reference a violation. So, really,
7 "violations" is written four times on each page.

8 Q. And after you read the rebuttal testimony of
9 the Company, did you realize that not all those numbers
10 were necessarily violations?

11 A. That's correct.

12 Q. And when we look at your Revised Lucas
13 Exhibit 5, having gone through that BIMS data, what is
14 the number of violations you have determined that are
15 truly violations and not just falling under the label?

16 A. 458 violations.

17 Q. What type of violations are those?

18 A. These are NPDES permit violations.

19 Q. Would that include unpermitted seeps or
20 unlawful discharges?

21 A. No. This table does not include unpermitted
22 seeps because they don't have an outfall -- they don't
23 have a legal outfall point to be monitored.

24 Q. Are there, in addition to these NPDES

1 violations, also unpermitted unlawful seeps at Duke
2 Energy Progress coal ash basins?

3 A. Yes. In the joint factual statement that the
4 Company agreed to, there were -- the Company agreed
5 that there were over 200 unpermitted seeps.

6 Q. Let's turn to your Revised Exhibit 6 now.
7 And there has been considerable discussion about the
8 difference between an exceedance of 2L groundwater
9 standards and a violation of 2L groundwater standards.

10 Have you done an analysis here that shows
11 that difference?

12 A. Yes. My Revised Lucas Number 6, I separate
13 what were -- separate between violations and
14 exceedances, and I show that there were over 2,800
15 actual violations.

16 Q. Can you tell us which line and column that is
17 on this exhibit?

18 A. Okay. On Revised Lucas Exhibit Number 6,
19 second column from the right, down at the bottom, it's
20 2,857 violations.

21 Q. And what is the data source for this?

22 A. This is response to a Public Staff data
23 request. The Company provided this data to us.

24 Q. Does the Company also report this data to

1 DEQ, if you know?

2 A. Yeah. It does have to report groundwater
3 data, and those do also appear on the monitoring
4 reports.

5 Q. Okay. Going back to your original exhibits,
6 if you will look at Exhibit 7.

7 A. (Witness peruses document.)

8 Okay. I'm there.

9 Q. Okay. And what is the source of data for
10 this exhibit?

11 A. This data was provided by consultants that
12 were hired by the court-appointed monitor. In the
13 federal criminal case, as a condition of probation, the
14 court had a court-appointed monitor that had to hire a
15 consultant to do audits of groundwater problems created
16 by the Company.

17 Q. And in those audits, did they find
18 exceedances of 2L standards?

19 A. They found exceedances of 2L standards that
20 were caused by ash basins.

21 Q. And is that occurring at every single Duke
22 Energy Progress plant in the state?

23 A. Yes.

24 Q. Okay. You were asked some questions about

1 settlements and lawsuits.

2 Is it your position that a lawsuit alleging
3 environmental violations, by itself, would be evidence
4 of the violations?

5 A. No.

6 Q. And why is that?

7 A. Anyone can file a lawsuit at any time, but
8 the lawsuits that I reference in my Lucas Exhibit
9 Number 8 were the result of true groundwater
10 violations. That's why the Public Staff did its own
11 investigation and determined whether they were true
12 groundwater violations.

13 Q. What information do you have that supports
14 that, apart from the allegations in the lawsuit?

15 A. The Company's response to our data request.
16 We took data from the Company's information, and that's
17 how we developed our number of violations.

18 Q. What type of data?

19 A. This is groundwater monitoring data.

20 Q. Turning to the settlements in the cases
21 involving the Sutton plant where the Company paid out
22 settlement amounts, does the mere fact that there is a
23 settlement, by itself, establish that there has been a
24 violation?

1 A. No.

2 Q. And what information did you draw on to come
3 to the conclusion that there were violations?

4 A. Looking at the Company's records, and also,
5 in the Sutton settlement, the Company agreed to do
6 extraction and treatment of groundwater at three of its
7 DEP power plants. The Company wouldn't have had to
8 extract and treat clean groundwater.

9 Q. Did you examine any groundwater exceedance
10 data that supported the allegations?

11 A. Yes. That was in the response to that data
12 request I referred to. That's where I got the data on
13 violations.

14 Q. Bear with me just a moment here.

15 The NPDES permit requirements and the 2L
16 groundwater standards, did they exist before CAMA and
17 the CCR rule were adopted?

18 A. Yes.

19 Q. And if there is a violation, say, of
20 groundwater standards, does 2L require the Company to
21 take corrective action?

22 A. Yes, it does.

23 Q. Does CAMA require the Company to take
24 corrective action?

1 A. Yes, it does.

2 Q. If CAMA had never been passed, would the
3 Company have had to remedy, through corrective action,
4 the 2L violations that existed?

5 A. Yeah. That's a requirement in the rules.

6 Q. When CAMA came into play, did it require
7 closure of five out of seven of the basins?

8 A. Yes.

9 Q. Excuse me, basins at five out of seven of the
10 plants?

11 A. Yes.

12 Q. Okay. And is that, in effect, remedying the
13 2L violations?

14 A. Yeah. Closure of the basins would have
15 certainly helped remedy the 2L violations.

16 Q. If there had been no CCR rule and CAMA, would
17 the Company still have had to remedy the violations?

18 A. Yes.

19 Q. Is it possible that DEQ or legal judgments
20 would have required different remedies than closure of
21 the ash basins?

22 A. It could have, yeah, definitely.

23 Q. Is that something that it's just impossible
24 to know because it's a scenario that did not happen?

1 A. Yeah. It didn't happen. Can't speculate,
2 exactly, what the conclusion would have been without
3 CAMA.

4 Q. In your opinion, would it be just and
5 reasonable rate setting to charge consumers 100 percent
6 of the cost of remedying environmental violations at
7 Duke Energy basins?

8 A. No.

9 MR. DROOZ: That's all on redirect.

10 CHAIRMAN FINLEY: Questions by the
11 Commission? Mr. Clodfelter.

12 EXAMINATION BY COMMISSIONER CLODFELTER:

13 Q. Mr. Maness.

14 A. (Michael Maness) Yes.

15 Q. You get a question.

16 A. Right.

17 Q. In your summary, you say that, for purposes
18 of doing your jurisdictional allocation, you use the
19 energy allocation factor to allocate the system level
20 of coal ash cost of North Carolina operations rather
21 than demand-related production costs?

22 A. Yes.

23 Q. I'm curious about something. How are -- for
24 your jurisdictional allocation purposes, how are the

1 costs of storage of spent nuclear fuel allocated?

2 A. I believe that there are various allocation
3 factors. You could have some spent nuclear fuel
4 capital investments that might be allocated by the
5 demand factor. Then you have other, sort of,
6 fuel-handling-type expenses that I expect would be
7 allocated by the energy factor.

8 Q. Can you tell me more about how its actually
9 done in North Carolina?

10 A. No. I would probably have to do some more
11 research to determine the technical details of which
12 ones are energy and which ones are demand, but I would
13 be willing to do that if necessary, as a late-filed
14 exhibit.

15 Q. For purposes of treating the system-level
16 coal ash costs, you allocated 100 percent of that on an
17 energy allocation factor basis?

18 A. Yes, because the majority of these costs
19 are -- deal with the actual handling and moving of the
20 coal ash, and the original coal, when burned, is
21 allocated by the energy factor.

22 Q. Right. I will think about whether I want to
23 ask you to do the analysis on the nuclear, but at one
24 point in time, there was a charge paid by companies in

1 order to pool storage of spent nuclear fuel; is that
2 correct?

3 A. Yes.

4 Q. And how was that charge calculated? Was it
5 calculated as a -- how was the rate established or the
6 fee established?

7 A. Well, the federal government established the
8 fee as so much per kWh generated at the nuclear
9 stations. There were some lawsuits involving whether
10 you use the kWh generated or kWh sold, but it was
11 definitely kWh.

12 Q. It was an energy pricing?

13 A. Yes. And it was also passed through from the
14 very -- from maybe not the original days, but somewhere
15 along the way in the early days of the '80s, passed
16 through to the Company's ratepayers as part of the fuel
17 factor, and therefore, was inherently allocated
18 according to energy.

19 Q. Okay. Thank you, sir.

20 CHAIRMAN FINLEY: Other questions by the
21 Commission? I have some questions. Maybe quite a
22 few.

23 EXAMINATION BY CHAIRMAN FINLEY:

24 Q. Mr. Maness, I'm trying to get a handle on

1 what are the components of the coal ash costs that are
2 at issue here. I think there is a number of
3 approximately \$66 million having to do with historical
4 costs and \$129 million with respect to future costs.
5 I'm just -- where can I look to see what the components
6 of those costs are, if anywhere?

7 A. If you excuse me a minute and let me pull
8 up --

9 Q. Sure.

10 A. (Witness peruses document.)

11 MR. DROOZ: Mr. Chairman, I will note
12 while he's looking for that, I think at least the
13 first number has been revised somewhat between the
14 Company and the Public Staff.

15 CHAIRMAN FINLEY: I understand that
16 there is a different number between the Company and
17 the Public Staff, and I appreciate that.

18 THE WITNESS: (Witness peruses
19 document.)

20 Yes. The \$66 million, as I recall, and
21 during the hearing I did some analysis for
22 Mr. Drooz based on the final positions of the
23 Company and the final positions of the Public
24 Staff, and my recollection is that the difference

1 between the two parties' positions is about
2 \$54 million on the defer and amortize piece, and
3 the -- I believe the number that we came to, as far
4 as what the Company's request was, considering both
5 the amortization expense and the inclusion in rate
6 base, was in the neighborhood of \$61 million.

7 BY CHAIRMAN FINLEY:

8 Q. And what are the -- can you help me with what
9 are the components of those numbers?

10 A. Well, as I said, the Company's -- excuse me
11 one second.

12 (Witness peruses document.)

13 The total Company amount of the cost that it
14 wishes to be amortized is approximately \$444 or
15 \$445 million. I believe that the North Carolina retail
16 portion of that, I want to say it's in the neighborhood
17 of \$230 million, but when the Company put forth what it
18 wanted in rate base for this case, it deducted the
19 first year of its amortization, which I believe brought
20 the number down to somewhere in the neighborhood of
21 \$190 million.

22 Q. All right. Let me go about it this way. My
23 understanding is, and I may be wrong about this, that,
24 by and large, these costs have to do with dewatering,

1 excavation, and removing ash from existing basins to
2 new basins or to cap in place existing basins; am I
3 wrong about that?

4 A. No. I think that's correct, yes.

5 Q. Are there any -- let's take the historical
6 piece, okay?

7 A. Yes, sir.

8 Q. Are there -- is there any money in there,
9 with respect to remediation, for anything in Dan River?

10 A. No. My understanding, and I think the --
11 Mr. Lucas and Witnesses Garrett and Moore have verified
12 that the Dan River costs -- cleanup costs are not
13 included.

14 Q. What about remedying leaking risers?

15 A. My presumption, since the Company has
16 indicated that all of its ash basin costs that are in
17 the asset retirement obligation, my presumption is that
18 those costs are included. I would have to rely on
19 Mr. Lucas, who has done a closer examination of the
20 actual charges, for whether any such specific charge
21 might be included. But our assumption is that the
22 Company had included everything that it believed was
23 permitted to be included in its asset retirement
24 obligation.

1 Q. All right. Mr. Lucas, are the costs in the
2 historical components that include remediation of a
3 riser -- leaking risers?

4 A. (Jay Lucas) We can't tell. To answer your
5 question, I would have to work with the Company in the
6 E-1 Item 10, NC-1800, like I said earlier, 27,000
7 entries. Not all those entries are perfectly clear as
8 to what they are. So it's possible that I could work
9 with the Company and get that data for you.

10 MR. DROOZ: I may be able to shortcut us
11 a little bit. You know we have agreed that the
12 Cape Fear leaking risers that were identified in
13 the federal criminal case, those costs have been
14 excluded from rate recovery. So that is not part
15 of the Company's request here. I think the
16 witnesses were struggling thinking about risers at
17 all different plants.

18 CHAIRMAN FINLEY: I understand.

19 BY CHAIRMAN FINLEY:

20 Q. What about remedies to dikes, having to do
21 with vegetation or remedying anything that had been
22 done with respect to the dike?

23 A. To my knowledge, those costs haven't been --
24 that's part of operations and maintenance, so it's not

1 specifically a coal ash cost.

2 Q. What about anything to remediate the toe
3 pools at the bottom of the dikes?

4 A. I'm not aware of any costs of those in the
5 rate case.

6 Q. What about surface water discharges?

7 A. I'm not aware of any. I -- but the
8 Company -- and go back. Are you specifically talking
9 about coal ash costs? I mean, costs for those things
10 you listed as part of coal ash cost?

11 Q. What I am asking about are, what are the
12 components of the historical costs that are being
13 disputed between the Company and the Public Staff; the
14 \$61 million, the \$54 million, I think, historical
15 piece?

16 A. Okay. I believe -- like just your last
17 question regarding NPDES outfalls, I don't think there
18 are any of those costs in that \$54 million.

19 Q. All right. With respect to the prospective
20 costs -- not the historical costs, but the prospective
21 costs, are they primarily, again, due to dewatering,
22 excavation, movement of coal ash from ponds and capping
23 in place?

24 A. Yes. And I explain a little bit. The

1 Company requested \$129 million, we call it a run rate.
2 And what they did, they just took all of their coal ash
3 cost from 2016 and presumed that was a typical year,
4 and for 2016 it was \$129 million, and said, okay, we
5 will be spending that for years to come. That's how
6 they developed that number.

7 Q. I know. I understand all that about the
8 process, but I'm looking for the components of the
9 costs.

10 A. Like you said, the ash management is overall
11 in those costs.

12 A. (Michael Maness) Mr. Chairman, if I may, I
13 do have some information, at least on 2016. I'm not
14 going to state in any of the numbers, because some of
15 them may be confidential, but just to give sort of the
16 feel for the numbers, particularly that our witnesses
17 Garrett and Moore were examining, we do have costs, I
18 think that the number for 2016 total Company that was
19 incurred, or maybe 2015 and 2016, and I don't believe
20 this number is confidential, was approximately
21 \$311 million. Now, there are costs related to coal ash
22 remediation, in general, at all of the Company's
23 utility plants that are involved: Mayo, Roxboro, Cape
24 Fear, H.F. Lee, Weatherspoon, Asheville, Sutton, and

1 Robinson. And I will just talk about some of the
2 categories, and I don't know if those will give you
3 exactly what you are looking for, but for example, we
4 have costs related to base enclosure including design
5 and permits, mobilization, site preparation, site
6 infrastructure, water treatment and management, ash
7 processing, construct a landfill, and cap in place,
8 site restoration, demobilization and closing, capital
9 expenditures related to equipment and facilities,
10 revenues, engineering closure plans, and some Duke
11 internal costs. For non-basin closure costs we have
12 several different types of overheads, including
13 government and staff budgets, inspection and
14 maintenance, engineering and projected budget,
15 environmental health and safety, post-closure
16 maintenance, and certain other amounts as well.

17 Q. Thank you. That's helpful, thank you,
18 Mr. Maness. Now, let me ask you -- I guess this is
19 primarily to you, Mr. Maness -- about the mechanism --
20 the cost of cover in this case. Seems like to me that
21 there are a number of mechanisms that are before the
22 Commission. I think Mr. Lucas sort of alluded to this
23 earlier, and I'm looking, you know, how alternatives
24 might be to facilitate your 50/50 sharing remedy. One

1 way would be to treat the costs as test year
2 expenditures, perhaps normalize those test year
3 expenditures on the theory that they are recurring
4 costs through perhaps 2028, and just, if you wanted to
5 apply your 50/50 sharing, just cut that in half. That
6 would be one mechanism that comes to mind. A second
7 one would be what I understand your mechanism to be,
8 which is to defer with a return the cost until the next
9 case, the next rate case, and then amortize those over
10 now I think 26 years with no return. Then my
11 assumption is that, in the next case, you sort of start
12 that process all over again for new costs that have
13 been incurred; is that basically correct?

14 A. Yes, sir. And the 26 years is somewhat
15 reliant on the rate of return. So if the rate of
16 return was different, then the number of years might be
17 different to reach the 50 percent mark.

18 Q. Okay. Aren't the acts and omissions that
19 give rise to the sharing mechanism, that we have gone
20 through substantially and in the testimony today, based
21 on historical events? We can look back and, for the
22 most part, and see what has happened already, those
23 acts and omissions; is that right?

24 A. That's, I believe, partially correct, and

1 that was the point I was trying to make earlier, is
2 that the equitable sharing is a result of both the
3 analysis conducted by Mr. Lucas and what appears in my
4 testimony, which is, even after you would remove all of
5 the truly imprudent and inappropriate costs that have
6 been demonstrated to date, which Witnesses Garrett,
7 Moore, and Lucas have done, and even if you were to
8 hypothesize that there wasn't any further reason in
9 acts and omissions for an equitable sharing, the
10 history of the Commission's ratemaking treatment of
11 other types of large costs, such as with abandonment of
12 nuclear and coal facilities, supports a sharing of
13 large and unique costs between -- in some cases,
14 between the customers and the shareholders in order to
15 provide rates that are reasonable. And so that's part
16 of our recommendation.

17 Q. I understand that is the justification for
18 your sharing, but I'm just trying to determine how to
19 accomplish that if the Commission should adopt your
20 recommendation. Most of that -- setting aside for the
21 moment the theory and what has happened with abandoned
22 nuclear and coal plants, manufacturing gas costs -- the
23 acts and omission that you are basing the 50/50 ratio
24 on, for the most part, have already occurred?

1 A. I would say that that's -- I'm not quite sure
2 what you mean by "acts and omissions," but I would
3 agree that the --

4 Q. What I'm talking about are the things that
5 Mr. Lucas mentions in his testimony and your other
6 experts have identified that we have been talking about
7 for the last week and a half.

8 A. Well, I do agree that that's part of it, but
9 as I said, even if you left out specific acts or
10 omissions of the Company and assumed everything was
11 prudent, aboveboard, it's still likely that we would
12 recommend a sharing of the cost between the ratepayers
13 and the shareholders. As far as the mechanism and how
14 the mechanism works, I guess I would say that some of
15 the activities that we would require sharing or
16 recommend a sharing are things yet to come when the
17 Company proceeds along its path of cleaning up its coal
18 ash basins.

19 Q. And that might change the 50/50 to
20 something -- a greater disallowance if you found
21 additional things in the future, that is a lesser
22 disallowance; wouldn't that be the case?

23 A. Yes, sir, that's a possibility.

24 Q. All right. And this process -- as I

1 understand it, we are gonna be -- to comply with the
2 CAMA and the CCR rules, there are going to be costs
3 incurred through 2028; is that correct?

4 A. (Jay Lucas) That's correct.

5 Q. So we may be having this sharing mechanism if
6 we were to adopt what the Public Staff recommends, even
7 many years beyond 2028, right?

8 A. (Michael Maness) Yes.

9 Q. All right. Then the other method would be
10 the DEP method, which would be defer these costs until
11 the next rate case and then true them up. Have a
12 deferral and an amortization and a true-up. That would
13 be a third method, correct?

14 A. The DEP method?

15 Q. Yes.

16 A. Well, they are proposing, of course, the run
17 rate, and that any difference between the run rate and
18 the actual costs that are incurred be deferred, and
19 then subject to consideration by the Commission in the
20 next case. Now, I think that what we have proposed
21 with no run rate, but to have the deferral, in concept,
22 is not different. It's just that our run rate would be
23 zero.

24 Q. All right. A fourth method would be just to

1 have a pure rider or a tractor, would it not, where you
2 put a number in there, \$129 million or whatever it
3 happens to be, for a year, and then take a look at it.
4 It would be based -- take a look at it historically,
5 and true it up for reasonable and prudent costs and
6 over and under recovery?

7 A. That would be possible.

8 Q. What's wrong with that? I guess that's my
9 question to you.

10 A. If you are not -- from a practical
11 standpoint, if you are not certain what the sharing
12 percentage should be for costs incurred in future
13 years, when you come to the next rate case, you are
14 going to have to sort of reach back and say, well, what
15 should the sharing have been for those particular years
16 for -- and then apply that somehow to dollars that have
17 already been potentially recovered from the customers.
18 I don't know that that makes it an impossible task, but
19 it does make it more difficult.

20 Mr. Drooz has also told me that it's -- that
21 when we start dealing with expenses, and using those as
22 a mechanism for sharing costs that are not necessarily
23 imprudent, that that is something that may not have
24 been reviewed by the courts of this state yet. And so

1 there could be legal questions, in terms of how do you
2 do that. And so we felt that it was -- besides being
3 easier to do, that it was safer to proceed with the
4 recommendation that there not be a run rate and that we
5 simply defer the entire cost.

6 Q. Would you consider a rider mechanism at all?

7 A. We discussed it, but we did not seriously
8 consider it.

9 Q. Well, I think I can tell you with some
10 confidence that whatever we come up with is gonna have
11 some legal challenges to it, so.

12 Let's talk about the used and useful debate
13 that you would have with Dr. Wright. First of all,
14 what difference does it make of whether it's used and
15 useful in the recommendation you made in this case?

16 A. I was concerned that using Dr. Wright's
17 interpretation somewhat muddies ratemaking treatment,
18 and the application of the statutes, and how it --
19 really, the only place in 62-133 that we talk about
20 "used and useful" is in property that should be allowed
21 in rate base, not expenses that should be allowed for
22 recovery. I don't remember the exact language sitting
23 here, but it's something like "reasonable and
24 appropriate expenses." And sometimes those expenses

1 can be associated with used and useful property, but
2 sometimes they may be somewhat independent. You know,
3 for example, executive salaries and other
4 administrative and general expenses might not be
5 generally associated with used and useful property. So
6 I didn't think it was appropriate to use that language
7 to somehow support the fact that all of these expenses,
8 which the Company, itself, has chosen not to try to
9 classify as utility plant, but instead to classify as a
10 regulatory asset, to not use the used and useful
11 language to support that inclusion. They should stand
12 on their own merits and not language that applies to
13 utility plant.

14 Q. All right. But you didn't make an adjustment
15 or recommendation -- your recommendation doesn't
16 depend, does it, on what the Company has classified as
17 used and useful; am I right about that?

18 A. That's correct.

19 Q. Just to be clear, one of the things we are
20 doing -- we showed it up on the screen here
21 yesterday -- we are putting liners under these coal ash
22 pits, right?

23 A. Yes, sir.

24 Q. And that's -- and we are putting caps or

1 purporting to put caps over some coal ash basins?

2 A. Yes.

3 Q. Isn't that used and useful expenditure to
4 keep the coal ash where it belongs?

5 A. Well, that raises a number of interesting
6 questions, and I can't pretend to be able to answer
7 them in detail. I have been searching for some answers
8 in the accounting literature and haven't found anything
9 direct yet.

10 Q. Well, I tell you what, if it doesn't make any
11 difference, I will just let it pass.

12 A. Well, I don't think it makes any difference
13 in this case.

14 Q. Okay.

15 A. There are -- the question is that, when the
16 Company makes an investment in order to provide for
17 this type of cleanup, whether that investment is a
18 capital investment or not, there is a question as to
19 whether -- that this Commission hasn't dealt with -- as
20 to whether that investment is a part of the utility
21 plant and service or whether it's part of providing for
22 the cost of retiring environmental -- the plants and
23 dealing with the potential environmental or other
24 liabilities that may arise. The Company -- and the

1 reason I say it doesn't make any difference in this
2 case, is the Company, itself, has chosen not to propose
3 to include these type of costs, at least the ones that
4 have been incurred so far, to my knowledge, as utility
5 plant and service. They have said that these costs
6 should be treated as regulatory assets, which puts them
7 in another category entirely. And the Company also
8 said, for example, when it -- I can't remember if it's
9 notification of the initial deferral or its later
10 proposal -- that it was at risk of having, I believe,
11 DEP approximately a \$291 million write-off to expense
12 if they did not receive the deferral accounting
13 treatment that they requested. Coincidentally, the
14 amount that the Company has proposed as a regulatory
15 asset for the 2015/2016 period is \$311 million. Now I
16 don't think those two numbers are calculated in the
17 exact same fashion, but I think it does serve to
18 illustrate that what we are talking about in this case
19 is, I believe, for the most part, costs that would be
20 written off to expense or as a loss and not costs that
21 would otherwise be recorded as plant and service.

22 Q. All right. Now, I'm a little bit concerned
23 that, if the Commission were to accept the Public Staff
24 recommendation of this after you eliminated the cost --

1 the identified costs that Public Staff maintains should
2 not be recovered, if we pick a 50/50 sharing, how are
3 we gonna support that? Why not 40/60, 60/40, 35/65,
4 65/35? I mean, can you give me any better information
5 as to why it ought to be 50/50 as opposed to some other
6 percentage?

7 A. Not really, other than that we have proposed
8 in our testimony, and with regard to the specific
9 percentage, it was the judgment of the Public Staff,
10 all of the members who served on the task force in the
11 aggregate, that 50 percent was a reasonable percentage.
12 I think these things have always been subject to the
13 Commission's judgment through the years. There have
14 been different amortization periods at times proposed.
15 I think, for Harris Unit 2, some parties proposed a
16 15-year amortization, which would have been, obviously,
17 a greater burden on the shareholders than the
18 ratepayers, but the Commission ultimately decided that
19 that should be a 10-year amortization. And, of course,
20 there have been some parties that have proposed, from
21 time to time, no recovery at all under various
22 theories.

23 Q. So you think, if the Commission sort of
24 followed your mechanism but disagreed with some of your

1 justifications for coming up with the 50/50 sharing,
2 that if we used something different that varied to some
3 extent and justified that, that you think that would
4 be, based on our judgment, on our discretion, that we
5 could have that upheld if it were reviewed by an
6 appellate court?

7 A. Speaking as an accounting person --

8 Q. Sure.

9 A. -- I believe it's ultimately up to the
10 Commission's discretion to determine what their sharing
11 should be.

12 Q. Now, we have made reference to nuclear costs,
13 discontinued plants, the Harris plant out there in Wake
14 County, for example. I understand that there is some
15 similarity to that and the manufactured gas costs, but
16 am I wrong that, by and large, when we got to the
17 prudence cases with the Harris plant, for example, you
18 sort of knew what the costs were? You were looking
19 backward, historically, what the costs were. And in
20 this case, to some extent, we are looking forward to
21 what we anticipate some future costs to be out through
22 2028.

23 A. Yes, sir. I think that, inherent in our
24 recommendation is the realization that the Company, and

1 I think -- I don't want to speak for our witnesses
2 Garrett and Moore, but at least my understanding is
3 that we all expect these costs to be, in the end, much
4 higher than the costs that are just historical as of
5 this point in time.

6 Q. All right. So let's talk about some of the
7 recommended disallowances, justifications for sharing
8 between ratepayers and the Company. Some of that,
9 Mr. Lucas, has to do with assumptions, on your part, as
10 to what some future tribunal or agency might be; isn't
11 that right?

12 A. (Jay Lucas) Are you talking about my
13 specific recommendations or the equitable sharing?

14 Q. The equitable sharing.

15 A. Yeah. Like we established, there is a lot
16 more future costs to come with management of coal ash.
17 But there are some specific costs in this case we would
18 like removed based upon equitable sharing.

19 Q. I am talking about looking in advance.

20 A. Yes.

21 Q. You make some -- and I will point you to your
22 testimony.

23 A. I'm aware of it, yeah.

24 Q. But are those -- are those known and

1 measurable changes?

2 A. We can't know them all at this point.

3 Q. And if you turn to page 44 of your
4 testimony --

5 A. (Witness peruses document.)

6 Q. -- beginning at line 12 there -- and you
7 could put this in the right context for me, but you
8 say, "Instead, based on the available data, I believe
9 it is fair to make a broad conclusion, at this time,
10 that at least some of the exceedances are due to
11 migration of CCR constituents. Exceedances of 2L
12 standards and IMACs, or exceedances of PBTBs, if they
13 are higher than TL standards or IMACs, at or beyond the
14 compliance boundary represent a probable future to make
15 environmental standards a violation that would need to
16 be corrected to achieve compliance with
17 15-A NCAC 2L .0106," right?

18 A. Yes. And I believe my revised supplemental
19 cleared it up a little bit. We definitely found some
20 failures and definite violations.

21 Q. But I am talking about the probable future
22 piece of your testimony.

23 A. Yes. One thing CAMA did, it required a lot
24 more extensive groundwater monitoring. From 2014 to

1 the present, the Company's tripled -- more than tripled
2 the number of groundwater wells. One of the theories
3 is, the more you look, the more you find. So I believe
4 that there could be future problems that we don't even
5 know about yet.

6 Q. But are those known and measurable at this
7 point in time?

8 A. No.

9 Q. All right. Let's see. If you flip over to
10 the next page, page 45, beginning on line 20 down there
11 you say, "DEQ, and DEP, and Wake County Superior
12 Court," you list the case numbers there, "they sued DEP
13 and Wake County" -- DEQ alleged unlawful discharges
14 from coal ash basins to surface waters of the state in
15 violation of the statutes there for noncompliance with
16 NPDES permits and known and potential groundwater
17 exceedances in violation of 2L rules, for example --
18 then you list the complaint.

19 A. Yeah, I see that.

20 Q. I mean, weren't there responses to that?

21 A. You mean --

22 Q. In the litigation, weren't there -- you list
23 the allegations, but weren't there responses to that?
24 I mean, what --

1 A. What the Company's responses were?

2 Q. Sure.

3 A. In that case, I don't think the Company --
4 I'm sorry. I have to look at my Exhibit Number 8 to
5 make sure I'm saying the right thing.

6 (Witness peruses document.)

7 That case was resolved because CAMA came
8 about and resolved the concerns of the Division of
9 Water Quality in that particular instance.

10 Q. But I think you're asking the Commission to
11 draw conclusions based on what you're saying your --

12 A. Oh, I --

13 Q. Just a minute. What the allegations are, and
14 we don't have the responses to what the Company said
15 with respect to that. I mean, wouldn't you have to
16 know all of that for us to make an informed decision
17 about that?

18 A. Well, in the federal criminal case, there was
19 a joint factual statement the Company agreed to, and
20 the Company says yes, there are 200 unpermitted seeps.

21 Q. Well, I'm not talking about the federal right
22 now. I'm talking about the state, which you cite here
23 on page 45 and 46.

24 A. Well, one premise of my testimony is the

1 Company's actions in the Dan --- and the Company was --
2 the Company's actions were a contributing factor to the
3 Dan River spill which led to the creation of CAMA. And
4 so I go back to my equitable sharing. We can't
5 specifically conclude, if there had never been a CAMA,
6 what would the Division of Water Quality, or as it says
7 earlier, or now, the Department of Environmental
8 Quality, what they would have done of the seeps, but
9 these seeps are illegal under state rules. The Company
10 had to do something. I did have some discussions with
11 the Department of Environment Quality back in October,
12 and they are working on the NPDES permits. One option
13 is to have the Company go into a special order by
14 consent to give us some time to correct those seep
15 problems. And the Company has taken some action. At
16 the Mayo plant, they are taking the seeps and pumping
17 the seep water back up into the ash basin. So that
18 takes care of the problem of an illegal discharge.

19 Q. Does that complete your answer?

20 A. Yes.

21 Q. All right. Look at page 50 and 52, and that
22 has to do with, as I read it, a DEQ assessed penalty of
23 \$25.1 million. And then you go through in your
24 single-spaced on that page and the next page, and you

1 list the violations that DEQ contended in that dispute
2 to have occurred, right?

3 A. That's correct.

4 Q. I want to show you those were contested by
5 the Company.

6 A. Well, in that case, with that Sutton plant,
7 there was a settlement. This wasn't just a cash
8 settlement. That's where the Company agreed to install
9 a groundwater extraction and treatment system to
10 remediate the problem.

11 Q. As you say, it was a settlement?

12 A. Yes.

13 Q. The \$25 million was reduced -- there are
14 other aspects, as you say, but the \$25 million was
15 reduced to \$7 million, right?

16 A. That's correct.

17 Q. And I think I heard you say yesterday that
18 the settlement, that the Company pays a lot of money,
19 that in your opinion, that's some evidence that they
20 are guilty of the violations of which they are accused?

21 A. That is some evidence, but during our
22 investigation we found -- Public Staff is convinced
23 there were groundwater violations. It wasn't a
24 baseless case. The Company had responsibility for

1 contaminating the groundwater.

2 Q. This was before Office of Administrative
3 Hearings?

4 A. (No response.)

5 Q. On page 52, line 6.

6 A. (Witness peruses document.)

7 Yeah. Yes.

8 Q. Are you familiar with the Office of
9 Administrative Hearings?

10 A. Somewhat. I have had some contested NPDES
11 permits before the Office of Administrative Hearings.

12 Q. Do you know any of the judges over there?

13 A. No. None of them now.

14 Q. If I told you, Mr. Lucas, that as the
15 Chairman of this Commission, I was involved in a case
16 over in the Office of Administrative Hearings where I
17 was absolutely 100 percent convinced that, in my
18 dispute, I was absolutely right, and the other side was
19 absolutely baseless, but based on the advice I was
20 getting from my lawyer, and the other state agencies
21 that were giving me advice, and the attitude of the
22 judge, and the rulings that the judge had made, that I
23 determined that I was gonna settle that case for
24 hundreds of thousands of dollars, rather than what I

1 was afraid might be the outcome based on what I believe
2 the other side's position to be absolutely baseless; if
3 I told you that, would you have any reason to dispute
4 that?

5 A. No, I wouldn't dispute you.

6 Q. All right. Settlements mean a lot of
7 different things to different people, right?

8 A. Yes. But I go back to my premise. I think
9 the Company had illegal seeps. It was caught
10 disobeying the law. So it had culpability. So there
11 was going to be some negative outcome from the Company,
12 whether it settled or waited for an opinion --
13 requirements for remediation by the Department of
14 Environmental Quality.

15 Q. All right. Is part of the 50/50 sharing that
16 you are recommending in this case based on that part of
17 your testimony in the settlement before Office of
18 Administrative Hearings?

19 A. In some part, yes. To a larger part, the
20 fact that CAMA settled some of the plaintiff's
21 concerns, that's why I also recommend equitable
22 sharing.

23 Q. But again, it's -- the 50/50 is sort of
24 subjective, and you don't attribute any part of

1 that -- you can't attribute any part of that 50 percent
2 disallowance to what happened before the Office of
3 Administrative Hearings, right? The accumulation of
4 things that you identified, and then you based on all
5 of that, you came up with the 50/50.

6 A. Mr. Maness came up with the 50/50, but my
7 equitable sharing, the settlement is such a small
8 piece. The violations, CAMA, itself, I mean, I have a
9 large story as to why we come up with equitable shares,
10 and the settlements are one small piece of it.

11 Q. All right. Bear with me a minute here. But
12 we have heard talk about Dan River, we have heard talk
13 about risers, we've heard about dikes, we've heard
14 about dike toe pools, we've heard about surface water
15 discharges and groundwater seeps from the bottom of
16 unlined pits, right?

17 A. That's correct.

18 Q. What other general category -- is that most
19 of the categories, or are there others?

20 A. That's pretty much it, yes.

21 Q. All right. With respect to the releases from
22 the groundwater -- releases into the groundwater from
23 the bottom of the coal ash pits, have there been pleas
24 of guilty, findings of guilt in the criminal context, a

1 fine or penalty in a matter before an administrative
2 agency or court, and a fine amount appealable, or
3 appealed case having to do with leaks from the bottom
4 of the coal ash pits into the groundwater?

5 A. Well, in the federal case, in the joint
6 factual statement, the Company agrees that it created
7 exceedance of groundwater standards, which is an
8 indication of coal ash wastewater leaking into the
9 groundwater.

10 Q. Anything else?

11 A. I'm trying to think of any -- another part of
12 your question is regarding fines. So maybe the
13 difference between a fine and a settlement and the
14 payments DEQ --

15 Q. I want to leave settlements out.

16 A. Okay. I don't think they label it as a fine.

17 Q. All right. Once you dewater the pits that
18 have to be dewatered and you move the coal ash from
19 those pits and you put them in another place, if you do
20 that right, and if you cap in place the ones that
21 environmental regulators and legislature determine have
22 to be capped in place, that's gonna eliminate things
23 like risers, and dikes, and dike toe pools, and surface
24 water discharges; would it not?

1 A. That's right. If they close the basin, that
2 would all go away.

3 Q. And you could remedy those types of things
4 without the ultimate remedy of dewatering, removing the
5 ash, and taking them to another place?

6 A. Yeah, there are other remedies. Lining the
7 basins, that sort of thing.

8 Q. But in order to prevent the leachate, as we
9 heard it called, from the bottom of the impoundments
10 into the groundwater, or I guess there are other
11 remedies to do that, but ultimately that's the one
12 that's -- is that the direct cause of the need to move
13 this ash, dewater and move it to take it to another
14 place?

15 A. Yes.

16 Q. That's all I have. Thank you.

17 CHAIRMAN FINLEY: Are there questions --
18 other questions from the Commissioners? Are there
19 questions on the Commission's questions.

20 MR. BURNETT: No, sir.

21 MR. DROOZ: Just a few.

22 MR. SOMERS: I have just a couple for
23 Mr. Maness.

24 EXAMINATION BY MR. SOMERS:

1 Q. Good morning.

2 A. (Michael Maness) Good morning.

3 Q. Mr. Clodfelter asked about cost allocations
4 of nuclear spent fuel; do you remember that question or
5 a couple questions around that?

6 A. Yes.

7 Q. I believe your answer was, some might be
8 allocated based on demand, some might be based on
9 energy, but you would want to do more research or
10 analysis to fully answer the question; is that right?

11 A. Yes.

12 Q. But as to the spent fuel, itself, which is
13 the by-product of producing electricity, that is
14 allocated based on demand, correct?

15 A. The spent fuel, itself? I'm not sure how to
16 answer the question, because you have -- first of all,
17 you have interim storage of it; you have permanent
18 storage of it at some point, hopefully; and you have
19 the fuel, itself. So I think the fuel, itself, and its
20 state of being used is allocated by energy. After
21 that, you are talking about the costs of storing it on
22 a -- on an interim basis, and then the costs of storing
23 it that have been incurred so far on a permanent basis,
24 and I think there is different allocation factors

1 potentially for each one of those.

2 Q. And you reviewed Ms. Hager -- Company witness
3 Janice Hager's rebuttal testimony on behalf of the
4 Company where she testified that the end-of-life
5 nuclear fuel costs and nuclear decommissioning costs
6 are allocated based on demand, correct?

7 A. Yes. And I know there is an input for spent
8 fuel on -- within the nuclear decommissioning costs,
9 but I believe, subject to further research, that there
10 are also certain interim storage costs which are not
11 necessarily included in nuclear decommissioning, but
12 are, in fact, included in O&M expenses, depreciation
13 expenses that are being incurred today, but I would
14 need to -- further research to make sure of that.

15 Q. You don't disagree with Ms. Hager's
16 testimony, you just need more time in order to form an
17 opinion; is that what I'm hearing you say?

18 A. Yes.

19 Q. Okay. Thank you.

20 MR. SOMERS: No further questions.

21 CHAIRMAN FINLEY: Mr. Drooz.

22 EXAMINATION BY MR. DROOZ:

23 Q. You were asked, Mr. Lucas, about the extent
24 to which some of the violations might be something --

1 or even the coal ash issues, in general, something
2 known in the future versus known from the past.

3 If you know, are you aware of pending
4 lawsuits involving alleged Clean Water Act violations
5 at the Mayo and Roxboro plants?

6 A. (Jay Lucas) Yes. Those are ongoing.

7 Q. Okay. And did the allegations there involve
8 alleged exceedances that occurred in the past?

9 A. Yes.

10 Q. But the determination by the court has yet to
11 be made?

12 A. That's correct.

13 Q. In terms of reported 2L exceedances, does DEQ
14 go through a review process to determine which ones
15 could be caused by natural background and which ones
16 are due to coal ash migration to the compliance
17 boundary or beyond?

18 A. They have, looked at it and determined if some
19 are violations where some of these exceedances were
20 caused by coal ash.

21 Q. And do you know the timing on when that
22 assessment about provisional background levels has been
23 reviewed at DEQ?

24 A. That wasn't done until October.

1 Q. Okay. And are there pending NPDES permit
2 renewal requests that involve what are currently
3 unauthorized seeps?

4 A. That's correct. The Department of
5 Environmental Quality is still trying to make a
6 determination how it's going to treat seeps in these
7 permits that are under review.

8 Q. You were asked -- and I will go back to this
9 question -- if the Company, when it was sued in these
10 state enforcement actions and elsewhere, like the
11 Sutton penalty assessment, did the Company deny the
12 allegations, if you know?

13 A. No, it didn't deny them.

14 Q. Are you sure about that?

15 A. To my knowledge, they didn't.

16 Q. If they admitted the allegations, then
17 wouldn't there have just been a judgment against them
18 by default or, in fact, without a settlement or without
19 a dismissal?

20 A. If they admitted fault, they could have gone
21 into a plea agreement. I mean, they could have --

22 Q. Let me redirect your attention back to your
23 Exhibit 6, the revised exhibit.

24 A. Okay.

1 Q. Are you there?

2 A. (Witness peruses document.)

3 Yes.

4 Q. The first column is parameters and the second
5 column is Asheville?

6 A. Yes.

7 Q. And then if you go a bit further, you see a
8 column entitled Sutton?

9 A. Yes.

10 Q. And you go down to the violation subtotal;
11 what is the number of violations for Asheville shown on
12 this exhibit?

13 A. For Asheville is --

14 MR. BURNETT: Mr. Chairman, objection.
15 I think this is outside the scope of any Commission
16 question.

17 MR. DROOZ: This actually goes to the
18 question of the Company having denied the
19 allegations, and then whether or not there was some
20 evidence to support it.

21 CHAIRMAN FINLEY: Okay. Overruled.

22 BY MR. DROOZ:

23 Q. If you could read the number of violations
24 for Asheville.

1 A. Asheville is 725 groundwater violations.

2 Q. What about Sutton?

3 A. Sutton was 723 groundwater violations.

4 Q. Even if the Company denied the allegations,
5 in your judgment as an engineer, what does this exhibit
6 show?

7 A. It shows, in fact, that there were
8 groundwater violations.

9 Q. Thank you. That's all.

10 CHAIRMAN FINLEY: All right. Thank you
11 all. We will accept the exhibits into evidence and
12 the cross examination exhibits into evidence.

13 (Whereupon, Direct Lucas Exhibit Numbers
14 1 through 9, Supplemental Revised Lucas
15 Exhibit Numbers 5 and 6, Direct Maness
16 Exhibit Numbers 1 through 3,
17 Supplemental Maness Exhibit Number 1,
18 and DEP Lucas Cross Examination Exhibit
19 Numbers 1 through 4 were admitted into
20 evidence.)

21 CHAIRMAN FINLEY: Mr. Maness and
22 Mr. Lucas, you may be excused. We're going to take
23 a recess until 11:25.

24 (Whereupon, a recess was taken from

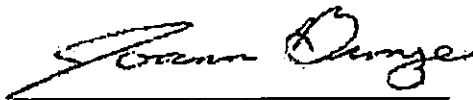
1 CERTIFICATE OF REPORTER

2
3 STATE OF NORTH CAROLINA)

4 COUNTY OF WAKE)

5
6 I, Joann Bunze, RPR, the officer before
7 whom the foregoing hearing was taken, do hereby certify
8 that the witnesses whose testimony appears in the
9 foregoing hearing were duly sworn; that the testimony
10 of said witnesses was taken by me to the best of my
11 ability and thereafter reduced to typewriting under my
12 direction; that I am neither counsel for, related to,
13 nor employed by any of the parties to this; and
14 further, that I am not a relative or employee of any
15 attorney or counsel employed by the parties thereto,
16 nor financially or otherwise interested in the outcome
17 of the action.

18 This the 10th day of December, 2017

19
20 
21

22 JOANN BUNZE, RPR

23 Notary Public #200707300112
24

FILED

DEC 11 2017

Clerk's Office
N.C. Utilities Commission

JAY B. LUCAS, PE

Public Staff - North Carolina Utilities Commission
430 North Salisbury Street
Raleigh, North Carolina 27699
(919) 733-0882

EXPERIENCE

August 2007 to
Present

North Carolina Utilities Commission, Public Staff - Electric Division
Public Utilities Engineer III

- Manage regulatory aspects of the NC Renewable Energy Portfolio Standard to include enforcement, application review, and environmental assessments.
- Review depreciation expenses of electric public utilities.
- Make recommendations to the Utilities Commission and other divisions of the Public Staff on engineering issues regarding electric utilities.
- Resolve consumer complaints that involve technical issues.

April 2005 to
August 2007

North Carolina Utilities Commission, Public Staff - Communications Division
Public Utilities Engineer II

- Reviewed new franchise applications for long distance companies and testified before the Commission on recommendations.
- Assisted in resolving disputes between telephone companies.
- Resolved consumer complaints that involve technical issues.
- Drafted recommendations to the Utilities Commission on new rules for companies that terminate operations.

January 2000 to
March 2005

North Carolina Utilities Commission, Public Staff - Water & Sewer Division
Public Utilities Engineer I

- Reviewed applications for actions taken by water and sewer utilities to include new franchises, rate increases, transfers, and extensions of service.
- Negotiated and wrote testimony and affidavits regarding actions taken by water and sewer utilities to ensure adequate service at a fair rate for the state's utility customers.

April 1996 to
January 2000

North Carolina Division of Water Quality - Construction Grants & Loans Section
Supervisor of the Facilities Evaluation Unit

- Supervised the Facilities Evaluation Unit which consisted of two other engineers and one environmental assessment coordinator for the long range planning of municipal wastewater facilities.
- Planned municipal wastewater facilities to include all technical and environmental concerns.

January 1993 to
March 1996

North Carolina Division of Water Quality - Permits and Engineering Unit
Environmental Engineer I

- Reviewed applications and prepared wastewater and stormwater discharge permits for industries, municipalities, and utilities to include calculating discharge limits.
- Reviewed plans and specifications for construction of wastewater treatment plants.

January 1992 to
January 1993

Wiley & Wilson, Inc. Architects, Engineers, and Planners, Lynchburg, Virginia
Environmental Engineer

- Assisted in the design and review of water and wastewater treatment plants.
- Co-authored sewage treatment plant operations and maintenance manual.
- Planned and conducted waste oil management survey for Navy installations in the Norfolk, Virginia area.

August 1989 to
December 1991

Department of Environmental Engineering, Virginia Tech
Graduate Research Assistant and Research Associate

- Conducted research project funded by CH2M Hill Consulting Engineers and the City of Newport News, Virginia to determine the effect of land applied water treatment sludge on plant growth and find optimum loading rates.
- Planned upgrade of the Nottoway County, Virginia, water supply system which included an evaluation of existing distribution systems and potential resources.

October 1985 to
August 1989

3800th Civil Engineering Squadron, Maxwell Air Force Base, Alabama
Captain - U. S. Air Force, Civil Engineer

- Managed storage and disposal of hazardous wastes, asbestos, and PCB contaminated electrical equipment.
- Designed storm drainage improvements, athletic fields, and training areas to include site plans, drawings, specifications, and cost estimates.
- Reviewed and corrected designs completed for the Air Force by engineering consultants.
- Led 40-person combat engineering team during exercises to repair bomb-damaged infrastructure.

EDUCATION

1989 to 1991

Master of Science, Environmental Engineering
Virginia Tech - Blacksburg, Virginia

1981 to 1985

Bachelor of Science, Civil Engineering
Virginia Military Institute - Lexington, Virginia

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. EMP-103, SUB 0**

**Testimony of Evan D. Lawrence
On Behalf of the Public Staff
North Carolina Utilities Commission**

May 24, 2019

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE**
2 **RECORD.**

3 **A. My name is Evan D. Lawrence. My business address is 430 North**
4 **Salisbury Street, Raleigh, North Carolina.**

5 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

6 **A. I am an engineer in the Electric Division of the Public Staff.**

7 **Q. WOULD YOU BRIEFLY DISCUSS YOUR EDUCATION AND**
8 **EXPERIENCE?**

9 **A. Yes. My education and experience are summarized in Appendix A to**
10 **my testimony.**

11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 **A. The purpose of my testimony is to make recommendations to the**
13 **Commission on the request for a Certificate of Public Convenience**
14 **and Necessity (CPCN) filed by Albemarle Beach Solar, LLC**
15 **(Applicant), to construct an 80 megawatt AC (MW_{AC}) solar**
16 **photovoltaic (PV) merchant electric generating facility in Washington**
17 **County, North Carolina (the Facility).**

1 The purpose of my testimony is as follows:

- 2 1. To discuss the compliance of the application with N.C. Gen.
3 Stat. § 62-110.1 and Commission Rule R8-63;
4 2. To discuss any concerns raised by the application; and
5 3. To make a recommendation regarding whether the
6 Commission should grant the requested certificate.

7 **Q. PLEASE BRIEFLY DESCRIBE THE GENERATION FACILITY**
8 **PROPOSED TO BE CONSTRUCTED BY THE APPLICANT.**

9 A. The Applicant proposes to construct an 80 MW_{AC} solar PV electric
10 generating facility in Washington County, North Carolina. The Facility
11 will utilize single axis tracking, ground mounted, solar PV modules.
12 Approximately 367,213 solar PV modules will be used along with
13 fifty-four 1.56 MW inverters. A 34.5 kV collector substation will be
14 constructed adjacent to an existing Dominion Energy North Carolina
15 (DENC) 230 kV substation. The point of interconnection (POI) will be
16 located at the existing DENC substation. The Applicant states that
17 either overhead or underground medium-voltage cable will be used
18 to connect the multiple sections of panels. The yearly generation is
19 anticipated to be 193,957 MWh. Due to the fact that solar is an
20 intermittent energy source, the maximum dependable capacity of the
21 plant is 0 MW. The expected life of the facility is a minimum of twenty
22 years.

1 **Q. HAS THE APPLICANT COMPLIED WITH THE COMMISSION'S**
2 **FILING REQUIREMENTS?**

3 A. Yes. The original application for the Facility was filed on September
4 21, 2015, in Docket SP-6476, Sub 0. On November 12, 2018, the
5 Applicant filed an amended application modifying the site layout to
6 reflect both the addition and removal of parcels of land.

7 On November 29, 2018, the Commission issued an Order
8 Transferring Record, Closing Docket, and Finding Application
9 Incomplete. This Order determined that the Applicant erred in
10 applying for a CPCN pursuant to Commission Rule R8-64, the rule
11 governing CPCN applications by CPRE program participants,
12 qualifying cogenerators, or small power producers, and that the
13 application is instead governed by Commission Rule R8-63, the rule
14 governing CPCN applications for merchant plants. Based on this
15 determination, the Order directs that Docket No. SP-6476, Sub 0, be
16 closed, and that the record from that docket be transferred to Docket
17 No. EMP-103, Sub 0. The Order further finds the Applicant's CPCN
18 application, as transferred to Docket No. EMP-103, Sub 0, to be
19 incomplete as it does not include pre-filed direct testimony
20 incorporating and supporting the application, as required by
21 Commission Rule R8-63(b)(5). The Order declares that the
22 Applicant's amended CPCN application filed in Docket No. SP-6476,
23 Sub 0, is an application for a CPCN for the construction of an electric

1 generating facility to be operated as a merchant plant pursuant to
2 Commission Rule R8-63, and that the Commission will consider the
3 application once the Applicant has supplemented it with the pre-filed
4 direct testimony required by Commission Rule R8-63(b)(5).

5 On March 28, 2019, the Applicant filed the direct testimony of Linda
6 Nwadike, Project Manager for SunEnergy1, LLC, along with four
7 accompanying exhibits. On April 11, 2019, the Applicant filed
8 Amended Pre-Filed Direct Testimony of Linda Nwadike along with
9 ten accompanying exhibits.

10 On April 11, 2019, the Public Staff notified the Commission that it
11 considered the application to be complete and requested that the
12 Commission issue a procedural order setting it for hearing. On April
13 26, 2019, the Commission issued an Order requiring public notice,
14 scheduling a hearing on June 4, 2019, for the purpose of receiving
15 public and expert testimony, and addressing other necessary
16 procedural matters. On May 1, 2019, the Commission issued an
17 Amended Order Scheduling Hearing and Requiring Public Notice to
18 correct scrivener's errors in the April 26, 2019, Order.

19 On May 20, 2019, the Applicant filed a certificate of service to show
20 compliance with Ordering Paragraph Number 3 of the Commission's
21 May 1, 2019 Order. This paragraph ordered the Applicant to mail a
22 copy of the public notice, no later than the first day of publication, to

1 each person who has filed a complaint in the proceeding, and to file
2 a certificate of service with the Commission on or before the date of
3 the hearing.

4 **Q. HAS THE APPLICANT SHOWN A NEED FOR ITS PROPOSED**
5 **FACILITY?**

6 A. Yes. The Applicant states that the Facility will interconnect with the
7 transmission system of DENC, which is a member of PJM. The
8 Applicant believes there are strong market conditions in the PJM
9 market that will create sustainable off-take for its power production.
10 The Applicant states that Dominion Energy has committed to
11 increasing its use of renewable power to generate 5,000 MW of
12 electricity by 2028. The Applicant states that it anticipates contracting
13 the sale of energy, capacity, and renewable energy credits (RECs)
14 through PJM. The annual net energy growth rates for PJM over the
15 next ten years is expected to grow by 0.4% for PJM and by 1.1% for
16 the Dominion Virginia Power zone. Summer peak load for PJM and
17 the Dominion Virginia Power zone is expected to grow by 0.9% per
18 year over the next ten years. The winter peak load growth in PJM is
19 expected to grow at an average of 0.4% per year over the next ten
20 year period, and by 1.1% per year for the Dominion Virginia Power
21 zone. The Applicant cites the March 2019 PJM Load Forecast Report
22 to support the growth in PJM, the growth in the Dominion Virginia
23 Power zone, and the need for the facility.

1 Q. HAS THE STATE CLEARINGHOUSE COMPLETED ITS
2 APPLICATION REVIEW?

3 A. No. The State Clearinghouse has not filed a letter in the docket in
4 response to the Commission's Order Scheduling Hearing and
5 Requiring Public Notice filed on April 26, 2019.

6 Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS
7 REGARDING THE SITING OF THE PROPOSED FACILITY OR ITS
8 ENVIRONMENTAL IMPACT?

9 A. No. The Public Staff has reviewed the consumer statements of
10 position in this docket. With regard to the concerns raised regarding
11 compatibility with existing land uses and environmental impacts, the
12 Public Staff believes that these concerns are more appropriately
13 addressed through the local permitting process and through the
14 environmental permitting process. In its April 24, 2008, Order in
15 Docket No. SP-231, Sub 0, the Commission discussed local
16 authority over the siting of facilities, stating that "such decisions are,
17 in most instances, best left to the local community through the
18 exercise of its zoning authority rather than made by the
19 Commission." The Public Staff notes that, according to the
20 Applicant's witness, Linda Nwadike, Washington County has a Solar
21 Farm Ordinance that requires a solar development permit for all solar
22 projects proposed in the county.

1 In addition, the Public Staff does not have particular expertise in the
2 area of the impacts of electric generation on the environment. Those
3 issues are best left to the purview of environmental regulators who
4 do have this expertise, and who are responsible for issuing specific
5 environmental permits for electric generating facilities. To that end,
6 as stated below, the Public Staff recommends that the Commission
7 require compliance with all permitting requirements as a condition to
8 the issuance of the CPCN.

9 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON THE**
10 **APPLICATION FOR A CPCN AND THE REGISTRATION**
11 **STATEMENT?**

12 A. The Public Staff recommends that the application be approved
13 subject to the following conditions:

- 14 1. The Applicant shall construct and operate the Facility in strict
15 accordance with applicable laws and regulations, including
16 the provisions of all permits issued by the North Carolina
17 Department of Environmental Quality;
- 18 2. The Applicant shall not begin construction until the State
19 Clearinghouse files comments indicating that no further
20 review action by the Commission is required for compliance
21 with the North Carolina Environmental Policy Act;

1 3. The CPCN shall be subject to Commission Rule
2 R8-63(e) and all orders, rules and regulations as are now or
3 may hereafter be lawfully made by the Commission; and

4 4. The Applicant shall file with the Commission in this docket a
5 progress report and any revisions in the cost estimates for the
6 Facility on an annual basis, including any storage systems to
7 be constructed at a later date, with the first report due no later
8 than six months from the date of issuance of the CPCN.

9 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

10 **A. Yes, it does.**

APPENDIX A

Evan D. Lawrence

I graduated from East Carolina University in Greenville, North Carolina in May of 2016 earning a Bachelor of Science degree in Engineering and a concentration in Electrical Engineering. I started my current position with the Public Staff in September of 2016. Since that time my duties and responsibilities have focused around the review of renewable energy projects, rate design, and renewable energy portfolio standards compliance. I have filed affidavits in Dominion Energy North Carolina's 2017 and 2018 REPS cost recovery proceeding, testimony in New River Light and Power's (NRLP) most recent rate case proceeding, and testimony in additional small power producer and merchant electric generating facilities (EMPs). I have also assisted other Public Staff personnel with the review and investigation of REPS Compliance Plans filed by the electric power suppliers, previous DEC and DEP REPS cost recovery proceedings, and multiple other cases.

1 APPEARANCE OF COUNSEL:

2 For Duke Energy Progress, Inc.:

3 JOAN S. DINSMORE, ESQ.

4 MARY LYNN GRIGG, ESQ.

5 McGuire Woods LLP

6 434 Fayetteville Street, Suite 2600

7 Raleigh, NC 27601

8 919-755-6573

9 jdinsmore@mcguirewoods.com

10 mgrigg@mcguirewoods.com

11

12 Also Present by Telephone: LARA S. NICHOLS, In-House
13 Counsel for Duke Energy

14 For the North Carolina Department of Justice:

15 TERESA L. TOWNSEND, ESQ.

16 MARGARET A. FORCE, ESQ.

17 Assistant Attorneys General

18 State of North Carolina DOJ

19 114 W. Edenton Street

20 Raleigh, NC 27603

21 919-716-6000

22 ttownsend@ncdoj.gov

23 pforce@ncdoj.gov

24

25

1 APPEARANCES (Continued)

2 For the NC Utilities Commission:

3 DAVID DROOZ, ESQ.

4 LAYLA CUMMINGS, ESQ.

5 DIANNA W. DOWNEY, ESQ.

6 TIMOTHY R. DODGE, ESQ. (By Telephone)

7 Public Staff - NC Utilities Commission

8 State of NC Department of Commerce

9 430 N. Salisbury Street

10 Raleigh, NC 27603

11 david.drooz@psncuc.nc.gov

12 layla.cummings@psncuc.nc.gov

13 dianna.downey@psncuc.nc.gov

14 tim.dodge@psncuc.nc.gov

15

16 Also Present: CHARLES M. JUNIS - Engineer

17 Also Present: JAMES S. McLAWHORN - Director,
18 Electric Division

19

20

21

22

23

24

25

1 APPEARANCES (Continued)

2 For the Sierra Club:

3 DORI JAFFE, ESQ. (By Telephone)

4 BRIDGET LEE, ESQ. (By Telephone)

5 MATT QUINN, ESQ. (By Telephone)

6 Sierra Club

7 50 F Street, NW, Eighth Floor

8 Washington, DC 20001

9 202-675-6275

10 dori.jaffe@sierraclub.org

11 bridget.lee@sierraclub.org

12 matt@attybryanbrice.com

13

14 For the Carolina Utility Customers Association, Inc.:

15 CINDY OHMS, ESQ. (By Telephone)

16 Carolina Utility Customers Association, Inc.

17 1708 Trawick Professional Center, Suite 210

18 Raleigh, NC 27604

19 919-212-2880

20 cuca@cucainc.org

21

22

23

24

25

1 APPEARANCES (Continued)

2 For the North Carolina Sustainable Energy Association:

3 THAD CULLEY, ESQ. (By Telephone)

4 Keyes & Fox, LLP

5 401 Harrison Oaks Blvd.

6 Cary, NC 27513

7 919-825-3477

8 tculley@kfwlaw.com

9

10 Also Present: DeANDRAE SHIVERS, Videographer

11

12

13 oOo

14

15 Video Deposition of JAY LUCAS, taken by

16 Duke Energy Progress, at McGuire Woods LLP, 434

17 Fayetteville Street, Suite 2600, Raleigh, North

18 Carolina, on the 2nd day of November, 2017 at 9:02

19 a.m., before Marisa Munoz-Vourakis, Registered Merit

20 Reporter, Certified Realtime Reporter and Notary

21 Public.

22

23

24

25

1	I N D E X	
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1 PROCEEDINGS

2 THE VIDEOGRAPHER: This is the
3 beginning of disk number one in the
4 deposition of Jay Lucas in the matter of
5 Application of Duke Energy Progress, LLC for
6 Adjustment of Rates and Charges Applicable
7 to Electric Utility Service in North
8 Carolina, docket number E2 sub 1142.

9 Today's date is November 2, 2017, and
10 the time is approximately 9:02 a.m.

11 My name is DeAndrae Shivers, I'm the
12 videographer. Our court reporter is Marisa
13 Munoz.

14 Will our court reporter please swear
15 in the witness.

16 Whereupon, JAY LUCAS, having been
17 first duly sworn, was examined
18 and testified as follows:

19 EXAMINATION BY COUNSEL FOR DUKE ENERGY
20 BY MS. DINSMORE:

21 Q. Good morning, Mr. Lucas.

22 A. Good morning.

23 Q. My name is Joan Dinsmore. I'm with the law
24 firm of McGuire Woods. I, along with my partner, Mary
25 Lynn Grigg, represent Duke Progress Energy in this

1 matter.

2 Can you please state your full name and
3 business address for the record?

4 A. My name is Jay Lucas. My business address
5 is 430 North Salisbury Street, Raleigh, North Carolina.

6 Q. Have you had your deposition taken before?

7 A. No.

8 Q. I believe you were present for some of
9 yesterday's festivities, is that right?

10 A. Yes.

11 Q. So you heard me give a few introductory
12 instructions, but I'll just remind you. We have a
13 court reporter here who's taking down everything we
14 say, so if you could just wait until I finish my
15 question before you begin your answer so she can get a
16 clean transcript, and likewise I'll wait for you to
17 finish before starting my next question, is that okay?

18 A. Sure.

19 Q. And your attorney may interpose objections.
20 If he does, just wait for him to finish his objection
21 before you answer. But after he objects, you'll be
22 expected to answer the question; unless he instructs
23 you not to, is that okay?

24 A. Sure.

25 Q. And please feel free to ask for a break at

1 any time. I am happy to take breaks, as long as
2 there's no question pending.

3 A. Okay, sure.

4 Q. I read through your report and the
5 exhibits, and attached to your report there was a brief
6 blurb about your experience, but I didn't see a CV. Do
7 you have a CV?

8 A. No, I don't.

9 Q. Okay. So I'm going to just fill in some
10 background.

11 A. Sure.

12 Q. You went to VMI and graduated, I believe,
13 in '85 with a degree in civil engineering?

14 A. Yes.

15 Q. And then you went to Virginia Tech
16 thereafter, but there's a period of time, so --

17 A. Yes, I spent four years in the Air Force as
18 an environmental engineer.

19 MR. DROOZ: Let her finish the
20 questions.

21 THE WITNESS: I'm sorry.

22 BY MS. DINSMORE:

23 Q. Right. So when we talk in normal
24 conversation, you can see where my question is going
25 and you answer.

1 A. I'm sorry.

2 Q. So but for purposes of the deposition, just
3 wait for me to finish, even if you know where I'm
4 going.

5 A. Okay, sure.

6 Q. Thank you. So you mentioned that you were
7 an environmental engineer in the Air Force, is that
8 right?

9 A. Yes.

10 Q. What were your job duties?

11 A. We had many environmental compliance
12 requirements. The Air Force had a program or the
13 entire Department of Defense had a program called the
14 Installation Restoration Program, that was very similar
15 to the EPA's Superfund program, as remediation of sites
16 where hazardous waste had been disposed of improperly.
17 Our Air Force base had a landfill, had to manage that.
18 We had storm water permits. We had an asbestos removal
19 program, hazardous waste disposal. Those are the
20 environmental requirements. Had a war time training
21 job of doing bomb damage repair.

22 Q. You mentioned a landfill?

23 A. Yes.

24 Q. Requiring remediation, is that right?

25 A. No, the Installation Restoration Program

1 was a remediation program for past disposal sites. The
2 landfill had been closed. We just had to do active
3 ground water monitoring at that landfill.

4 Q. What were some of the constituents at that
5 landfill that were found through the ground water
6 monitoring program?

7 A. Iron and chlorides. We also had to monitor
8 for PH, and that's all I can remember.

9 Q. Did you, in that work, do any analysis of
10 those levels as compared to background levels to
11 determine the impact from the landfill?

12 A. Yes, we had upstream wells, and we checked
13 for background levels.

14 Q. Did you personally do that analysis?

15 A. We had a chemical lab that actually did the
16 chemical analysis. We did compare them to background
17 levels.

18 Q. But you personally, was that part of your
19 job or was that just --

20 A. Yes, to take a look at background levels of
21 contaminants and the downgradient contaminant levels.

22 Q. What, if anything, did you conclude about
23 any impacts from that landfill on ground water?

24 A. We did find some elevated levels of iron
25 and chlorides, but our state regulatory agency, the

1 Alabama Department of Environmental Management, never
2 took any action.

3 Q. Did you take any action on your own?

4 A. No.

5 Q. Why not?

6 A. We didn't think the elevated levels were
7 creating any problems. There were no water supply
8 wells downgradient.

9 Q. Okay. And can you describe a little bit
10 about the separate remediation program you talked
11 about?

12 A. Yeah, the Installation Restoration Program?

13 Q. Yes, sir.

14 A. Like I said earlier, it was similar to
15 EPA's Superfund Program. A lot of industries,
16 including military installations, had been improperly
17 disposing of hazardous waste for decades. A lot of
18 times they would just bury it and forget about it, and
19 we're starting to find ground water contamination
20 problems as a result.

21 Q. And what was your role in that program?

22 A. I took some of the analysis data and
23 reviewed that, but we were -- my particular base were
24 not finding any problems.

25 Q. So there was no remediation action taken as

1 a result of that?

2 A. No.

3 Q. So about how long were you an environmental
4 engineer in the Air Force?

5 A. Four years.

6 Q. And then after that, you went to Virginia
7 Tech, is that right?

8 A. Yes.

9 Q. And you got a master's in environmental
10 engineering in '91?

11 A. Yes.

12 Q. What did you do in 1991 upon your
13 graduation?

14 A. I went to work for a small consulting firm
15 called Wylie & Wilson in Lynchburg, Virginia.

16 Q. What did Wylie & Wilson do?

17 A. They were a consulting firm, and they did a
18 wide range of activities, one of them was environmental
19 engineering.

20 Q. What type of clients did Wylie & Wilson
21 have?

22 A. The main client we had was the Department
23 of the Navy. The main project I worked on was a study
24 of oily waste and waste oil that was generated at 11
25 Naval installations in Norfolk, Virginia.

1 Q. What specifically were you asked to
2 evaluate?

3 A. All of the sources of the waste streams and
4 what the Navy's current disposition was, and then to
5 make recommendations on how the Navy could improve cost
6 recovery from waste materials and also improve disposal
7 of waste materials.

8 Q. And as it relates to recommendations
9 related to cost recovery, what were your
10 recommendations?

11 A. We thought the Navy had some valuable
12 products, even though it had determined they were waste
13 products, something like waste oils did have some value
14 in the open market. There were companies that would
15 buy waste oil.

16 Q. So you recommended that the waste be sold?

17 A. Yeah, the Navy do a better job -- well,
18 first they had to do a better job of segregating. They
19 were mixing various types of waste that made them
20 unmarketable. By segregating waste, they would become
21 more marketable.

22 Q. Did you provide specific recommendations as
23 to whom the waste should be sold?

24 A. No.

25 Q. You also mentioned that you made

1 recommendations as to disposal, is that right?

2 A. Yes.

3 Q. What were those recommendations?

4 A. That the Navy consolidate its contracts for
5 disposal. Like I said, there were 11 Naval
6 installations and smaller units on each installation,
7 and they had a scattered plan. A lot of units had
8 their own separate contracts from waste disposal. We
9 recommended that they consolidate it..

10 Q. Did you make any recommendations as to how
11 they should be consolidated to which company?

12 A. No, we didn't make a recommendation on a
13 specific company.

14 Q. Okay. How long were you with Wylie &
15 Wilson?

16 A. About a year.

17 Q. Where did you go -- so that would take us
18 to about 1992?

19 A. End of '92 to 1993.

20 1993 I went to the Department of
21 Environment Health and Natural Resources in their
22 Division of Environmental Management.

23 Q. What did you do there?

24 A. I wrote storm water permits, wastewater
25 discharge permits and non-discharge permits, which are

1 sewer systems, pump stations and land application of
2 treated wastewater.

3 After that, in 1996, I became the
4 supervisor of the facilities evaluation unit, and that
5 was in the construction grants section. That section
6 is currently called Division of Water Infrastructure.
7 Our primary task was to do the long-range planning for
8 wastewater collection and treatment and disposal.

9 Q. And from the 1993 to 1996 time frame, where
10 you were with the Division of Environmental Management
11 writing permits, did you focus on any particular type
12 of industry?

13 A. I did a wide range of industries; municipal
14 wastewater plants, extraction and treatment of
15 contaminated ground water. I did permits for a few
16 small package plants for subdivisions.

17 Q. Did any of these industries involve
18 disposal of coal ash particularly?

19 A. No.

20 Q. And you discussed in 1996 moving to the
21 construction grants section and doing long-range
22 planning?

23 A. Yes.

24 Q. And can you tell me a little bit more about
25 that?

1 A. In order for local government to get a
2 grant or a loan, they first have to do a planning
3 document. For small projects, it was called a
4 preliminary engineering report. That covered cost
5 estimate, site plan and a description of the project.

6 Larger projects had to do what's called a
7 401 plan, and that was a federally administrative
8 program the state ran. That was a much more involved
9 planning document, looking at alternatives for waste
10 disposal, a long list of items to consider.

11 Q. Okay. And you started that position in
12 1996. Does that take us up to the year 2000, when I
13 understand you joined the public staff?

14 A. Yes.

15 Q. Okay. You are a licensed engineer in North
16 Carolina, is that right?

17 A. Yes.

18 Q. And when did you get that license?

19 A. Officially it was in January of 1995.

20 Q. And what was the procedure for obtaining
21 that license?

22 A. I had to take an eight-hour exam, solve
23 engineering problems and answer engineering questions.

24 Q. Are there any continuing education
25 requirements?

1 A. Yes, I have to get 15 hours, and they call
2 them professional development hours, every year.

3 Q. Are there any requirements in terms of
4 subject matter?

5 A. General engineering field. That's about
6 the only requirement.

7 Q. Are you licensed as an engineer in any
8 other state?

9 A. No.

10 Q. Do you have any other degrees or
11 certifications that we haven't talked about?

12 A. Before becoming a professional engineer, I
13 took the engineer-in-training exam, that was in 1985.

14 Q. Anything else?

15 A. That's it.

16 Q. Okay. Have you ever consulted for, worked
17 at a facility that has a coal ash impoundment?

18 A. No.

19 Q. And before this case, meaning the rate
20 proceedings we're talking about today, have you had
21 experience with coal ash impoundments?

22 A. No.

23 Q. And I understand now you're an engineer
24 with the electric division, the public staff, is that
25 right?

1 A. Yes.

2 Q. Can you describe generally your job
3 responsibilities?

4 A. I review issues that come across --
5 environmental issues, like coal ash in this case, the
6 clean power plan, help manage the renewable energy
7 portfolio standard management, help review customer
8 complaints and get those resolved, review depreciation
9 expenses and generate cases.

10 Q. So as it relates specifically to utility
11 cost recovery, what has been your role with the public
12 staff.

13 A. Reviewing depreciation costs. Reviewing
14 contracts for construction or maintenance of power
15 plants.

16 Q. When did you --

17 A. I'm sorry, I'm done.

18 Q. When did you begin working in a role that
19 involved looking at materials related to utility cost
20 recovery?

21 A. For electric utilities?

22 Q. Let's start there, yes, sir.

23 A. When I first got to the Electric Division,
24 it was 2007. Electric Division was working on a Duke
25 Energy Carolinas rate case, and I started right away

1 working on that.

2 Q. What was your role in that case?

3 A. In that case, I looked at cost of service
4 and rate design.

5 Q. Can you explain a little more particularly
6 what you were doing?

7 A. Look at all of the utilities costs that it
8 claims, and try best how to figure out which customer
9 classes were responsible for those costs; residential
10 class, general class, industrial class. I think hourly
11 pricing was also separated as a customer class and a
12 couple of others.

13 Q. Did you have any role in determining the
14 reasonableness or prudence of the costs themselves?

15 A. Not for the first two years.

16 For 2007, I worked on two Duke Energy
17 Carolinas' rate cases, and that's where I did those
18 tasks I just told you.

19 There was a later case, I can't remember
20 whatever the next rate case was, it might have even
21 been a Dominion rate case, I started picking up review
22 of depreciation expenses. Also started reviewing
23 contracts for construction processes and maintenance
24 processes of power plants.

25 Q. Have you provided testimony on behalf of

1 the public staff before in a rate recovery case?

2 A. Yes.

3 Q. How many times?

4 A. Several. I don't know the exact number.

5 Q. When was the most recent?

6 A. Previous case was a Dominion rate case a
7 year ago. I believe, I can't remember if that case was
8 settled. A lot of times I will have testimony ready
9 and the case gets settled.

10 Q. What was the scope of your testimony in
11 that case?

12 A. Review of coal ash costs that Dominion had,
13 and review of Dominion's depreciation expenses.

14 Q. And just in general, what was the substance
15 of your recommendations in that case?

16 A. I had developed recommendations on the
17 decommissioning of some of the Dominion's power plants.

18 One of the recommendations I was working
19 on, Dominion, I believe, wanted to cover all the
20 decommissioning costs. They were five years, and I was
21 wanting to push for ten years, and that's all I can
22 remember.

23 Q. Do you recall whether in that case, you
24 recommended the wholesale exclusion of any costs from
25 recovery?

1 A. No.

2 Q. You don't recall, or you did not?

3 A. I believe I did not.

4 Q. Okay. We've gone through, I think, your
5 professional history. Are there any areas that we
6 haven't gone through that you worked on as a
7 professional engineer?

8 A. When I first joined the public staff, my
9 first five years I was in the Water Division, and then
10 I went two and a half years in the public staff's
11 Communication Division, and after that is when I went
12 to the Electric Division.

13 Q. What did you do in the Water Division?

14 A. Reviewed general rate cases, customer
15 complaints, provision of emergency operators and worked
16 on development of a program where apartment complexes
17 can resell water..

18 Q. Okay. So as it relates to this matter,
19 what areas of expertise are you relying on to offer
20 opinions in this case?

21 A. All the experience I've gathered over the
22 past 30-some years.

23 Q. So the areas we've just discussed?

24 A. Yes. Yes.

25 Q. Who asked you to prepare testimony for this

1 case?

2 A. My supervisor, James McLawhorn.

3 Q. When was that?

4 A. Very shortly after the rate case was filed,
5 back in June.

6 Q. At that time, what were your instructions?

7 A. To review coal ash costs, depreciation
8 costs and other plant additions by Duke Energy
9 Progress.

10 Q. Did those instructions change at all in the
11 intervening months?

12 A. I took a lesser role in reviewing
13 depreciation expenses once the public staff hired a
14 depreciation consultant.

15 Q. So as it evolved, what did you understand
16 your role to be as you prepared your testimony?

17 A. When I shortly realized it was Duke's
18 request to place the sale of byproducts, coal ash
19 byproducts in the Feel(sic) case. That's another item
20 I took.

21 Q. And that came later?

22 A. A little bit later, but not too much later.

23 Q. When you started looking at these issues,
24 did anyone at the public staff express to you their
25 opinion on these issues?

1 A. Oh, yes.

2 Q. Who did you speak with?

3 A. Let's see, I spoke with Dianna Downey,
4 David Drooz and Layla Cummings in the legal division.
5 I spoke with James McLawhorn and Bevin Lawrence in the
6 Electric Division, and I spoke with Mike Maness and
7 Darlene Peaden in the accounting division.

8 Q. What did you talk about with Mr. McLawhorn?
9 Am I saying that correctly?

10 A. Yes. Just in general what items I was
11 finding that concerned me, and the Electric Division
12 meet as a team, and we would discuss how everybody's
13 review was proceeding in the case.

14 Q. What did you tell Mr. McLawhorn about what
15 concerns you?

16 A. I was concerned about the costs of the Mayo
17 power plant's zero liquid discharge system. I believed
18 that we had a strong case to remove some coal ash
19 byproduct sales from the fuel case. Also removal of
20 some of the coal ash management costs.

21 Q. As it relates to the removal of the coal
22 ash management costs, what were the discussions
23 surrounding those costs?

24 A. Whether Duke Energy could have complied
25 with the Coal Ash Management Act in a more

1 cost-effective manager.

2 Also if Duke Energy Progress was trying to
3 include costs that should not have been passed on to
4 ratepayers.

5 Q. Okay, we'll come back to those issues.

6 And in terms of how you arrived at the
7 opinions expressed in your testimony, you discussed
8 talking with others on the public staff. What about
9 review of documents? What did you review?

10 A. The responses to the debtor requests that
11 was at Duke Energy Progress. All the testimony of Duke
12 Energy Progress' witness and their exhibits. I
13 communicated with some members of the Department of
14 Environmental Quality and got some information from
15 them.

16 Q. Were there any documents you wanted to
17 review but didn't have a chance to?

18 A. Coal ash data request number 26, in which I
19 had chosen 45 items from a list of about 27,000 items
20 that were in the E1 item 10 NC1800, and that wasn't
21 necessarily a document I wanted Duke Energy Progress'
22 description. I just don't think I got a clear
23 description.

24 Q. And why do you not think the description
25 was clear?

1 A. I wanted a written description, just an
2 explanation of the costs. I feel like I received
3 spreadsheets and accounting documents but not the
4 written explanation.

5 Q. How would the written explanation have
6 aided your analysis?

7 A. It would have been very clear, more clear
8 than just numbers on spreadsheets. Just a verbal
9 description would have helped.

10 MS. DINSMORE: Could we go off the
11 record for just a minute?.

12 THE VIDEOGRAPHER: The time is 9:28.
13 We're going off the record.

14 (Recess.)

15 THE VIDEOGRAPHER: The time is 9:32
16 a.m. We're back on the record.

17 BY MS. DINSMORE:

18 Q. Mr. Lucas, before we took a break, we
19 discussed some of the conversations you had with other
20 members of the public staff. Did you have any
21 conversations about this matter with individuals
22 outside the public staff?

23 A. Yes.

24 Q. Who were those people?

25 A. I talked to several people at the

1 Department of Environmental Quality; Jeff Poupart who
2 is the supervisor for surface water discharges; one of
3 his employees, John Hennessey, who is in charge of
4 NPDES enforcement and someone on his staff; Brianna
5 Young, who generates and reviews the discharge
6 monitoring violation reports. I talked to Debra Watts
7 in the Ground Water Section. I talked to Sergei
8 Chernikov, who is the NPDES permit supervisor.

9 Q. With regards to your discussion with
10 Mr. Poupart, what did you discuss with him?

11 A. Talked about DEQ's plans for how they would
12 permit seeps from coal ash basins.

13 Q. And what did you learn from Mr. Poupart?

14 A. DEQ is still in the process of determining
15 how it will put seeps into NPDES permits, and if
16 necessary, may enter special orders by consent, which
17 would require Duke Energy Progress to eliminate seeps.

18 Q. Did you have any discussion with
19 Mr. Poupart about when DEQ first learned about seeps at
20 any DEP sites?

21 A. Not with him.

22 Q. Did you discuss with anybody at DEQ when
23 they first learned about seeps at any DEP sites?

24 A. No.

25 Q. So when I asked you about Mr. Poupart, you

1 qualified and said not with him. Was there anybody you
2 discussed that issue with?

3 A. No.

4 Q. Do you know when DEQ first learned of any
5 seeps at any DEP sites?

6 A. Let's see, there was a court case at the
7 Asheville plant in 2013. Also the same court cases
8 covered Cape Fear. And to clarify this, I'm going on
9 Lucas Exhibit number 8.

10 Q. Thank you.

11 A. Sure. It involved the H.F. Lee plant, the
12 Mayo plant, the Roxboro plant, the Sutton plant and the
13 Weatherspoon plant, and these cases start in 2013. So
14 at least by 2013 they knew about seeps.

15 Q. Do you know if 2013 represents the first
16 time DEQ was aware of seeps at any of the DEP plants?

17 A. I don't know.

18 Q. Did you discuss with Mr. Poupart anything
19 other than DEQ's planned treatment of seeps?

20 A. Let me check my notes. No -- no, that's
21 all I did.

22 Q. Okay. What about with Mr. Hennessey? What
23 did you discuss with Mr. Hennessey?

24 A. Also discussed DEQ's plan for seeps, and he
25 referred me to Mr. Poupart. Also discussed with him

1 getting copies of the discharge monitoring violation
2 reports.

3 Q. Did Mr. Hennessey provide you with copies
4 of those reports?

5 A. One of his staff members did, Brianna
6 Young.

7 Q. And was there -- did you place any time
8 frame on your request for those reports in terms of how
9 far back you wanted them?

10 A. I wanted about ten years of data. I think
11 they gave me more than ten years, but when I developed
12 my Lucas Exhibit number 5, I only went back ten years.

13 Q. And Ms. Young is the one who provided those
14 to you?

15 A. Yes.

16 Q. Did she provide you any other substantive
17 information?

18 A. No.

19 Q. Did you have conversations with Ms. Young?

20 A. Just to get the reports. It was phone
21 conversations and by email.

22 Q. What about your conversations with
23 Ms. Watts? What did you discuss with Ms. Watts?

24 A. The 2L ground water rules. The Ground
25 Water Section's efforts related to the Coal Ash

1 Management Act. That was generally the subject matter.

2 Q. What, if anything, did you learn from
3 Ms. Watts about the 2L ground water rules?

4 A. Whenever I saw them, I got it -- my Lucas
5 Exhibit number 2, we went through some of the 2L rules
6 and what Duke Energy Progress was required to do to
7 comply. And we talked about the timetables that CAMA
8 set, the Coal Ash Management Act set for ground water
9 monitoring for Duke Energy Progress.

10 Q. Did you have any discussion with Ms. Watts
11 about the distinction between an exceedance and a
12 violation under the ground water rules?

13 A. Yes.

14 Q. What did you discuss with her about that
15 distinction?

16 A. I can't remember exactly how we
17 distinguished those two items.

18 Q. Did you, yourself, ever come to a
19 conclusion regarding the distinction under the 2L rules
20 of an exceedance versus a violation?

21 A. Yes, and I'm quoting from my testimony.

22 Q. Why don't we -- before you quote from it,
23 just for the record, I'll introduce as Exhibit 1 a copy
24 of your testimony. This does not contain the exhibits,
25 but just so we have it with the transcript.

1 A. Okay.

2 (The document referred to was marked
3 Lucas Exhibit Number 1 for
4 identification.)

5 Q. Please go ahead.

6 A. This is from page 44 of my testimony,
7 starting on line 14.

8 Q. Okay.

9 A. Exceedances of 2L standards in IMACS or
10 exceedances of the PBTVs, if they are higher than the
11 2L standards or IMACS, at or beyond the compliance
12 boundary, represent a probable failure to meet
13 environmental standards, a violation, that would be --
14 that would need to be corrected to achieve compliance
15 with 15A NCAC 2L.0106.

16 Q. Okay. So did you draw any distinction
17 between an exceedance and a violation?

18 A. Ground water quality can exceed the
19 standards. That's not necessarily a violation. A
20 violation occurs if there's a responsible party for
21 exceeding the standards beyond the compliance boundary.

22 Q. Okay. And so you understand then that what
23 the 2L rules require is that upon finding an
24 exceedance, corrective action is required, is that
25 right?

1 A. Yes. The responsible party creates an
2 exceedance beyond the compliance boundary. There is a
3 set of requirements that that entity must do.

4 Q. Right. And those include controlling the
5 source of the pollution, assessing the extent of the
6 contamination and identifying, implementing a remedial
7 strategy, is that right?

8 A. I can read you a quote from 2L.0106,
9 Section E.

10 Q. Sure.

11 A. It lays out the requirements, mostly what
12 you just said: Within 24 hours of discovery, notify
13 the Department of Environmental Quality, prepare a
14 response, submit a report to the secretary of DEQ,
15 implement and approve correction action plan.

16 Q. Yes, sir, that's upon the discovery of an
17 exceedance, correct?

18 A. Beyond the compliance boundary, yes..

19 Q. And in terms of any fines or penalties or
20 punitive measures, those don't come into play until --
21 unless and until the property owner doesn't implement
22 the corrective action, is that right?

23 A. That's up to DEQ to determine the extent of
24 the exceedance and whether or not it's going to take
25 any enforcement action.

1 Q. Upon giving the owner the opportunity for
2 corrective action, is that right?

3 A. I don't know if DEQ has to give the
4 responsible party time to correct the action.

5 Q. That wasn't part of your discussions with
6 Debra Watts?

7 A.. No, but I don't see that in the 2L rule,
8 that there's anything that prevents DEQ from taking any
9 kind of enforcement action.

10 Q. You cited in your testimony the settlement
11 of the Sutton civil penalty, is that right?

12 A. Yes.

13 Q. And wasn't that part of what's set forth in
14 the settlement that DEQ has to allow the opportunity
15 for corrective action before implementing a penalty?

16 A. Now you're talking about the case that was
17 brought about by DEQ?

18 Q. Yes, sir.

19 A. Okay. And I'm quoting from page 53, line
20 12 of my testimony: DEQ agreed to dismiss its ground
21 water exceedance claims against all Duke Energy coal
22 plants in North Carolina and agreed not to file any
23 notices, claims, enforcement actions or penalties
24 against Duke Energy for ground water conditions, past
25 or future, as long as Duke Energy was complying with

1 CAMA.

2 Q. Yes, sir. And a little bit above that in
3 your testimony, you actually quote from the agreement,
4 which sets forth DEQ's policy regarding enforcement, is
5 that correct?

6 A. Can you give me the page and line number?

7 Q. Also on page 53. Starting on page 52 and
8 53, quoting from the settlement.

9 A. Sorry, which particular line?

10 Q. Sure. Start on one through four.

11 A. On page 53?

12 Q. Yes, sir.

13 A. Okay. I can read that into the record.

14 The 2011 policy for compliance evaluation
15 states that as long as the permittee is cooperative
16 with the division in taking necessary steps of bringing
17 the facility into compliance, a notice of violation may
18 not be necessary.

19 I want to point out though this says a
20 notice of violation may not be necessary. That
21 paragraph doesn't preclude DEQ from taking enforcement
22 action as it sees fit, whether or not Duke Energy
23 Carolina -- excuse me, Duke Energy Progress is taking
24 necessary steps.

25 Q. Did you discuss with DEQ whether at any

1 stage, DEP failed to cooperate with regulators in terms
2 of corrective action?

3 A. No, they never said that Duke Energy
4 Progress was not cooperating.

5 Q. Did you ask?

6 A. No. I didn't ask specifically.

7 Q. Okay. You said you also talked with
8 Mr. Chernikov, is that right?

9 A. Yes.

10 Q. And what did you discuss with him?

11 A. The way NPDES permits are reviewed and
12 issued.

13 Q. What did you learn from Mr. Chernikov
14 that's relevant to your testimony here?

15 A. I discussed with him the possibility of the
16 Mayo power plant routing its treated wastewater from
17 its flue-gas desulfurization process into a nearby
18 stream. Also the possibility of rerouteing that
19 wastewater to the Town of Roxboro Wastewater Treatment
20 Plant. Also talked with him about permitting of seeps
21 from coal ash basins.

22 Q. In terms of your discussion regarding the
23 permitting of seeps, what was that discussion?

24 A. He told me that seeps are not currently
25 permitted.

1 Q. Did you learn from him whether seeps had
2 ever been permitted?

3 A. He said there are discharges from coal ash
4 basins that are permitted, they are called outfalls,
5 and they receive a number NPDES permit. He said there
6 are seeps that were definitely unpermitted and were
7 going on. And he agreed with Mr. Poupart that
8 evaluation of seeps was still being unreviewed by the
9 Department of Environmental Quality.

10 Q. But, again, you didn't learn anything from
11 DEQ about when DEQ first became aware of these seeps?

12 A. No, that's just from my review of the court
13 cases in 2013.

14 Q. And I believe you testified that you, based
15 on the review of the court cases, you believe that they
16 were aware of these by 2013, but you didn't know how
17 long before that?

18 A. That's correct.

19 Q. Okay. Is there any other research that you
20 did in the course of preparing your testimony that we
21 have not discussed?

22 A. I mean, I did a lot of research. I'm going
23 to the responses to the debtor requests.

24 I discussed with outside consultants the
25 treatment of flue-gas desulfurization wastewater.

1 Q. Who were the outside consultants?

2 A. I talked with a Dow Chemical. I talked
3 with a couple of other companies, and that was by
4 email. I could possibly make that a late-filed
5 exhibit, if necessary. I don't remember their names
6 offhand.

7 Q. Okay. Anything else that comes to mind
8 that you did in the course of preparing your testimony?

9 A. No.

10 Q. Was there any analysis that you would have
11 liked to do but were not able to do?

12 A. I would have liked to analyze further the
13 actions that the Department of Environmental Quality
14 would have taken in the absence of CAMA, but that's a
15 very difficult task.

16 CAMA was promulgated in 2014. I know there
17 were lawsuits pending at the time. It would be
18 virtually impossible to see what actions or how those
19 court proceedings would have occurred without CAMA.

20 Q. How would it have helped you, for purposes
21 of your opinions, to understand how DEQ may have
22 proceeded absent CAMA?

23 A. It would have helped me determine how costs
24 for coal ash management could be spread between the
25 shareholders and the ratepayers.

1 Q. And is that something you think with enough
2 time you could have determined, or do you not think
3 that was possible?

4 A. I really can't fully answer that question.
5 It's hard to tell what else I would have discovered,
6 given more time.

7 Q. What analysis would that entail?

8 A. Further discussion with DEQ's engineers and
9 their counsel, how those cases are proceeding and where
10 they perceive the cases are headed.

11 Q. But you did not have those discussions with
12 anybody at DEQ?

13 A. No.

14 Q. Do you have any plans to have those
15 discussions or do that analysis?

16 A. Not at this time.

17 Q. Did you visit any of DEP's impoundments in
18 preparing your testimony?

19 A. Yes, in this case in particular, I visited
20 the impoundment at the Mayo power plant.

21 Q. And why did you do that?

22 A. For several reasons; first, we had some new
23 people on the public staff, just become generally aware
24 of how the power plant was built and operated; to take
25 a look at the Mayo zero liquid discharge system; see

1 the ash basin of the outfall and also see the landfill
2 or the Mayo power plant and some of its coal ash.

3 Q. When was this visit?

4 A. It was in July of this year.

5 Q. And how did this visit aid you in preparing
6 your testimony here?

7 A. I saw the construction of the Mayo ZLD
8 system. I saw the construction of the impoundment. I
9 saw the pumping system, how it gathers seep water and
10 puts it back into the ash basin. I saw locations of
11 outfall from the ash basin and other outfalls from
12 wastewater operations that go into the basin. I saw
13 DEP's trucking and landfilling of its coal ash.

14 Q. At the visit, did DEP give you access to
15 see everything you wanted to see?

16 A. Yes, they did.

17 Q. Did you meet with any DEP employees in
18 preparing your testimony?

19 A. Yes, I met with a plant operator.

20 Q. Was that at Mayo?

21 A. That was at Mayo. I met Joe Miller, who is
22 in charge of fossil and hydro operations. That was
23 Shannon Langley, who does environmental compliance with
24 DEQ. I met some other staff members, but I can't
25 remember their names.

1 Q. And we discussed the meeting at Mayo that
2 was July of this year. And what did you discuss, if
3 anything, with the plant operator?

4 A. The plant operator, I discussed the general
5 operations of combustion of coal and making
6 electricity.

7 Q. Okay. And you mentioned Joe Miller?

8 A. Yes.

9 Q. Okay. What did you discuss with Joe
10 Miller?

11 A. I discussed with him how the plant is
12 dispatched.

13 Q. Again, specifically related to Mayo?

14 A. Just to Mayo, yes.

15 Q. And then Shannon Langley?

16 A. He along with some other staff members from
17 DEP showed us the operation of the Mayo ZLD.

18 Q. Okay. So did you meet with any DEP
19 employees regarding any plants other than Mayo?

20 A. No.

21 Q. Is there any reason why meeting with DEP
22 employees on plants other than Mayo wasn't helpful to
23 you?

24 A. Well, I was able to gather other
25 information I needed from data requests.

1 Q. In preparing your testimony, did anybody
2 help you actually write your testimony?

3 A. Yes.

4 Q. Who helped you?

5 A. Some folks from the public staff's legal
6 division, that was Dianna Downey, David Drooz and Layla
7 Cummings. Also from the public staff's Water Division
8 was Charles Junis, and I believe that's all the people
9 that helped me in actually writing it.

10 Q. Who sat down and wrote the first draft?

11 A. It was in various pieces. All the people I
12 just mentioned wrote pieces of it. There was no one
13 first draft. It was various sections were written.

14 Q. In terms of earlier drafts, was there any
15 opinions contained in any of the earlier drafts that
16 were removed from the final draft?

17 A. Oh, we removed sections, yes.

18 Q. Can you describe those?

19 A. We attached -- we were planning to attach
20 some of the responses to data requests that we removed.
21 Other sections sometimes we don't believe are legally
22 defensible. The draft phase is sort of like
23 brainstorming. We initially write a pretty large
24 draft, and we try to determine what's legal,
25 defensible, where we can provide evidence to back up

1 our claims. That's about all I have to say on that.

2 Q. Can you recall any of those portions that
3 were removed?

4 A. Yes. I had a portion that talked about
5 some of the personnel changes at Duke Energy regarding
6 construction of the Mayo ZLD. I had planned an
7 exhibit, some of the letters between Duke Energy and
8 its contractors on the Mayo ZLD and decided not to use
9 that as an exhibit, ZLD and it stands for zero liquid
10 discharge.

11 Q. Anything else?

12 A. I'm thinking more about the coal ash
13 environmental portion. I can't recall any specifics,
14 what we took out in my discussion of coal ash
15 management environmental violations.

16 Q. Did any of the portions removed during the
17 drafting process impact your ultimate opinions in this
18 matter?

19 A. No. The final draft is my ultimate
20 opinion.

21 Q. Did any of the portions removed change any
22 of the recommendations, as compared to prior drafts?

23 A. No.

24 Q. And before we look at those opinions and
25 recommendations, you had mentioned that part of your

1 discussions with Mr. Chernikov involved the permitting
2 of seeps, is that right?

3 A. Yes.

4 Q. Okay. And did you discuss with him DEP's
5 permit requests as they relate to seeps?

6 A. No. What I discussed with him was DEP's
7 review of those seeps, and what DEQ plans to do as far
8 as permitting those seeps.

9 He and along with Mr. Poupart, told me that
10 DEQ is still reviewing seeps and has not made a final
11 determination. It may seek to have some of those seeps
12 as permitted outfalls, or it could attempt to enter
13 into special orders by consent to get seeps corrected.

14 Q. In the course of your discussions, did you
15 give an understanding that DEP has actually submitted
16 permit requests?

17 A. Yeah, they told me -- permit renewals is
18 what they called them. Yeah, DEP had submitted the
19 permit renewals. Some of those permits had gone
20 through hearing. So those permits appeared to be in
21 the later stages of decision making.

22 Q. Do you know how long ago DEP submitted
23 those permit requests or permit renewals?

24 A. I might have that information, give me a
25 moment. I don't have that information.

1 Q. Okay. But you do know that DEQ has not
2 acted on those permits yet?

3 A. It has not made a final decision. It has
4 held public hearings on some of those permits.

5 Q. Okay. So if you could just give me a broad
6 view of what are your recommendations to the utilities
7 commission in this matter?

8 A. Okay. My recommendations, I say that --
9 I'm looking at page 62.

10 Q. That's page 62 of your testimony?

11 A. Page 62 of my testimony, let's start with
12 line 6, and I'll read -- I'll start reading from there:
13 Certain costs are so clearly due to company failure to
14 comply with environmental regulations that none of
15 these costs should be assigned to ratepayers. However,
16 for most of the coal ash-related costs in the DEP rate
17 request, there is some degree of DEP culpability for
18 those costs due to noncompliance with environmental
19 regulations, but it may fall short of imprudence.

20 In this situation, an equitable sharing of
21 those costs is reasonable and appropriate, as discussed
22 by public staff witness Maness.

23 Q. Thank you. Would you say that then page
24 62, line 6 through 13, summarize your recommendations
25 to the utilities commission?

1 A. Yes.

2 Q. Are there any other recommendations you're
3 making in this matter?

4 A. When I start on line six, I talk about
5 certain costs. Specifically, I recommended removal of
6 \$6.6 million of costs for ground water extraction and
7 treatment. Also recommend removal of \$88,000 of
8 litigation costs.

9 Q. And those are the certain costs you
10 reference on line 6 of page 62?

11 A. Yes.

12 Q. We'll come back to those in just a minute.
13 So that's the certain costs on line 6, and
14 then it looks like on line 8, you start with what it
15 looks to be like a second recommendation where it
16 starts however, is that right?

17 A. Yes, that's correct.

18 Q. Okay. And it says: For most of the coal
19 ash-related costs, there's some degree of DEP
20 culpability for these costs, is that right?

21 A. That's correct.

22 Q. And have you quantified those costs?

23 A. I have not, but other witnesses may have.
24 Like I said, there's public staff witness Maness and
25 also public staff witness Darlene Peaden who go into

1 more detail about cost exclusion.

2 Q. Have you reviewed the testimony of those
3 witnesses?

4 A. Yes.

5 Q. Okay. And so those costs, as set forth by
6 those witnesses; you understand those costs -- those
7 witnesses have set forth those costs? That's your
8 understanding?

9 A. Yes.

10 Q. Okay. And you have not personally analyzed
11 what those costs are?

12 A. We took a look at a lot of costs. I'll
13 give an example.

14 In DEP's E1 item 10 NC1800, I reviewed a
15 lot of those costs along with public staff witness
16 Maness.

17 Q. Okay. Anything else that you reviewed?

18 A. I reviewed the cost of the Mayo zero liquid
19 discharge system.

20 Also worked with public staff witness
21 Darlene Peaden at O&M expenses, took a look at any coal
22 ash costs that might have been in operations and
23 maintenance.

24 Q. And the last sentence, page 62, lines 11
25 through 13, it states: In this situation, an equitable

1 sharing of those costs is reasonable and appropriate,
2 as discussed by public staff witness Maness, is that
3 right?

4 A. Yes.

5 Q. So the opinion that an equitable sharing of
6 those costs is reasonable and appropriate, is that your
7 opinion?

8 A. Yes.

9 Q. How did you arrive at that opinion?

10 A. I looked at some of the litigation that's
11 in my Lucas Exhibit number 8. I looked at the
12 requirements of the Coal Ash Management Act. I looked
13 at NPDES violations, ground water exceedances, dam
14 safety problems, and those are given in Lucas Exhibits
15 5, 6 and 7. And I can mention the costs in the NC1800,
16 and we submitted data requests and asked DEP to explain
17 its reason for including costs in the case. I reviewed
18 those responses to data requests.

19 Q. Yes, sir. In terms of the portion of the
20 opinion regarding equitable sharing, how did you arrive
21 at that conclusion?

22 A. The equitable sharing?.

23 Q. Yes, sir.

24 A. Like I said earlier, there was litigation
25 in progress when CAMA became enacted. Since CAMA being

1 state law, DEP had to comply with state law.

2 So since those cases were in progress, we
3 can't determine exactly to the extent that DEP was at
4 fault.

5 So balancing the requirements in CAMA with
6 litigation that was in progress, that's how we came up
7 with that word equitable -- that phrase equitable.
8 sharing.

9 Q. Okay. So as I understand it, you came up
10 with the idea of equitable sharing, which, as I
11 understand from your testimony, is a 50/50 cost sharing
12 proposal, is that right?

13 A. That's not my testimony. That's a public
14 staff witness Maness' testimony. He came up with that
15 ratio.

16 Q. Okay, but the equitable sharing is part of
17 your opinion?

18 A. Yes, where I came up with the idea that
19 some of these costs should be shared between
20 shareholders and ratepayers.

21 Q. So do you have an opinion on the ratio
22 that's appropriate?

23 A. No.

24 Q. That was not part of your testimony?

25 A. No.

1 Q. And sitting here today, you do not have an
2 opinion on a proper ratio of cost sharing?

3 A. No.

4 Q. But you did say that based upon the stage
5 of litigation when CAMA was enacted, you were unable to
6 determine fault as to any of the allegations made in
7 that litigation, is that right?

8 A. I determined there was some fault by DEP.
9 I couldn't determine the exact extent of the fault.

10 Q. How did you determine there was fault?

11 A. The millions of dollars of settlement costs
12 that DEP paid out. The numerous NPDES violations with
13 ground water exceedances and the dam safety problems.

14 Q. Okay. Let's take those one by one.

15 A. Okay.

16 Q. You determined there was some fault, that's
17 your word, on behalf of DEP because of settlement
18 payments, is that right?

19 A. That's correct.

20 Q. And why do you believe that the fact that a
21 company pays a settlement means the company is at
22 fault?

23 A. I don't believe DEP would have paid
24 millions of dollars of settlement costs if it didn't
25 believe it had some degree of fault.

1 Q. Have you ever worked at a private company?

2 A. I worked for a consulting firm, yes.

3 Q. Have you ever worked -- have you ever been
4 involved in litigation at a large public company?

5 A. You mean, as an employee of a large
6 company?

7 Q. Yes, sir.

8 A. No, I have not.

9 Q. Have you ever been involved in analyzing
10 risks and benefits of litigation versus settlement for
11 a private company?

12 A. Not until this case.

13 Q. And in this case, you were involved in
14 weighing risks and benefits of settlement?

15 A. Yes.

16 Q. Okay. How so?

17 A. Reviewing the settlement -- the court
18 orders in these cases, reviewing the evidence that the
19 plaintiffs had, and just the dollar amount of the
20 settlements.

21 Q. Okay. You were not then privy to any of
22 Duke Energy Progress' decision making as it relates to
23 entering into those settlements?

24 A. No, I was not.

25 Q. And you're not aware of the analysis that

1 they conducted, is that right?

2 A. No.

3 Q. And you're not aware as to what Duke Energy
4 Progress calculated would be the costs of litigating
5 the cases, even if they got a favorable outcome, is
6 that right?

7 A. That's correct.

8 Q. Okay. So your conclusion though that the
9 fact that they paid money in settlement allows you to
10 conclude that DEP must have had some fault?

11 A. That and the NPDES violations of the ground
12 water exceedances.

13 Q. Okay, we'll move on to there.

14 I think we did discuss a little bit about
15 exceedances versus violations. Do you remember that?

16 A. Yes.

17 Q. Okay. So when you discuss here how ground
18 water violations led you to believe that DEP shares
19 some fault, what are you referring to?

20 A. I'm referring to my Lucas Exhibit number 6
21 and 7.

22 Q. Okay. And did you come to any conclusion
23 as to the cost to DEP resulting specifically from what
24 you call ground water violations?

25 A. Well, there's a cost I came up with the

1 extraction and treatment of ground water that I
2 recommended be removed at \$6.6 million.

3 Q. Yes, sir. Anything else? Any other costs
4 other than the \$6.6 million that you attribute to the
5 what you call ground water violations?

6 A. There's costs for litigation, costs for the
7 settlements.

8 Q. Do you know --

9 A. I'm sorry, I believe DEP was culpable of
10 creating the problems that led to those costs.

11 Q. Meaning the costs of the extraction?

12 A. Extraction and treatment of ground water.

13 Q. You mentioned costs of litigation and
14 settlements. Do you know whether DEP is seeking to
15 recover those costs in this matter?

16 A. A lot of the settlements it's not. There
17 is that one \$88,000 recommendation that I believe
18 should not be passed on to ratepayers.

19 Q. Yes, sir. So as I understand it, with
20 regard to ground water violations, you have two
21 specific recommendations; the \$6.6 million be excluded?

22 A. Yes.

23 Q. The \$88,000 be excluded?

24 A. Yes.

25 Q. And in addition to that, there be cost

1 sharing?

2 A. Yes.

3 Q. But aside from the 6.6 and the \$88,000,
4 you, yourself, don't have any opinion on whether there
5 are any increased costs because of the supposed
6 violations that DEP is seeking to recover in this
7 matter?

8 A. I believe DEP has a responsibility for a
9 lot of other costs. I believe DEP was in trouble
10 because of the NPDES violations, the ground water
11 exceedances. There were similar cases against DEP. I
12 believe there was definitely a lot of responsibility on
13 DEP's part for those costs.

14 Q. Okay. What costs exactly were those?

15 A. Some of those costs were in the E1 item 10
16 1800. There were costs for settlement that DEP has not
17 included in this case.

18 Q. I'm sorry, that they have not included?

19 A. They have not, that's correct. They have
20 not included in this case. And since CAMA was enacted
21 and satisfied some of their requirements that DEQ
22 wanted, I believe there was some other costs that
23 should be shared between the shareholders and the
24 ratepayers.

25 Q. And why is that? I didn't quite understand

1 your last sentence.

2 A. Okay. Well, it was a long answer.

3 The first part of my answer I talk about
4 DEP was in trouble. It had several court cases going
5 on and documented violations and exceedances. CAMA cut
6 some of that short. Also let me refer to another
7 exhibit. First, let me -- I want to go to my
8 testimony.

9 Q. Yes, sir.

10 A. Page 42 and -- page 42, beginning line 20,
11 that presentation about the federal criminal case. And
12 in that case, there was a court-appointed monitor, and
13 DEP had to provide final audit reports that were done
14 by a consultant. And those final audit reports show up
15 on my Lucas Exhibit number 7. So they show ground
16 water constituents that either exceeded the 2L or the
17 IMAC.

18 Also I'd like to refer to my Exhibit number
19 9, and this is also -- these are excerpts from the
20 joint factual statement in the criminal case, and this
21 is a joint factual statement that DEP signed onto in, I
22 believe there were 200 distinct seeps identified, and
23 that's in paragraph 133. Later in that joint factual
24 statement that DEP signed to it, this is paragraph 191,
25 and it refers to the Flemington public utility, which

1 is close by the Sutton plant, and it had contaminated
2 ground water that was entering drinking water wells.

3 I will read that paragraph 191: In June
4 and July of 2013, Flemington's public utility concluded
5 that boron from Sutton's ash ponds was entering its
6 water supply. Tests of water from various wells at and
7 near Sutton from that period showed elevated levels of
8 boron, iron, manganese, thallium, selenium, cadmium and
9 total dissolved solids.

10 So with all the information I just said, I
11 believe that's one reason that led Duke to settle for
12 millions of dollars in some of these cases listed here.

13 Q. Okay. So going through those three items
14 that you identified, you first discuss the federal
15 criminal case, and you talked about the costs of the
16 consulting report, is that right?

17 A. I just talk about the results of the
18 consulting report, not the costs.

19 Q. Okay. So are there costs you identified in
20 connection with that item?

21 A. No, I don't define specific costs.

22 Q. Okay. And then in terms of you noted the
23 seeps, the 200 distinct seeps, is that right?

24 A. Yes.

25 Q. Do you identify any costs that should be

1 excluded as they relate to those seeps?

2 A. Not specifically. But going back to my
3 equitable sharing statement that we discussed earlier,
4 I believe that's how some costs could be excluded from
5 Duke Energy Progress' rate request.

6 Q. Okay. But you don't have an opinion on the
7 proper ratio?

8 A. No.

9 Q. Okay. And then you mentioned the
10 Flemington community?

11 A. Yes.

12 Q. And, of course, Duke donated money to run a
13 water line to Flemington, you understand that?

14 A. Yes.

15 Q. And that that -- those costs are not part
16 of this rate recovery case, is that right?

17 A. As far as we know. We were not able to
18 find those costs in Duke Energy Progress' rate request.

19 Q. Do you know when the donation was made?

20 A. I don't have the date.

21 MR. DROOZ: When you get to an
22 appropriate point, I don't want to interrupt
23 your flow.

24 MS. DINSMORE: Any time. This is
25 fine.

1 MR. DROOZ: Fine with you?

2 THE WITNESS: Yes.

3 MS. DINSMORE: We'll go off the
4 record.

5 THE VIDEOGRAPHER: The time is 10:24
6 a.m. We're off the record.

7 (Recess.)

8 THE VIDEOGRAPHER: The time is 10:46
9 a.m. We're back on the record.

10 BY MS. DINSMORE:

11 Q. Mr. Lucas, before the break, we were
12 discussing some of the reasons you believe equitable
13 sharing is appropriate in this matter. Do you remember
14 that?

15 A. Yes.

16 Q. Okay. And I'd like to just talk about some
17 specific costs. And one of the things that you noted
18 were, in your mind, some issues regarding dam safety,
19 is that right? You noted that as one of the reasons
20 you support this equitable sharing principle, is that
21 right?

22 A. That's correct.

23 Q. Okay. And have you undertaken any analysis
24 of any specific costs you contend should be excluded
25 from DEP's recovery based on dam safety issues?

1 A. I have not identified any specific costs.

2 Q. Do you have any opinion on what those
3 specific costs might be?

4 A.. Now DEP incurred some costs, and I want to
5 refer to one of my exhibits. It's Lucas Exhibit number
6 3. It was the August 22, 2016 dam safety order. In
7 that dam safety order, DEQ identified some corrective
8 action that DEP must take to resolve any potential
9 problems with dam safety.

10 Q. And in terms of the corrective action
11 you're referring to in Exhibit 3, are there costs
12 associated with that that you contend should be
13 excluded?

14 A. I don't come up with specific costs, but I
15 put this exhibit in along with the NPDES violation and
16 ground water exceedance exhibits to show that DEP had
17 not done a perfect job of managing its coal ash dams
18 and that supports my equitable sharing where DEP's
19 customers should not bear the full cost of problems
20 that occurred with coal ash management.

21 Q. Okay. And with regard to the dam safety
22 issues in particular, did you identify whether any of
23 those issues increased the cost of clients with CAMA?

24 A. Yes, it did increase some costs, and I've
25 gone back to pages 34 and 35 of my testimony. I will

1 talk in general a little bit instead of having to read
2 a lot of paragraphs.

3 Coal ash impoundment dam safety was under
4 the responsibility of the utilities commission until
5 2009. That responsibility was given to DEQ at that
6 time, but the coal ash impoundments that DEP owned were
7 grandfathered. They didn't have to start all over and
8 apply to DEQ like a brand new impoundment would have.

9 CAMA, removed the grandfathering provision,
10 the Coal Ash Management Act, CAMA, removed that
11 grandfathering provision. And I want to go back to
12 page 35, specifically on line 13, and I'll read that
13 sentence: CAMA further required that all CCR surface
14 impoundments comply with more frequent and detailed
15 inspection requirements.

16 On August 22, 2016, DEQ sent the company a
17 dam safety order requiring repairs on several coal ash
18 ponds, as shown in Lucas Exhibit number 3, and that's
19 where I conclude DEQ's increased oversight did increase
20 some costs.

21 Q. Okay. So the dam safety issues, as I
22 understand it, in your mind, increased the cost of
23 compliance under CAMA because of the dam safety order?

24 A. Yeah, DEP had some problems with its coal
25 ash dams, and this was still two years after the Dan

1 River spill. DEQ still found some problems and
2 required those to be corrected.

3 Q. And so the repairs you refer to on line 16
4 of page 35, those are the increased costs you contend
5 due to the dam safety issues?

6 A... Yeah, they had increased -- DEP was under
7 obligation to, of course, operate its coal ash dams
8 correctly, and those corrections did lead to some
9 increased costs.

10 Q. Okay. And I'm just trying to understand
11 what those costs are.

12 What are the increased costs of CAMA
13 compliance because of the dam safety issues you
14 identified?

15 A. Oh, there's no specific cost requirements
16 in CAMA. There are other law(sic) dam safety
17 requirements outside of CAMA that DEP would have had to
18 meet.

19 Q. Okay. So what are the costs of meeting
20 those requirements that you believe should be excluded
21 in this case?

22 A. I don't have a specific amount, but I would
23 have to go back to any additional costs that DEP
24 incurred, should be treated in that equitable sharing
25 that I recommend.

1 Q. Okay. So you're not recommending an
2 exclusion of any specific cost based on dam safety
3 issues, as you describe them?

4 A. That's correct.

5 Q. Okay. You also mentioned a failure to
6 comply with NPDES permit requirements, is that right?

7 A. Yes.

8 Q. Okay. And what costs, if any, do you
9 contend should be excluded from rate recovery because
10 DEP failed to comply with NPDES permit requirements?

11 A. I don't recommend any specific costs, but
12 what happened, the failure of some of the impoundments
13 to meet their NPDES requirements led to some of the
14 lawsuits that I show in Lucas Exhibit number 8.

15 Q. Okay. And is DEP seeking to recover the
16 costs of those lawsuits in this case?

17 A. I don't know of any specific costs they
18 were trying to recover.

19 Q. That's not an analysis you perform?

20 A. I'm sorry, say that again?

21 Q. You didn't perform that type of analysis,
22 as to any specific costs resulting from NPDES permit
23 violations?

24 A. Not directly, but like I said earlier, some
25 of those NPDES violations led to some of the lawsuits

1 that I showed in Lucas Exhibit number 8.. So
2 indirectly, those violations did create costs.

3 Q. That -- you're not sure whether -- and
4 you're not sure whether those costs are part of this
5 rate recovery case?

6 A. I am not sure. Some of those costs could
7 be in the E1 item 10 NC1800. I might not have been
8 able to identify them, and like I said earlier, that's
9 what led me to make my equitable sharing
10 recommendation.

11 Q. So, again, just like with the dam safety
12 issues, you're not recommending the exclusion of any
13 specific costs, it's just part of your rationale for
14 equitable sharing, is that right?

15 A. Yes.

16 Q. Okay. Going back to the dam safety issues,
17 do you have any knowledge or did you acquire any
18 knowledge of what permits are required to make dam
19 repairs?

20 A. Permits aren't required to make dam
21 repairs.

22 Q. Permits are not required?

23 A. To make repairs.

24 Q. What about enhancements to dams?

25 A. Yes, raising a dam, increasing the amount

1 of impounded water.

2 Q. Are you aware as to when any of -- any dam
3 enhancement permits were issued by DEQ to DEP?

4 A. No.

5 Q. You didn't look at that as part of your
6 analysis?

7 A. No.

8 Q. Finally, I think you mentioned, and we
9 talked a little bit about ground water exceedances, and
10 that was part of your rationale for cost sharing?

11 A. Yes.

12 Q. Okay. And did you identify any costs,
13 specific costs you contend should be excluded from rate
14 recovery because of ground water exceedances?

15 A. Yes, the extraction and treatment of ground
16 water and some of the litigation costs.

17 Q. So that was the \$6.6 million for the ground
18 water extraction, and the \$88,000 in litigation costs,
19 is that right?

20 A. Yes. And also ground water exceedances, I
21 believe, support my recommendation of equitable
22 sharing.

23 Q. Okay. But other than those two things,
24 there were no specific costs that you recommend for
25 exclusion?

1 A. That's correct.

2 Q. Okay. If the commission accepted the
3 equitable cost sharing principle, did you undertake any
4 analysis of how much of the total cost allowance that
5 would afford DEP?

6 A. No, that was done by public staff's witness
7 Mike Maness.

8 Q. And do you know what that figure is?

9 A. He recommended a 50/50 sharing.

10 Q. Do you know the dollar value that would
11 entail?

12 A. I don't have that in front of me.

13 Q. Have you seen it?

14 A. I've seen it, but I don't remember the
15 exact amount.

16 Q. Okay. Are you aware of any instance of
17 which the commission has supported the type of cost
18 sharing that you're talking about?

19 A. Yes.

20 Q. Okay. So can you provide some examples?

21 A. Yes. One example is a abandoned nuclear
22 construction, order and docket number E2 sub 481. I'll
23 list off some docket numbers here. This is for
24 abandoned nuclear construction, docket number E22 sub
25 224; E7 sub 338; E7 sub 358; E22 sub 273; E2 sub 537.

1 Q. And I'm sorry, were all of those docket
2 numbers related to an abandoned nuclear construction?

3 A. That's correct.

4 Q. And did you review material from those
5 matters in connection with preparing your testimony in
6 this case?

7 A. No, that was reviewed by witness Mike
8 Maness and is -- that's in his testimony.

9 Q. Okay. What do you understand about those
10 matters?

11 A. That's cases where the commission
12 determined that costs for nuclear abandonment should
13 not be totally borne by the ratepayers. They should be
14 shared between shareholders and ratepayers.

15 Q. Do you know the reason for that decision?

16 A. The reason is the companies take on some
17 risk when they start investigating construction of
18 nuclear power plants. It's a very expensive process.
19 The early engineering, license applications are
20 somewhat of a risk, and the utilities commission
21 determined that risk should be shared between the
22 shareholders and the ratepayers. It's a sharing of
23 risk.

24 Q. Okay. Do you know what ratio the
25 commission concluded was appropriate in that matter?

1 A. No.

2 Q. Do you know to what costs the commission
3 applied that ratio of cost sharing?

4 A. No. I want to further clarify, Duke Energy
5 Progress sent the public staff a data request, and they
6 specifically reference witness Maness, and that was
7 question number 2-47. His response to that data
8 request would more fully answer your questions.

9 Q. Okay. But in terms of your opinions, you
10 did not rely on any of that, that information in
11 forming your opinions here?

12 A. Well, I did rely on it. I mean, I just see
13 the case. It passed. Like I mentioned, there was some
14 sharing of risk, so that did inform my opinion on
15 equitable sharing.

16 Q. Okay. So the idea of sharing of risk
17 informed your opinion in terms of sharing of future
18 costs in this matter, is that right?

19 A. Yes.

20 Q. Okay. Why was that relevant to you?

21 A. Part of what we have to do is figure out
22 responsibility between the shareholders and ratepayers.
23 Since we weren't able to identify every cost we thought
24 should be removed, each specific cost, and since CAMA
25 came about in 2014, which cut some of the litigation

1 short, but the test(sic) in this case is 2016, so we
2 have two years of lapse, two years of CAMA would have
3 been very, very difficult to determine specific costs.

4 So we thought there was good precedent for
5 the equitable sharing of costs. And give me a moment,
6 I want to --

7 Q. Please..

8 A. -- more fully answer your question.

9 (Pause.)

10 A. Just the difficulty of determining what
11 costs imposed by the lawsuits would have been without
12 CAMA, that's why I recommended equitable sharing.

13 Q. Okay. Because -- so as I understand it,
14 because of the difficulty in determining specific
15 costs, the solution is the wholesale equitable sharing?
16 That's the rationale?

17 A. That's why I recommend equitable sharing.
18 Of course, I want to clear, there are lots of instances
19 in witness Darlene Peaden's testimony where we do
20 identify specific costs. I don't want to say there
21 were none. I'm just talking about my testimony and my
22 recommendations.

23 Q. Understood, okay. You have been with the
24 public staff since 2000, is that right?

25 A. Yes.

1 Q. When was the public staff first created?

2 Do you know?

3 A. 1977.

4 Q. Okay. And you mentioned before, I believe,
5 that until somewhat recently, the utilities commission
6 actually received dam safety reports, is that right?

7 A. That was correct.

8 Q. And those dam safety reports you've
9 reviewed, right, in the course of preparing your
10 testimony?

11 A. No, I didn't.

12 Q. You did not?

13 A. No.

14 Q. Okay. So you're not familiar with the
15 content of those dam safety reports?

16 A. That's correct.

17 Q. In the course of preparing your testimony,
18 did you become aware of the public staff ever raising
19 any concerns as to coal ash handling methodologies in
20 the course of any prior rate proceedings?

21 A. We did with the Dominion, the previous
22 Dominion rate case. We did review coal ash handling by
23 Dominion Energy.

24 Q. And that was what year?

25 A. 2016.

1 Q. So recently?

2 A. Yes.

3 Q. And prior to 2014, have you -- are you
4 aware of any instance in which the public staff has
5 raised concerns as to coal ash handling methodologies
6 in North Carolina?

7 A. No.

8 Q. And that's either by DEP or any company, is
9 that right?

10 A. That's correct.

11 Q. Did you become aware of any concern on the
12 part of the public staff, whether expressed to utility
13 companies or not, regarding alleged ground water
14 violations at any DEP site?

15 A. Yes, we talked a bit about the Sutton
16 problems. Also it's about two and a half years ago, we
17 suspected coal ash constituents were reaching some of
18 the wells owned by Aqua North Carolina.

19 Q. And what did you do in response to those
20 concerns? We'll start with the Aqua wells, is that
21 over down in Belmont?

22 A. Yes.

23 Q. Okay. And what were the discussions
24 surrounding that issue?

25 A. Just as part of this rate case, I discussed

1 that problem with Charles Junis of the public staff's
2 Water Division.

3 Q. Did that issue impact your opinion from
4 this case?

5 A. Yes.

6 Q. Okay. How so?

7 A. It was another instance of DEP being
8 responsible for ground water contamination.

9 Q. Have you looked at the ground water
10 monitoring results for the Aqua wells in Belmont?

11 A. No.

12 Q. Okay. Have you read any of the scientific
13 literature about what impact, if any, the coal ash
14 impoundments were having on those wells?

15 A. No.

16 Q. So you're not familiar with the Duke Energy
17 study regarding those issues?

18 A. No.

19 Q. I'm sorry, the Duke University study?

20 A. Duke University study? No, I'm not
21 familiar with it.

22 Q. Okay. Has the -- prior to this case, has
23 the public staff ever informed DEP or its legacy
24 companies that it was concerned with the history of
25 environmental compliance?

1 A. Environmental compliance, as in previous
2 cases, is air pollution requirements, example, the
3 Clean Smokestacks Act of 2002 has come up in
4 discussions in rate recovery.

5 Q. Okay. What about any concerns related to
6 coal ash handling by Duke Energy? Has the public staff
7 addressed those issues with Duke Energy prior to the
8 current rate proceedings?

9 A. We had discussions very soon after the Dan
10 River ash spill. I, along with Chairman Finley of the
11 utilities commission; Chris Ayers, the executive
12 director for the public staff, and my supervisor James
13 McLawhorn, went up to the site a week or two after the
14 spill and saw that the spilling would have occurred.
15 We had been in some discussions ever since. I'm not --
16 and those discussions might not -- you said to public
17 staff, it might not -- I might not necessarily be
18 involved in all of them. Other people on the public
19 staff might have been involved in discussions.

20 Q. Yes, sir. With respect to some of the
21 issues you identified when we were talking earlier
22 about dam safety issues, ground water issues, where you
23 in your testimony you talk about what you call a
24 history of issues going back several decades, do you
25 know whether there have ever been any discussions

1 between the public staff of the utilities commission
2 and DEP regarding those issues?

3 A. Not to my knowledge.

4 Q. Okay.

5 A. But I just want to preface, I'm one
6 engineer on the public staff.

7 Q. I understand, and I am just asking for your
8 personal knowledge.

9 A. Okay, yeah.

10 Q. You were here yesterday for Mr. Wittliff's
11 testimony, is that right?

12 A. I was here for the morning but not the
13 afternoon.

14 Q. Have you read his testimony?

15 A. Yeah, I've read a lot of it.

16 Q. And with respect to the costs that DEP is
17 asking to recover in this matter, what is your
18 understanding of Mr. Wittliff's position?

19 A. He's trying to remove a lot of the CAMA
20 costs.

21 Q. Anything else?

22 A. That's all I remember from it.

23 Q. Do you agree with that position?

24 A. I don't believe I'm in a position to agree
25 or disagree. The attorney general and the public staff

1 develop its recommendations independently of each
2 other. And in my testimony, I discuss the complexity,
3 I discuss some of the options that could be considered,
4 and I discuss how the public staff developed its
5 opinion. I can't really opine on the quality or what
6 his recommendations were. It certainly fell into one
7 of the options that I discussed.

8 Q. But not one of the options you ultimately
9 concluded was appropriate, is that right?

10 A. That's correct.

11 Q. Okay. Have you read the testimony of CUCA
12 witness O'Donnell?

13 A. No, I haven't.

14 Q. Do you have -- we've discussed a number of
15 your opinions and conclusions. Do you have opinions or
16 conclusions regarding this matter, other than what
17 appears in your written testimony?

18 A. No.

19 Q. Do you think that during the course of our
20 discussion today, we have summarized your opinions and
21 conclusions?

22 A. We have. I would like to be a little more
23 specific though.

24 Q. Yes, sir, please.

25 A. Okay. Page 62, I read lines 6 through 13

1 of my testimony, page 62, and at that time, you were
2 asking me questions in general, I'd like to read a
3 little bit more, just to be clear. I'd like to go more
4 into the specifics.

5 Q. Yes, sir.

6 A. I want to read page 62, starting on line
7 14: In particular, the public staff recommends that
8 the following expenditures be excluded from rate
9 recovery: One, DEP litigation costs and settlement
10 payments in cases where there are environmental
11 violations; two, costs to remedy environmental
12 violations where the costs exceed what CAMA would have
13 required in the absence of environmental violations and
14 three, costs required to be excluded under probation
15 conditions of the federal plea agreement.

16 These exclusions are in addition to the
17 recommended disallowances from Garrett & Moore to the
18 extent there is no double disallowance for the same
19 item.

20 Q. Okay. So with regard to those three items,
21 to make sure that we fully cover your testimony today,
22 with regard to number one, which starts on page 62,
23 line 15, it reads: DEP litigation costs and settlement
24 payments in cases where there are environmental
25 violations.

1 So you and the public staff recommend that
2 that be excluded?

3 A. That's correct.

4 Q. Have you identified, other than the \$88,000
5 we discussed, have you identified any specific costs
6 related to number one?

7 A. No.

8 Q. Okay. Number two states: Costs to remedy
9 environmental violations, where the costs exceeded what
10 CAMA would have required in the absence of
11 environmental violations.

12 We discussed your proposal for equitable
13 sharing. Have you identified any specific costs
14 outside of the \$6.6 million we discussed that would
15 fall under this provision?

16 A. No.

17 Q. Okay. And then three, costs required to be
18 excluded under the probation conditions of the federal
19 plea agreement.

20 Have you identified any specific costs that
21 fall under that provision that DEP is seeking to
22 recover?

23 A. No, to my knowledge, DEP has excluded those
24 costs for rate recovery.

25 Q. Okay. Having gone through those in

1 addition to our prior discussion, have we now today
2 fully summarized your testimony and opinions in this
3 case?

4 A. Yes..

5 MS. DINSMORE: If you don't mind, I'll
6 just take five minutes, make sure I have
7 enough to wrap up.

8 THE WITNESS: Okay.

9 MS. DINSMORE: Off the record.

10 THE VIDEOGRAPHER: The time is 11:17
11 a.m. We're off the record.

12 (Recess.)

13 THE VIDEOGRAPHER: The time is 11:31
14 a.m. We're back on the record.

15 BY MS. DINSMORE:

16 Q. Mr. Lucas, I just wanted to discuss a
17 little bit about the -- one of the two specific costs
18 that you identified, which is the \$6.6 million for --
19 related to extraction. Do you recall?

20 A. Yes. Yes.

21 Q. And I believe in response to a data
22 request, the public staff stated that in its opinion,
23 the necessity of extracting and treating water at
24 Sutton is the result of mismanagement. Do you recall
25 that?

1 A. Yes. And part of my review of that cost
2 was going through the E1 item 10 NC1800. That's where
3 I first identified those costs, and some of those costs
4 are attributable also to the Asheville plant and the
5 H.F. Lee plant.

6 Q. Okay. So in terms of the \$6.6 million,
7 but -- the idea is that the necessity of extracting and
8 treating the water at those plants is the result of
9 mismanagement, is that the --

10 A. Yes, if the ground water was clean, Duke
11 Energy would not have gone to the expense of extracting
12 and treating the ground water.

13 Q. Okay. So it's based on the fact of
14 exceedances, or do you believe it's based on
15 mismanagement that they undertook that expense?

16 A. I believe mismanagement created the
17 exceedances.

18 Q. Okay. And what experience do you have
19 specifically with ground water remediation that
20 supports that opinion?

21 A. When I was working on NPDES permits in the
22 mid-1990s, one of the types of permits I worked on was
23 ground water extraction and treatment.

24 Q. How did that experience inform your opinion
25 here, as it relates to exceedances being the result of

1 mismanagement?

2 A. Part of the documentation that I saw was
3 identifying a responsible party and who was going to
4 pay for that extraction and treatment.

5 Q. The responsible party in terms of the
6 responsible financial party, is that right?

7 A. Yes. Well, it's not just -- the
8 responsible party for creating environmental violation
9 frequently was the financial responsible party, but not
10 always.

11 Q. Okay. In the course of preparing your
12 testimony in this case, did you learn anything about
13 ground water contamination at ash basins, other than
14 those owned by Duke Energy?

15 A. I'm sorry, can you say that question again,
16 please?

17 Q. Sure. Do you have any knowledge about
18 ground water exceedances or ground water contamination
19 at other ash basin facilities, other than those owned
20 by Duke Energy?

21 A. No.

22 Q. Do you know whether ground water
23 exceedances of certain constituents near coal ash
24 basins is an issue unique to Duke Energy?

25 A. It's not unique to Duke Energy, that's why

1 EPA CCR rule was promulgated.

2 Q. And part of the development of the CCR rule
3 involved EPA studying damage cases regarding ground
4 water, is that right?

5 A. Do you mean legal damages? Can you please
6 clarify the question?

7 Q. Sure. How do you understand that EPA
8 studied the ground water in connection with coal ash
9 cases in promulgating the CCR rule?

10 A. It looked at actual problems that occurred
11 at power plants around the United States. It mentioned
12 some of them in the preamble. It talks about Dan
13 River. It talks about Duke Energy. It talks about the
14 TVA spill in 2008.

15 Q. Actually, the EPA cited 60 instances across
16 the country, is that right?

17 A. I don't know the number.

18 Q. Okay. But it certainly wasn't an issue
19 unique to Duke Energy?

20 A. That's correct.

21 Q. Is it your opinion that in all of those
22 cases, there was a degree of mismanagement by all of
23 those companies?

24 A. I can't state what was going on at the
25 other companies.

1 Q. So is it your opinion that the fact of
2 ground water contamination means there is
3 mismanagement?

4 A. It could be. It could be the result of
5 mismanagement of an ash basin.

6 Q. It could be. Is it necessarily the result
7 of mismanagement?

8 A. Yes, if the electric utility is responsible
9 for contaminant in the ground water, that's
10 mismanagement.

11 Q. So in all the cases cited by the EPA across
12 the country, it's your opinion that there must have
13 been mismanagement in all those cites?

14 A. I really can't speak what was going on in
15 other companies, and specifically what led to the
16 promulgation of the EPA's CCR rule.

17 Q. Okay. So whether applicable to this case,
18 you could envision a situation where there are ground
19 water exceedances around a coal ash impoundment that
20 are not the result of mismanagement?

21 A. If they're the responsibility of the
22 utility company, I believe it is. Maybe I'm
23 misunderstanding your question. There could be
24 exceedances of 2L standards due to background levels,
25 but in this case, the background level becomes the new

1 standard.

2 Q. And that involves an analysis to determine
3 what the background levels were?

4 A. Yes.

5 Q. And if I recall your testimony, that's not
6 an analysis you did in this case?

7 A. Well, the public staff sent DEP a data
8 request, where DEP believed it had exceedances, and DEP
9 responded. It did point out thousands of exceedances.

10 Q. Okay. And you believe that all of those
11 exceedances are the result of mismanagement?

12 A. I can't say every single one of them.
13 Certainly some of them were that led to my conclusion,
14 that ground water extraction treatment should not be
15 passed on to the ratepayers.

16 Q. Is there anything about the design of the
17 basins themselves, rather than the operation or
18 management that could have resulted in the ground water
19 exceedances?

20 A. Yes.

21 Q. Okay. Can you tell me about that?

22 A. Not having impervious barriers could be one
23 problem.

24 Q. Any other problems regarding the design?

25 A. Improper outfall drainage, that could lead

1 to higher levels, which would put more pressure on the
2 ground water. That's all I can think of at the moment.

3 Q. And thinking about Sutton, what, if
4 anything, do you think that DEP should have done to
5 avoid the need to extract and treat the ground water at
6 that plant?

7 A. I believe Duke Energy Progress should have
8 brought the ash basins up to modern standards. Those
9 ash basins were built decades ago. The Clean Water Act
10 of 1972, the Resource Conservation Recovery Act of
11 1976, more and more environmental awareness was coming
12 about, and I believe Duke Energy Progress at that time
13 certainly should have been aware that there were
14 potential problems that could have arisen from ash
15 basins and causing ground water problems.

16 Q. And when do you think that DEP should have
17 taken those steps?

18 A. The 1970s.

19 Q. And if in the 1970s, DEP had taken those
20 steps and incurred costs related to doing so, do you
21 think at that time, those costs would have been
22 recoverable?

23 A. Yes.

24 Q. In regards to those types of actions, do
25 you think it's reasonable for DEP to follow DEQ's

1 direction with regards to management of ash basins?

2 A. Yes.

3 Q. So certainly it wouldn't be mismanagement
4 to follow DEQ's directions?

5 A. It would not be mismanagement, but absent
6 DEQ's direction, I believe DEP is still responsible if
7 it created ground water contamination.

8 MS. DINSMORE: Okay. That's all the
9 questions I have. Thank you so much for
10 your time, Mr. Lucas.

11 THE WITNESS: Thank you.

12 EXAMINATION BY COUNSEL FOR THE UTILITIES
13 COMMISSION

14 BY MR. DROOZ:

15 Q. Just a few follow-up questions here.

16 Mr. Lucas, you were asked about the
17 distinction between exceedance and violation. Is there
18 any guidance in 2L about that?

19 A. Yes. I'm going to go back to my Exhibit
20 number 2.. This is on the second page, middle of that
21 page starts Section E. And in that section it's a long
22 sentence, but I'll start halfway through that sentence.
23 I guess I'll summarize it..

24 If a person conducting or controlling
25 activity that results in an increase in concentration

1 of a substance in excess, which is an exceedance of the
2 standards at or beyond the compliance boundaries
3 specified in the permit, shall do the following steps.

4 The steps are numbered one through four.

5 Step number three -- and there's one thing
6 that the responsible party has to do. To submit a
7 report to the secretary assessing the cause,
8 significance and extent of the violation, and that's a
9 distinction where an exceedance becomes a violation.

10 Q. If the concentration of a constituent of
11 interest is above the 2L threshold because a
12 naturally-occurring background, would that be a
13 violation?

14 A. No, if the background level is higher than
15 the 2L standard, then the background level becomes the
16 standard.

17 Q. If the constituent of interest is above the
18 2L threshold, not because of natural background causes,
19 but because of migration from an ash basin, would that
20 be a violation?

21 MS. DINSMORE: Objection. Go ahead.

22 A. If that exceedance is beyond the compliance
23 boundary, then that would be a violation.

24 Q. You were asked about your -- to summarize
25 your conclusions and recommendations, and you

1 referenced page 62 regarding the environmental
2 violations in coal ash. Did you have other
3 recommendations?

4 A. Yes. At that time, we were discussing coal
5 ash, I mean, I have other recommendations, and I'd like
6 to start on page 3, line 10. That's where I'm asked to
7 summarize my recommendations, and I'll do that again
8 here, starting on line 13 on page 3: Exclude
9 \$34.3 million from the rate base related to Mayo plant
10 ZLD construction delays and cost overruns.

11 Item two: Certain coal ash disposal costs
12 should be excluded from the fuel clause.

13 And number three goes more toward -- we
14 spent most of the time talking about exclusions include
15 DEP's litigation costs in cases where there are
16 environmental violations, costs to remedy environmental
17 violations, where the costs exceed what CAMA would have
18 required in the absence of environmental violations;
19 and three, costs required to be excluded under the
20 probation conditions of the federal plea agreement.

21 Q. And does that summarize all the different
22 areas of your testimony?

23 A. Yes, it does.

24 Q. You were asked about visiting Duke Energy
25 Progress coal fired plants in the course of your

1 investigation, and you mentioned Mayo. Have you
2 visited other Duke Progress coal fired plants?

3 A. Yes, before the rate case, I visited the
4 H.F. Lee plant, I visited the Sutton plant and the
5 Asheville plant.

6 Q. You were asked if the public staff had
7 raised any concerns regarding exceedances, seeps, dam
8 safety issues in the past. What is the public staff's
9 role as a state agency?

10 A. Public staff is to protect the using and
11 consuming public while reviewing the managerial,
12 financial and technical aspects of the company. We're
13 not environmental regulators.

14 Q. Is the focus of the commission authority
15 and the public staff role regulation of cost and rates?

16 A. Yes.

17 Q. And who does environmental regulation for
18 the State of North Carolina?

19 A. That's the Department of Environmental
20 Quality.

21 Q. You were asked if the fact of an
22 exceedance, and I think this is in reference to
23 settlement, but also generally, if that by itself
24 constituted mismanagement, and if there's one or a
25 minor number of noncompliances, would that be

1 mismanagement?

2 A. Yes, if the exceedances of the ground water
3 standards were the responsibility or caused by Duke
4 Energy Progress, I would call that mismanagement.

5 Q. How many exceedances do you show in your
6 Exhibit 6, I think it is --

7 A. Over 8,000.

8 Q. Does the extent of exceedances matter?

9 A. I'll give an example. In the EPA CCR rule,
10 there's an appendix three, and there's a list of
11 several constituents there, and just statistically
12 significant exceedance of just one of those
13 constituents requires remediation action by the
14 company.

15 Q. Do you have a copy of the response that has
16 your name on it with -- to the data request from Duke
17 Energy Progress.

18 A. Sorry?

19 Q. Data request two that they --

20 A. No, I don't have a copy of that, the
21 response to that data request.

22 MR. DROOZ: Do you mind if I hand him
23 one?

24 A. This is coal ash data request number two.

25 MS. DINSMORE: Can I just see what

1 you're going to reference? I assume you're
2 not marking it as an exhibit?

3 MR. DROOZ: We're not, 2-36.

4 MS. DINSMORE: Oh, that's fine.

5 A. Oh, I'm sorry, I'm mistaking your question
6 completely. You mean data request number two to the
7 company, or data request number two to the public
8 staff?

9 Q. From the company to the public staff after
10 your testimony was filed.

11 A. Okay, I'm sorry, I misunderstood.
12 I don't have a copy of that.

13 Q. Could you read the response that appears
14 there?

15 A. And this response 2-36, question 2, item
16 36, and the question relates to extracting and treating
17 contaminated ground water. There was extraction and
18 treatment at Sutton, Asheville and H.F. Lee. DEP
19 agreed to this in settlement. Absent years of ground
20 water violations at those plants, there would not have
21 been a need to settle. Years of ground water
22 violations show a pattern of noncompliance. That is
23 the mismanagement. Regardless of whether this
24 constitutes traditional imprudence, a properly managed
25 utility would not have had to extract and treat ground

1 water, unless it was contaminated.

2 Q. Were you involved in preparing that
3 response?

4 A. Yes..

5 Q. Do you agree with that response?

6 A. Yes.

7 MR. DROOZ: Okay. That's all my
8 questions.

9 FURTHER EXAMINATION BY COUNSEL FOR DUKE ENERGY
10 BY MS. DINSMORE:

11 Q. Just one follow up.

12 We went back on the cross to page three of
13 your testimony?

14 A. Yes.

15 Q. Where it(sic) please summarize your
16 recommendations.

17 A. Yes.

18 Q. And I just wanted to clarify with regards
19 to number three, which is page three line 18 through
20 page 4, line 5.

21 A. Yes,

22 Q. Have we fully discussed your opinions, as
23 it relates to that recommendation at today's
24 deposition?

25 A. Yes.

1 MS. DINSMORE: Okay, thank you.

2 Nothing further.

3 THE VIDEOGRAPHER: The time is 11:52

4 a.m. We're off the record.

5 (Whereupon the deposition was

6 concluded at 11:52 a.m.)

7 (Signature reserved.)

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1	SIGNATURE PAGE
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7	_____
8	JAY LUCAS
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11	SUBSCRIBED AND SWORN to before me this _____
12	day of _____, 2017.
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16	NOTARY PUBLIC
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18	My Commission expires: _____
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1 ERRATA PAGE

2 MMV

3

4 CASE NAME: In the Matter of Duke Energy Progress

5

6 WITNESS NAME: JAY LUCAS

7 DATE: November 2, 2017

8

9 PAGE LINE READS SHOULD READ REASON FOR CHANGE

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C E R T I F I C A T E

1
2 I, Marisa Munoz-Vourakis, RMR, CRR and Notary Public,
3 the officer before whom the foregoing proceeding was
4 conducted, do hereby certify that the witness(es) whose
5 testimony appears in the foregoing proceeding were duly
6 sworn by me; that the testimony of said witness(es) were
7 taken by me to the best of my ability and thereafter
8 transcribed under my supervision; and that the foregoing
9 pages, inclusive, constitute a true and accurate
10 transcription of the testimony of the witness(es).

11 I do further certify that I am neither counsel for,
12 related to, nor employed by any of the parties to this
13 action in which this proceeding was conducted, and
14 further, that I am not a relative or employee of any
15 attorney or counsel employed by the parties thereof, nor
16 financially or otherwise interested in the outcome of the
17 action.

18 IN WITNESS WHEREOF, I have hereunto subscribed my name
19 this 6th day of November, 2017.

20
21 

22 MARISA MUNOZ-VOURAKIS

23 Notary #20032900127
24
25

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IN THE MATTER OF DUKE ENERGY PROGRESS, LLC

Jay Lucas on 11/02/2017

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Witness Exhibit 1-1
Schedule 1-1

I, A

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENTS TO DEFERRED CCR COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Maness Supplemental Exhibit I
Schedule 1

Line No.	Item	NC Retail Amount
	Income statement impact	
1	Balance for Amortization	\$ 21,841 1/
2	Years to Amortize	18 2/
3	Annual amortization per Public Staff (L1 / L2)	1,213
4	Annual amortization per Company	7,303 3/
5	Public Staff adjustment to other O&M expense (L3 - L4)	<u>\$ (6,090)</u>
6	Statutory tax rate	25.6228% 4/
7	Public Staff adjustment to income taxes (-L5 x L6)	<u>\$ 1,560</u>
	Rate base impact	
8	Coal Ash Balance at May 1, 2018 per Public Staff (L1)	\$ 21,841
9	Less annual amortization (-L3)	<u>(1,213)</u>
10	Annualized Coal Ash Deferral Balance per Public Staff (L8 + L9)	20,627
11	Coal Ash Deferral Balance per Company filings	<u>14,607 5/</u>
12	Public Staff annualization adjustment to coal ash deferral balance (L10 - L11)	6,020
13	Adjustment to remove remaining coal ash deferral balance from rate base (-L10)	<u>(20,627)</u>
14	Total Public Staff adjustment to total additions (L12 + L13)	<u>\$ (14,607)</u>
15	Adjustment to ADIT (-L14 x L6)	<u>\$ 3,743</u>

- 1/ Maness Supplemental Exhibit I, Schedule 1-1, Line 41, Column (k).
2/ Amortization period recommended by Public Staff to achieve equitable sharing - approx. 60% to ratepayers, 40% to stockholders.
3/ Supplemental Company Exhibit PMM-1, Schedule 3, Page 2, Line NC-33.
4/ Johnson Exhibit 1, Schedule 1-3, Line 8.
5/ NCUC Form E-1, Supplemental Item 10, Page 310 of 350, Line 4.

DOMINION ENERGY NORTH CAROLINA
Deckel No. E-22, Sub 652
North Carolina Retail Operations
AMORTIZATION SCHEDULE FOR DEFERRED
CCR COSTS
For the Test Year Ended December 31, 2018
(In Thousands)

Manassas Supplemental Exhibit I
Schedule 1-1

Line No.	Month	DENC Coal Ash Spend			to NC for Spend	DENC N.C. Retail Coal Ash Deferral			Total Return	Ending Balance
		System Spend per Company	Public Staff Adjustment	System Spend per Public Staff		Beginning Balance	NC Spend	Ending Balance		
		(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
1	Jun-16	\$ 8,385	\$ -	\$ 8,385	5.0924%	\$ -	\$ 427	\$ 427	\$ 1	\$ 428
2	Jul-16	8,504	-	8,504	5.0924%	427	433	860	1	865
3	Aug-16	15,634	-	15,634	5.0924%	860	796	1,656	2	1,668
4	Sep-16	10,413	-	10,413	5.0924%	1,656	530	2,186	3	2,209
5	Oct-16	9,858	-	9,858	5.0924%	2,186	507	2,694	3	2,730
6	Nov-16	34,895	-	34,895	5.0924%	2,694	1,777	4,471	5	4,527
7	Dec-16	(342)	-	7,055	5.0924%	4,471	(17)	4,453	6	4,535
8	Jan-17	7,055	-	7,055	5.0924%	4,453	359	4,812	6	4,821
9	Feb-17	11,081	-	11,081	5.0924%	4,812	564	5,377	7	5,514
10	Mar-17	16,106	-	16,106	5.0924%	5,377	820	6,197	8	6,367
11	Apr-17	5,783	-	5,783	5.0924%	6,197	285	6,481	9	6,697
12	May-17	13,484	-	13,484	5.0924%	6,481	7,178	13,659	10	7,423
13	Jun-17	5,304	-	5,304	5.0924%	7,423	270	7,693	11	7,735
14	Jul-17	18,883	-	18,883	5.0924%	7,693	1,018	8,710	11	8,799
15	Aug-17	11,814	-	11,814	5.0924%	8,710	602	9,312	13	9,452
16	Sep-17	13,689	-	13,689	5.0924%	9,312	697	10,009	13	10,204
17	Oct-17	6,321	-	6,321	5.0924%	10,009	322	10,331	14	10,583
18	Nov-17	20,347	-	20,347	5.0924%	10,331	1,036	11,367	15	11,681
19	Dec-17	6,396	-	6,396	5.0924%	11,367	328	11,693	16	12,072
20	Jan-18	9,058	-	9,058	5.0924%	11,693	461	12,154	17	12,601
21	Feb-18	10,001	-	10,001	5.0924%	12,154	509	12,663	17	13,180
22	Mar-18	8,889	-	8,889	5.0924%	12,663	453	13,117	18	13,706
23	Apr-18	8,945	-	8,945	5.0924%	13,117	458	13,572	19	14,237
24	May-18	6,001	-	6,001	5.0924%	13,572	306	13,878	19	14,621
25	Jun-18	9,256	-	9,256	5.0924%	13,878	471	14,349	21	15,176
26	Jul-18	8,805	-	8,805	5.0924%	15,340	446	15,786	21	16,202
27	Aug-18	7,889	-	7,889	5.0924%	15,942	402	16,344	22	16,918
28	Sep-18	12,255	-	12,255	5.0924%	16,344	624	16,968	23	17,374
29	Oct-18	7,088	-	7,088	5.0924%	16,968	381	17,349	23	18,555
30	Nov-18	21,667	-	21,667	5.0924%	16,968	1,103	18,071	24	19,222
31	Dec-18	3,464	-	3,464	5.0924%	18,071	176	18,247	25	19,855
32	Jan-19	5,173	-	5,173	5.0924%	18,247	283	18,530	26	20,597
33	Feb-19	7,223	-	7,223	5.0924%	18,530	355	18,885	26	21,357
34	Mar-19	6,973	-	6,973	5.0924%	18,885	329	19,214	27	22,178
35	Apr-19	6,457	-	6,457	5.0924%	19,214	27	19,241	28	23,057
36	May-19	12,729	-	12,729	5.0924%	19,241	648	19,889	28	24,788
37	Jun-19	-	-	-	5.0924%	21,357	-	21,357	30	21,599
38	Jul-19	-	-	-	5.0924%	21,357	-	21,357	30	21,720
39	Aug-19	-	-	-	5.0924%	21,357	-	21,357	30	21,841
40	Sep-19	-	-	-	5.0924%	21,357	-	21,357	30	21,841
41	Oct-19	-	-	-	5.0924%	21,357	-	21,357	30	21,841
42	Total	\$ 376,693	\$ -	\$ 376,693		\$ 18,183	\$ 653	\$ 2,005	\$ 2,658	

- 1/ NCUJ Form E-1, Supplemental Item 10, Page 174 of 350, Column (1).
2/ There are no Public Staff recommended prudence disallowances to the deferred CCR costs.
3/ Column (a) plus Column (b).
4/ NCUJ Form E-1, Supplemental Item 10, Page 174 of 350, Column (2).
5/ Amount in Column (g) of previous line, plus return for prior 12 months in July of each year.
6/ Column (c) times Column (d).
7/ Column (e) plus Column (f).
8/ Column (a) plus Column (g), divided by 2, times after tax cost of debt.
9/ Column (a) plus Column (g), divided by 2, times after tax cost of equity.
10/ NCUJ Form E-1, Supplemental Item 10, Page 179 of 350, divided by 12.
11/ Column (b) plus Column (f).
12/ Column (g) plus total return for year to date from Column (d).

Dominion Energy North Carolina
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)
Page 2 of 8
Annualize Depreciation Expense

Purpose Depreciation expense is annualized based on the Plant in Service balance at June 30, 2019.

Method The first step in determining the increase in Depreciation Expense is to calculate the amount of North Carolina Jurisdiction Depreciation Expense at the end of the test period (line 2).

The amount of Depreciation Expense for each segment is then determined (Page 3). Depreciation Expense through June 2019 for each segment (Page 3, line 4) is multiplied by 12 to calculate the annualized Depreciation Expense amount. The North Carolina Jurisdiction amount is determined by applying the North Carolina Jurisdictional factor calculated on page 7 to each segment amount.

The End of Test Period amount on line 2 is compared to the amount on line 1 to determine the total adjustment amount found on line 3.

On line 4, the amount calculated on line 3 is reflected as an adjustment to the Provision for Accumulated Depreciation to reflect the annualization of depreciation expense.

Additionally, line 6 of the adjustment calculates an adjustment to the accumulated deferred income taxes amount to reflect the annualization of depreciation expense.

Dominion Energy North Carolina
Annualize Depreciation Expense
Page 3 of 8

Line No.	Description	Production	Transmission	Distribution	General	Intangible	Capital Lease	Total
1	Depreciation Expense for June 2019 Excluding ARO Activity (Page 4)	\$ 44,279	\$ 20,273	\$ 30,477	\$ 2,980	\$ 2,609	\$ 451	
2	Less Ringfenced Projects (Page 5)	1,253	5	31	12	0	-	
3	Less Distribution Strategic Underground Project (VA Only Activity) (Page 6)	-	-	1,167	-	-	-	
4	Total Depreciation Expense as of June 2019 (Line 1 - Line 2 - Line 3)	\$ 43,026	\$ 20,267	\$ 29,279	\$ 2,968	\$ 2,609	\$ 451	
5	Annualized Depreciation Expense (Line 4 x 12)	\$ 516,312	\$ 243,205	\$ 351,346	\$ 35,617	\$ 31,307	\$ 5,407	
6	North Carolina Jurisdictional Factor (Page 7)	5.2081%	4.2715%	5.1132%	6.9901%	4.9997%	5.0642%	
7	North Carolina Jurisdiction Depreciation Expense (Line 5 x Line 6)	\$ 26,890	\$ 10,388	\$ 17,965	\$ 2,490	\$ 1,565	\$ 274	\$ 59,572

Dominion Energy North Carolina					
Annualize Depreciation Expense					
Page 4 of 8					
			Amort of Limited	Amort of Other	
	Functional	Deprec Expense	Electric Plant	Elec Plant	
Line No.	Classification	Account 403	Account 404	Account 405	TOTAL
1	Intangible Plant	-	2,609,042	-	2,609,042
2	Steam Production Plant	16,512,533	-	-	16,512,533
3	Nuclear Production Plant	9,673,402	-	-	9,673,402
4	Hydraulic Production	2,356,446	-	-	2,356,446
6	Other Production Plant	15,165,793	-	570,893	15,736,686
7	Transmission Plant	20,272,535	-	-	20,272,535
8	Distribution Plant	30,477,402	-	-	30,477,402
9	Regional Transmission & Market Operation	-	-	-	-
10	General Plant	2,979,582	450,569	-	3,430,151
11	Common Plant - Electric	-	-	-	-
12	TOTAL	97,437,693	3,059,611	570,893	101,068,197
	Source: Fixed Asset Accounting				

Dominion Energy North Carolina
Annualize Depreciation Expense
Ring-fence Solar June 2019 Dep Exp
Page 5 of 8

Function	June 2019 Expense
Intangible Plant	142
Other Production	1,253,051
Transmission Plant	5,444
Distribution Plant	31,249
General Plant	11,511
	<u>1,301,396</u>

Note: Excludes ARC Expense

Dominion Energy North Carolina
Annualize Depreciation Expense
Rider U June 2018 Expense
Page 6 of 8

FERC
Distribution Amount
 1,167,310

Display Document: Data Entry View

Display Currency General Ledger View

Data Entry View

Document Number: 100305026 Company Code: 1000 Fiscal Year: 2019 Archive: ☐

Document Date: 06/30/2019 Posting Date: 06/30/2019 Period: 6

Reference: UC RIDER Cross-Comp. No.:

Currency: USD Texts Exist: ☐ Ledger Group:

Co. Item Chg doc. PK G/L Account A S D BusA TPBA Tx W Tax Jurisdiction Loc. curr. amount Value Date Assignment Text

1000	1		40	5501050	S		S	1300					251,733.83		20190630	RECLASS DEP EXP TO CORRECT CO.
	2		40	5501050	S		S	1300					82,853.22		20190630	RECLASS DEP EXP TO CORRECT CO.
	3		40	5501050	S		S	1300					141,370.92		20190630	RECLASS DEP EXP TO CORRECT CO.
	4		40	5501050	S		S	1300					381,615.45		20190630	RECLASS DEP EXP TO CORRECT CO.
	5		40	5501050	S		S	1300					309,736.72		20190630	RECLASS DEP EXP TO CORRECT CO.
	6		50	5501050	S		H	1300					1,167,310.14		20190630	RECLASS DEP EXP TO CORRECT CO.

Dominion Energy North Carolina
Annualize Depreciation Expense
North Carolina Jurisdictional Allocation Factors
Page 7 of 8
(000s)

Line No.	Description	(a)	(b)
		System	NC
1	Production Plant Depreciation & Amortization (COS Sch 4, line 47) (Page 8)	476,526	24,529
2	Less Ringfenced Projects including Ringfenced ARO (COS Sch 4, line 47) (Page 8)	5,099	0
3	Less Production ARO other than Ringfenced Projects (COS Sch 4, line 36) (Page 8)	9,100	451
4	Total Production Plant Depreciation & Amortization (Line 1 - Lines 2-3)	462,327	24,078
5	North Carolina Jurisdictional Allocation Factor (Line 4, col b / col a)	5.2081%	
6	Transmission Plant Depreciation (COS Sch 4, line 72) (Page 8)	219,880	9,389
7	Less Ringfenced Projects including Ringfenced ARO (COS Sch 4, line 72) (Page 8)	65	0
8	Less Transmission ARO other than Ringfenced Projects (COS Sch 4, lines 61-62) (Page 8)	-19	-1
9	Total Transmission Plant Depreciation & Amortization (Line 6 - Lines 7-8)	219,834	9,390
10	North Carolina Jurisdictional Allocation Factor (Line 9, col b / col a)	4.2715%	
11	Distribution Plant Depreciation (COS Sch 4, line 114) (Page 8)	376,114	18,715
12	Less Ringfenced Projects including Ringfenced ARO (COS Sch 4, line 114) (Page 8)	127	0
13	Less Distribution ARO other than Ringfenced Projects (COS Sch 4, lines 105-106) (Page 8)	0	0
14	Less Distribution Strategic Underground Depreciation (VA Only Activity) (COS Sch 4, lines 81, 83, 85, 87, 89, 91, 93 and 104) (Page 8)	9,975	0
15	Total Distribution Plant Depreciation & Amortization (Line 11 - Lines 12-14)	366,012	18,715
16	North Carolina Jurisdictional Allocation Factor (Line 15, col b / col a)	5.1132%	
17	General Plant Depreciation (COS Sch 4, line 142) (Page 8)	37,910	2,623
18	Less Ringfenced Projects including Ringfenced ARO (COS Sch 4, line 142) (Page 8)	60	0
19	Less General ARO other than Ringfenced Projects (COS Sch 4, lines 130-131) (Page 8)	-228	-14
20	Less Amortized Capital Leases (Line 27)	1,271	64
21	Total General Plant Depreciation & Amortization (Line 17 - Lines 18-20)	36,808	2,573
22	North Carolina Jurisdictional Allocation Factor (Line 21, col b / col a)	6.9901%	
23	Intangible Plant Depreciation (COS Sch 4, line 16) (Page 8)	31,580	1,579
24	Less Ringfenced Projects including Ringfenced ARO (COS Sch 4, line 16) (Page 8)	1	0
25	Total Intangible Plant Depreciation & Amortization (Line 23 - Line 24)	31,578	1,579
26	North Carolina Jurisdictional Allocation Factor (Line 25, col b / col a)	4.9997%	
27	Amortized Capital Leases (COS Sch 4, line 119) (Page 8)	1,271	64
28	North Carolina Jurisdictional Allocation Factor (Line 27, col b / col a)	5.0642%	
29	Total North Carolina Jurisdiction Depreciation and Amortization (Sum of Column b, Lines 1, 6, 11, 17 and 23)		56,835
30	Less: ARO (Sum of Column b, Lines 3, 8, 13, and 19)		436
	Total North Carolina Jurisdiction Depreciation and Amortization, YTD 12/31/2018 excluding ARO		
31	(Sum of Column b, Lines 4, 9, 15, 21, 25 and 27)		56,400

DOMINION ENERGY NORTH CAROLINA							SCHEDULE 4	
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	Calculation: System Excluding Ringfenced Projects
3	D: [DEPRECIATION & AMORTIZATION EXPENSES]							
4	E: []							
5	F: [INTANGIBLE PLANT]							
16	Q: [TOTAL INTANGIBLE PLANT DEPR. EXPENSES]	31,579,851	25,245,133	-3,703,450	1,051,032	-1,578,817	1,418	
17	R: []							
18	S: [PRODUCTION PLANT]							
56	AK: [ARO]	9,210,377	7,393,352	1,101,758	154,261	450,507	110,320	9,099,857
47	AV: [TOTAL PROD PLANT DEPRE & AMORT]	476,525,764	381,310,857	57,410,250	8,167,648	24,528,724	5,099,285	
48	AX: []							
49	AY: [TRANSMISSION PLANT]							
61	BK: [359.1 ARO - DECOMMISSIONING]	0	0	0	0	0	0	0
62	BL: [ARO - NON - DECOMMISSIONING]	(19,220)	(13,257)	(1,973)	(3,183)	(807)	0	(19,220)
72	BV: [TOTAL TRANSMISSION PLANT DEPREC]	219,880,168	152,987,925	22,935,564	34,501,982	9,389,370	65,327	
73	BW: []							
74	BX: []							
75	BY: [DISTRIBUTION PLANT]							
81	CE: [364 POLES, TOWERS & FIXTURES - RIDER U]	356,003	316,334	39,669	0	0	0	FACTORU
83	CG: [365 OVERHEAD CONDUCT & DEVICES - RIDER U]	416,247	369,866	46,382	0	0	0	FACTORU
85	CI: [366 UNDERGROUND CONDUIT - RIDER U]	559,043	496,750	62,293	0	0	0	FACTORU
87	CK: [367 UNDERGROUND COND & DEVICES - RIDER U]	4,932,036	4,382,469	549,567	0	0	0	FACTORU
89	CM: [368 LINE TRANSFORMERS - RIDER U]	1,071,097	951,747	119,350	0	0	0	FACTORU
91	CO: [369 SERVICES - RIDER U]	2,572,525	2,285,874	286,651	0	0	0	FACTORU
93	CQ: [370 METERS - RIDER U]	835	742	93	0	0	0	FACTORU
104	DB: [373 STREET LIGHTING - RIDER U]	67,246	59,753	7,493	0	0	0	FACTORU
105	DC: [374 ARO - DECOMMISSIONING]	0	0	0	0	0	0	0
106	DD: [ARO - NON - DECOMMISSIONING]	0	0	0	0	0	0	0
114	DL: [TOTAL DISTRIBUTION PLANT]	376,113,822	314,719,890	40,557,022	1,995,088	18,714,993	126,829	
115	DN: []							
116	DO: [GENERAL PLANT]							
119	DR: [390 AMORTIZED CAPITALIZED LEASES]	1,270,638	1,041,234	138,897	26,160	64,347	0	PLANT ACCT 389 390 391 398
150	EC: [399.9 ARO - DECOMMISSIONING]	0	0	0	0	0	0	0
131	ED: [ARO - NON - DECOMMISSIONING]	(228,383)	(185,421)	(24,816)	(4,073)	(14,073)	0	TOTAL GEN PLANT
142	ER: [TOTAL GENERAL PLANT DEPREC NA]	37,910,242	29,444,353	4,794,845	988,275	2,623,234	59,536	(228,383)
143	ES: []							
144	ET: [TOTAL DEPREC & AMORT EXPENSES]	1,142,009,847	903,717,158	129,401,131	46,704,025	56,835,138	5,352,394	

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)
Page 2 of 7
Annualize Depreciation Expense

Purpose Depreciation expense is updated to a June 30, 2019, level based on the Projected Gross Plant balance at June 30, 2019, and the overall depreciation rate presented in DENC's most recent depreciation study, as modified by the Va Commission Staff pursuant to their review in 2018. Additionally, accumulated depreciation is adjusted for the annualization of depreciation expense. Lastly, accumulated deferred income taxes are adjusted for the annualization of depreciation expense.

Method Gross Plant Projected, line 1 of adjustment, is calculated on page 3. On page 3, projected monthly balances for Dec18-Jun19 for Gross Plant (excluding CWIP), as provided by the approved 2018-2022 Five Year Plan, are shown on line 3. Balances for the Distribution Strategic Underground Project, a Virginia-only activity, and the Ring-Fenced Projects are shown on lines 4-5. These balances are subtracted from line 3 to give projected Monthly Plant in Service balances without CWIP (line 6).

Line 7 of page 3 shows the incremental monthly projected change, per line 6, for months Jan19-Jun19.

Line 8 of page 3 shows the December 2018 Electric Plant in Service balance (excluding CWIP) as provided by the COS, Sch 9. Lines 9-15 remove the Underground and Ring Fenced Projects and ARO from the plant in service balances.

The incremental monthly projected changes from line 7 for Jan19-Jun19 are added to the adjusted Dec2018 balance to determine the projected balance at June 2019 (line 1 of adjustment).

Line 2 of the adjustment reflects the overall depreciation rate presented in DENC's most recent depreciation study, as modified by the Va Commission Staff pursuant to their review in 2018.

Annualized Depreciation Expense at June 30, 2019, is compared to the Test Year Depreciation Expense found on line 4. The difference is the Increase in Depreciation Expense (line 5 of adjustment).

The North Carolina Jurisdictional Factor is found by dividing the North Carolina Jurisdiction Depreciation Expense by System Depreciation Expense as adjusted (see calculation on page 1, line 22). This factor is applied to the amount on line 5 to determine the North Carolina Adjustment for Depreciation Expense, line 7.

On line 8, the amount calculated on line 7 is reflected as an adjustment to the Provision for Accumulated Depreciation to reflect the annualization of depreciation expense.

Additionally, line 10 of the adjustment calculates an adjustment to the accumulated deferred income taxes amount to reflect the annualization of depreciation expense.

DOMINION ENERGY NORTH CAROLINA
Annualize Depreciation Expense
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Line #	Plant In Service (in millions)	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
1	Gross Plant in Service (Excluding CWIP) - Projection (1)	42,446.2	42,563.2	42,632.3	42,943.4	43,057.5	43,142.8	43,405.2
2	Nuclear Fuel (Excluding CWIP) - Projection (1)	1,741.8	1,741.8	1,741.8	1,741.8	1,809.1	1,809.1	1,809.1
3	Gross Plant Plus Nuclear Fuel (Excluding CWIP) (line 1 + line 2) (1)	44,188.0	44,305.0	44,374.1	44,685.2	44,866.6	44,951.9	45,214.3
4	Less: Distribution Strategic Underground Project (VA Only Activity) (Dec 2018 - page 5; Projection - page 7)	476.6	486.5	497.5	508.8	520.5	532.1	543.1
5	Less: Ring-fenced Projects (1)	237.2	273.4	273.4	273.4	274.0	274.0	412.7
6	Plant in Service Excluding CWIP, Underground Project, & Ring-fenced Projects - Projection (line 3 - line 4 - line 5)	43,474.3	43,545.1	43,603.2	43,903.0	44,072.2	44,145.8	44,258.4
7	Incremental Monthly Change		70.8	58.1	299.8	169.2	73.7	112.6
8	Electric Plant in Service (Excluding CWIP) - COS Sch 9, line 13 (2)	43,152.3						
9	Less: Distribution Strategic Underground Program (VA Only Activity); COS Sch 10, lines 235, 249, 263, 277, 287, 301, 310, and 328 (see page 5)	476.6						
10	Less: Ring-fenced Projects (Includes Ring-fenced ARO) - COS Sch 9, line 13 (2)	367.7						
11	Less ARO other than Ring-fence projects (see Page 5):							
12	Production (COS Sch 10, lines 82-83)	134.9						
13	Transmission (COS Sch 10, line 151)	(0.0)						
14	Distribution (COS Sch 10, line 331)	-						
15	General (COS Sch 10, lines 421-422)	(0.4)						
16	Electric Plant in Service (excluding CWIP) Less ARO (line 8 - sum lines 9-15)	42,173.6						
17	Total Electric Plant in Service (including Nuclear Fuel) (line 16 plus incremental change)	42,173.6	42,244.4	42,302.6	42,602.3	42,771.5	42,845.2	42,957.8

Source:

- (1) Projected Dec 2018 - Jun 2019 balances from the Approved 2018 - 2022 Five Year Plan, Financial Analysis & Planning.
(2) Dec 2018 plant in service balance provided by the COS (SWPA) 12/2018 Schedule 9, Line 13 (see page 4).

		VIRGINIA ELECTRIC AND POWER COMPANY						SCHEDULE 9
		SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018						
		DOCKET NO. E-22, SUB 562						
		SCHEDULE 9 - SUMMARY OF PLANT						
		System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis
Line #								
1	Dec 2018							
2								
3	C:(SUMMARY OF PLANT)							
4	D:[]							
5	E:(ELECTRIC PLANT IN SERVICE)							
6	F:[] TOTAL PRODUCTION PLANT	19,462,638,590	15,405,629,611	2,348,567,601	338,846,338	1,018,465,681	351,129,860	NC Schedule 10 - Plant in Ser
7	G:[] TOTAL TRANSMISSION PLANT	9,364,258,761	6,503,160,844	974,802,446	1,484,705,439	399,622,473	1,967,559	NC Schedule 10 - Plant in Ser
8	H:[] TOTAL DISTRIBUTION PLANT	11,734,137,966	9,808,680,726	1,240,705,227	78,277,234	592,534,798	13,959,981	NC Schedule 10 - Plant in Ser
9	I:[] TOTAL GENERAL PLANT	827,650,747	671,452,926	89,837,575	14,733,945	50,958,003	668,298	NC Schedule 10 - Plant in Ser
10	J:[] TOTAL INTANGIBLE PLANT	291,078,393	220,803,668	37,620,700	13,231,496	19,422,529	0	NC Schedule 10 - Plant in Ser
11	K:[] PLANT PURCHASED / SOLD	0	0	0	0	0	0	NC Schedule 10 - Plant in Ser
12	L:[] NUCLEAR FUEL	1,472,572,459	1,159,927,734	205,590,923	27,979,318	79,074,483	0	NC Schedule 10 - Plant in Ser
13	M:[] TOTAL ELECTRIC PLANT IN SERVICE	43,152,336,916	33,769,635,510	4,897,124,472	1,957,773,769	2,160,077,967	367,725,198	

DOMINION ENERGY NORTH CAROLINA
Annualize Depreciation Expense
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		VIRGINIA ELECTRIC AND POWER COMPANY					SCHEDULE 10
		SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018					
		DOCKET NO. E-22, SUB 562					
		SCHEDULE 10 - PLANT IN SERVICE					
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis
235	IC:[364 VA - RIDER U]	19,435,797	17,290,377	2,145,420	0	0	FACTORU
249	IR:[365 VA - RIDER U]	19,800,337	17,614,677	2,185,660	0	0	FACTORU
263	JF:[366 VA - RIDER U]	47,514,164	42,269,313	5,244,851	0	0	FACTORU
277	JT:[367 VA - RIDER U]	200,691,742	178,538,384	22,153,358	0	0	FACTORU
287	KD:[368 VA - RIDER U]	45,734,907	40,686,459	5,048,448	0	0	FACTORU
301	KR:[369 VA - RIDER U]	140,967,695	125,406,976	15,560,719	0	0	FACTORU
310	LA:[370 VA - RIDER U]	0	0	0	0	0	
328	LS:[373 RIDER U]	2,423,047	2,155,579	267,468	0	0	FACTORU

		VIRGINIA ELECTRIC AND POWER COMPANY					SCHEDULE 10
		SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018					
		DOCKET NO. E-22, SUB 562					
		SCHEDULE 10 - PLANT IN SERVICE					
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis
81	CE:[]						
82	CF:[345 ARO DECOMMISSIONING]	(178,145,695)	(144,738,667)	(21,568,577)	(3,019,943)	(8,819,508)	FACTOR1
83	CG:[ARO - OTHER PRODUCTION]	316,197,929	254,323,494	37,898,620	5,306,408	15,496,952	FACTOR1
151	EW:[359.1 ARO - OTHER TRANSMISSION]	(49,774)	(34,345)	(5,110)	(8,227)	(2,092)	FACTOR2
331	LW:[374 ARO DISTRIBUTION - OTHER]	0	0	0	0	0	OUTPUT Template-Plant in
421	PJ:[399.3 ARO - DECOMMISSIONING]	0	0	0	0	0	
422	PK:[399.3 ARO GENERAL OTHER]	(413,220)	(338,970)	(45,267)	(8,036)	(20,947)	TOTAL_GEN_x3993AFC

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Annualize Depreciation Expense
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VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
143	ES[3]							
144	ET: [TOTAL DEPREC & AMORT EXPENSES]	1,142,009,847	903,783,158	129,393,664	46,640,212	56,838,408	5,352,394	

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
81	CE[364 POLES, TOWERS & FXTURES - RIDER U]	356,003	316,706	39,297	0	0	0	FACTORU
83	CG[365 OVERHEAD CONDUCT & DEVICES - RIDER U]	416,247	370,300	45,947	0	0	0	FACTORU
85	CI[366 UNDERGROUND CONDUIT - RIDER U]	559,043	497,333	61,710	0	0	0	FACTORU
87	CK[367 UNDERGROUND COND & DEVICES - RIDER U]	4,932,036	4,387,613	544,423	0	0	0	FACTORU
89	CM[368 LINE TRANSFORMERS - RIDER U]	1,071,097	952,864	118,233	0	0	0	FACTORU
91	CO[369 SERVICES - RIDER U]	2,572,525	2,288,557	283,968	0	0	0	FACTORU
93	CQ[370 METERS - RIDER U]	835	743	92	0	0	0	FACTORU
104	DB[373 STREET LIGHTING - RIDER U]	67,246	59,823	7,423	0	0	0	FACTORU

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
36	AK[ARO]	9,210,377	7,393,352	1,101,738	154,261	450,507	110,520	FACTOR1
61	BK[359.1 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
62	BL[ARO - NON - DECOMMISSIONING]	(19,220)	(13,262)	(1,973)	(3,177)	(608)	0	FACTOR2
105	DC[374 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
106	DD[ARO - NON - DECOMMISSIONING]	0	0	0	0	0	0	
130	EC[399.3 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
131	ED[ARO - NON - DECOMMISSIONING]	(228,383)	(185,431)	(24,810)	(4,069)	(14,073)	0	TOTAL_GEN_PLANT

DOMINION ENERGY NORTH CAROLINA
Annualize Depreciation Expense
Page 7 of 7

Distribution Strategic Underground Project

Description	January-19	February-19	March-19	April-19	May-19	June-19
Plant in Service (Phase I - Phase V and later)	486,531	497,505	508,813	520,454	532,095	543,070

Source: Financial and Business Services

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
Twelve Months ended December 31, 2018
(000's)
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Annualize Depreciation Expense

Purpose Depreciation expense is updated to a June 30, 2019, level based on the Projected Gross Plant balance at June 30, 2019, and the overall depreciation rate presented in DENC's most recent depreciation study, as modified by the Va Commission Staff pursuant to their review in 2018. Additionally, accumulated depreciation is adjusted for the annualization of depreciation expense. Lastly, accumulated deferred income taxes are adjusted for the annualization of depreciation expense.

Method Gross Plant Projected, line 1 of adjustment, is calculated on page 3. On page 3, projected monthly balances for Dec18-Jun19 for Gross Plant (excluding CWIP), as provided by the approved 2018-2022 Five Year Plan, are shown on line 3. Balances for the Distribution Strategic Underground Project, a Virginia-only activity, and the Ring-Fenced Projects are shown on lines 4-5. These balances are subtracted from line 3 to give projected Monthly Plant in Service balances without CWIP (line 6).

Line 7 of page 3 shows the incremental monthly projected change, per line 6, for months Jan19-Jun19.

Line 8 of page 3 shows the December 2018 Electric Plant in Service balance (excluding CWIP) as provided by the COS, Sch 9. Lines 9-15 remove the Underground and Ring Fenced Projects and ARO from the plant in service balances.

The incremental monthly projected changes from line 7 for Jan19-Jun19 are added to the adjusted Dec2018 balance to determine the projected balance at June 2019 (line 1 of adjustment).

Line 2 of the adjustment reflects the overall depreciation rate presented in DENC's most recent depreciation study, as modified by the Va Commission Staff pursuant to their review in 2018.

Annualized Depreciation Expense at June 30, 2019, is compared to the Test Year Depreciation Expense found on line 4. The difference is the Increase in Depreciation Expense (line 5 of adjustment).

The North Carolina Jurisdictional Factor is found by dividing the North Carolina Jurisdiction Depreciation Expense by System Depreciation Expense as adjusted (see calculation on page 1, line 22). This factor is applied to the amount on line 5 to determine the North Carolina Adjustment for Depreciation Expense, line 7.

On line 8, the amount calculated on line 7 is reflected as an adjustment to the Provision for Accumulated Depreciation to reflect the annualization of depreciation expense.

Additionally, line 10 of the adjustment calculates an adjustment to the accumulated deferred income taxes amount to reflect the annualization of depreciation expense.

DOMINION ENERGY NORTH CAROLINA
Annualize Depreciation Expense
Page 3 of 7

Line #	Plant In Service (in millions)	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
1	Gross Plant in Service (Excluding CWIP) - Projection (1)	42,446.2	42,563.2	42,632.3	42,943.4	43,057.5	43,142.8	43,405.2
2	Nuclear Fuel (Excluding CWIP) - Projection (1)	1,741.8	1,741.8	1,741.8	1,741.8	1,809.1	1,809.1	1,809.1
3	Gross Plant Plus Nuclear Fuel (Excluding CWIP) (line 1 + line 2) (1)	44,188.0	44,305.0	44,374.1	44,685.2	44,866.6	44,951.9	45,214.3
4	Less: Distribution Strategic Underground Project (VA Only Activity) (Dec 2018 - page 5; Projection - page 7)	476.6	486.5	497.5	508.8	520.5	532.1	543.1
5	Less: Ring-fenced Projects (1)	237.2	273.4	273.4	273.4	274.0	274.0	412.7
6	Plant in Service Excluding CWIP, Underground Project, & Ring-fenced Projects - Projection (line 3 - line 4 - line 5)	43,474.3	43,545.1	43,603.2	43,903.0	44,072.2	44,145.8	44,258.4
7	Incremental Monthly Change		70.8	58.1	299.8	169.2	73.7	112.6
8	Electric Plant in Service (Excluding CWIP) - COS Sch 9, line 13 (2)	43,152.3						
9	Less: Distribution Strategic Underground Program (VA Only Activity); COS Sch 10, lines 235, 249, 263, 277, 287, 301, 310, and 328 (see page 5)	476.6						
10	Less: Ring-fenced Projects (Includes Ring-fenced ARO) - COS Sch 9, line 13 (2)	367.7						
11	Less ARO other than Ring-fence projects (see Page 5):							
12	Production (COS Sch 10, lines 82-83)	134.9						
13	Transmission (COS Sch 10, line 151)	(0.0)						
14	Distribution (COS Sch 10, line 331)	-						
15	General (COS Sch 10, lines 421-422)	(0.4)						
16	Electric Plant in Service (excluding CWIP) Less ARO (line 8 - sum lines 9-15)	42,173.6						
17	Total Electric Plant in Service (including Nuclear Fuel) (line 16 plus incremental change)	42,173.6	42,244.4	42,302.6	42,602.3	42,771.5	42,845.2	42,957.8

Source:

- (1) Projected Dec 2018 - Jun 2019 balances from the Approved 2018 - 2022 Five Year Plan, Financial Analysis & Planning.
(2) Dec 2018 plant in service balance provided by the COS (SWPA) 12/2018 Schedule 9, Line 13 (see page 4).

VIRGINIA ELECTRIC AND POWER COMPANY								
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 9 - SUMMARY OF PLANT								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
1	Dec 2018							
2								
3	C:[SUMMARY OF PLANT]							
4	D:[]							
5	E:[ELECTRIC PLANT IN SERVICE]							
6	F:[TOTAL PRODUCTION PLANT]	19,462,638,590	15,405,629,611	2,348,567,601	838,846,338	1,018,465,681	351,129,360	NC Schedule 10 - Plant in Sen
7	G:[TOTAL TRANSMISSION PLANT]	9,364,258,761	6,503,160,844	974,802,446	1,484,705,439	399,622,473	1,967,559	NC Schedule 10 - Plant in Sen
8	H:[TOTAL DISTRIBUTION PLANT]	11,734,137,966	9,808,660,726	1,240,705,227	78,277,234	592,534,798	13,959,981	NC Schedule 10 - Plant in Sen
9	I:[TOTAL GENERAL PLANT]	827,650,747	671,452,926	89,837,575	14,733,945	50,958,003	668,298	NC Schedule 10 - Plant in Sen
10	J:[TOTAL INTANGIBLE PLANT]	291,078,393	220,803,668	37,620,700	13,231,496	19,422,529	0	NC Schedule 10 - Plant in Sen
11	K:[PLANT PURCHASED / SOLD]	0	0	0	0	0	0	NC Schedule 10 - Plant in Sen
12	L:[NUCLEAR FUEL]	1,472,572,459	1,159,927,734	205,590,923	27,979,318	79,074,483	0	NC Schedule 10 - Plant in Sen
13	M:[TOTAL ELECTRIC PLANT IN SERVICE]	43,152,336,916	33,769,635,510	4,897,124,472	1,957,773,769	2,160,077,967	367,725,198	

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Annualize Depreciation Expense
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VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 10
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 10 - PLANT IN SERVICE								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
235	IC:[364 VA - RIDER U]	19,435,797	17,290,377	2,145,420	0	0	0	FACTORU
249	IR:[365 VA - RIDER U]	19,800,337	17,614,677	2,185,660	0	0	0	FACTORU
263	JF:[366 VA - RIDER U]	47,514,164	42,269,313	5,244,851	0	0	0	FACTORU
277	JT:[367 VA - RIDER U]	200,691,742	178,538,384	22,153,358	0	0	0	FACTORU
287	KD:[368 VA - RIDER U]	45,734,907	40,686,459	5,048,448	0	0	0	FACTORU
301	KR:[369 VA - RIDER U]	140,967,695	125,406,976	15,560,719	0	0	0	FACTORU
310	LA:[870 VA - RIDER U]	0	0	0	0	0	0	
328	LS:[373 RIDER U]	2,423,047	2,155,579	267,468	0	0	0	FACTORU

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 10
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 10 - PLANT IN SERVICE								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
81	CE:							
82	CF:[346 ARO DECOMMISSIONING]	(178,146,695)	(144,738,667)	(21,568,577)	(3,019,943)	(8,819,508)	0	FACTOR1
83	CG:[ARO - OTHER PRODUCTION]	316,197,929	254,323,494	37,898,620	5,305,408	15,496,952	3,172,455	FACTOR1
151	EW:[359.1 ARO - OTHER TRANSMISSION]	(49,774)	(34,345)	(5,110)	(8,227)	(2,092)	0	FACTOR2
331	LW:[374 ARO DISTRIBUTION - OTHER]	0	0	0	0	0	0	OUTPUT Template-Plant in
421	PJ:[399.3 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
422	PK:[399.3 ARO GENERAL OTHER]	(413,220)	(338,970)	(45,267)	(8,036)	(20,947)	0	TOTAL GEN_x3993AFC

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
143	ES:[]							
144	ET: [TOTAL DEPREC & AMORT EXPENSES]	1,142,009,847	903,783,168	129,395,664	46,640,212	56,838,408	5,352,394	

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
81	CE:[364 POLES, TOWERS & FIXTURES - RIDER U]	356,003	316,706	39,297	0	0	0	FACTORU
83	CG:[365 OVERHEAD CONDUCT & DEVICES - RIDER U]	416,247	370,500	45,947	0	0	0	FACTORU
85	CI:[366 UNDERGROUND CONDUIT - RIDER U]	559,043	497,333	61,710	0	0	0	FACTORU
87	CK:[367 UNDERGROUND COND & DEVICES - RIDER U]	4,932,036	4,387,619	544,428	0	0	0	FACTORU
89	CM:[368 LINE TRANSFORMERS - RIDER U]	1,071,097	952,864	118,233	0	0	0	FACTORU
91	CO:[369 SERVICES - RIDER U]	2,572,525	2,288,557	283,968	0	0	0	FACTORU
93	CQ:[370 METERS - RIDER U]	835	743	92	0	0	0	FACTORU
104	DB:[373 STREET LIGHTING - RIDER U]	67,246	59,825	7,425	0	0	0	FACTORU

VIRGINIA ELECTRIC AND POWER COMPANY								SCHEDULE 4
SUMMER WINTER PEAK & AVERAGE STUDY - EOP - PERIOD ENDED DECEMBER 31, 2018								
DOCKET NO. E-22, SUB 562								
SCHEDULE 4 - DEPRECIATION & AMORTIZATION								
Line #	System	Va Juris	Va Non-Juris	FERC	N C Juris	Ringfenced Projects	Allocation Basis	
36	AK:[ARO]	9,210,377	7,593,352	1,101,738	154,261	450,507	110,520	FACTOR1
61	BK:[359.1 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
62	BL:[ARO - NON - DECOMMISSIONING]	(19,220)	(13,262)	(1,973)	(5,177)	(808)	0	FACTOR2
105	DC:[374 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
106	DD:[ARO - NON - DECOMMISSIONING]	0	0	0	0	0	0	
130	EC:[399.3 ARO - DECOMMISSIONING]	0	0	0	0	0	0	
131	ED:[ARO - NON - DECOMMISSIONING]	(228,383)	(185,431)	(24,810)	(4,069)	(14,073)	0	TOTAL_GEN_PLANT

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Annualize Depreciation Expense
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Distribution Strategic Underground Project

Description	January-19	February-19	March-19	April-19	May-19	June-19
Plant in Service (Phase I - Phase V and later)	486,531	497,505	508,813	520,454	532,095	543,070

Source: Financial and Business Services

Question No. 2:

Please provide any estimates of total coverage by insurers for claims or potential claims related to any liability for CCR related damages.

[REDACTED]

[REDACTED]

Question No. 3:

Please provide a narrative summary of any attempts the Company has made to recover insurance proceeds for liability related to CCR.

[REDACTED]

[REDACTED]

Question No. 4:

In response to Public Staff DR 81-1, the Company provided communications to insurance carriers regarding lawsuits and/or intent to sue notices filed by the Sierra Club and nearby property owners at Possum Point. Please confirm whether these were the only claims or notices sent relating to the Company's insurance carriers regarding potential or existing environmental liabilities. If there were other claims or notices of potential claims identified above, please list any claims made for CCR liability, including legal liability, cleanup, compliance, or other relevant liability that would go towards the costs being recovered in this proceeding.

[REDACTED]

[REDACTED]

Question No. 5:

Please confirm whether any insurance proceeds have been recovered to date by the Company for any occurrences related to CCR operations.

[REDACTED]

[REDACTED]

END CONFIDENTIAL

Bremo
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	5	5	N/A	10
Calcium	2	2	N/A	4
Chloride	-	-	N/A	-
Fluoride	1	1	N/A	2
pH	-	-	N/A	-
Sulfate	1	1	N/A	2
Total Dissolved Solids	1	1	N/A	2
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	1 (2)	1	2
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	10	11	1	22

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from five (5) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Chesapeake
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Exceedances Total
	2017	2018	
Appendix III Constituents			
Boron	N/A	N/A	-
Calcium	N/A	N/A	-
Chloride	N/A	N/A	-
Fluoride	N/A	N/A	-
pH	N/A	N/A	-
Sulfate	N/A	N/A	-
Total Dissolved Solids	N/A	N/A	-
Appendix IV Constituents			
Antimony	N/A	N/A	-
Arsenic	N/A	N/A	-
Barium	N/A	N/A	-
Beryllium	N/A	N/A	-
Cadmium	N/A	N/A	-
Chromium	N/A	N/A	-
Cobalt	N/A	N/A	-
Fluoride	N/A	N/A	-
Lead	N/A	N/A	-
Lithium	N/A	N/A	-
Mercury	N/A	N/A	-
Molybdenum	N/A	N/A	-
Selenium	N/A	N/A	-
Thallium	N/A	N/A	-
Total Radium	N/A	N/A	-
Exceedances Total	-	-	-

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The inactive bottom ash pond was intended to be closed in place per the CCR Rule prior to April 17, 2018 and therefore be exempt from the detection and assessment monitoring requirements. However, there is no longer an exemption for inactive CCR surface impoundments and a 547-day extension was granted by the USEPA.

Chesterfield
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	9	28	N/A	37
Calcium	3	15	N/A	18
Chloride	6	8	N/A	14
Fluoride	4	5	N/A	9
pH	2	6	N/A	8
Sulfate	7	29	N/A	36
Total Dissolved Solids	3	16	N/A	19
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	5	3	8
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	16	17	33
Fluoride	N/A	-	-	-
Lead	N/A	0 (1)	-	-
Lithium	N/A	5 (4)	6 (2)	11
Mercury	N/A	-	-	-
Molybdenum	N/A	0 (1)	0 (4)	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	4	4	8
Exceedances Total	34	137	30	201

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event at each of the CCR storage units on site (LAP, UAP, and the landfill).

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Chesterfield - Lower Ash Pond
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	9	10	N/A	19
Calcium	3	2	N/A	5
Chloride	6	5	N/A	11
Fluoride	4	3	N/A	7
pH	2	1	N/A	3
Sulfate	7	7	N/A	14
Total Dissolved Solids	3	1	N/A	4
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	1	1	2
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	3	4	7
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	0 (1)	0 (1)	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	1	-	1
Exceedances Total	34	34	5	73

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from fourteen (14) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Chesterfield - Upper Aash Pond Columbia
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances Total
	2017	2018	2018 2nd Semi-Annual	
Appendix III Constituents				
Boron	N/A	13	N/A	13
Calcium	N/A	11	N/A	11
Chloride	N/A	2	N/A	2
Fluoride	N/A	1	N/A	1
pH	N/A	2	N/A	2
Sulfate	N/A	13	N/A	13
Total Dissolved Solids	N/A	11	N/A	11
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	3	2	5
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	9	9	18
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	2 (1)	3 (2)	5
Mercury	N/A	-	-	-
Molybdenum	N/A	-	0 (2)	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	2	3	5
Exceedances Total	-	69	17	86

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from fourteen (14) downgradient wells.

*"The data for the initial Detection Monitoring Program compliance sampling event are being evaluated against the calculated background concentrations for the Unit. The results from those evaluations will be presented in the 2018 annual groundwater monitoring and corrective action report." The 2018 Report does not present the initial Detection Monitoring Program compliance sampling event.
<https://www.dominionenergy.com/company/community/environment/reports-and-performance/ccr-rule-compliance-data-and-information>

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Chesterfield - Upper Ash Pond Potomac
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	N/A	5	N/A	5
Calcium	N/A	2	N/A	2
Chloride	N/A	1	N/A	1
Fluoride	N/A	1	N/A	1
pH	N/A	3	N/A	3
Sulfate	N/A	9	N/A	9
Total Dissolved Solids	N/A	4	N/A	4
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	1	-	1
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	4	4	8
Fluoride	N/A	-	-	-
Lead	N/A	0 (1)	-	-
Lithium	N/A	3	3	6
Mercury	N/A	-	-	-
Molybdenum	N/A	0 (1)	0 (1)	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	1	1	2
Exceedances Total	-	34	8	42

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from nine (9) downgradient wells.

*"The data for the initial Detection Monitoring Program compliance sampling event are being evaluated against the calculated background concentrations for the Unit. The results from those evaluations will be presented in the 2018 annual groundwater monitoring and corrective action report." The 2018 Report does not present the initial Detection Monitoring Program compliance sampling event.
<https://www.dominionenergy.com/company/community/environment/reports-and-performance/ccr-rule-compliance-data-and-information>

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Chesterfield - Landfill
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	-	-	-	-
Calcium	-	-	-	-
Chloride	-	-	-	-
Fluoride	-	-	-	-
pH	-	-	-	-
Sulfate	-	-	-	-
Total Dissolved Solids	-	-	-	-
Appendix IV Constituents				
Antimony	-	-	-	-
Arsenic	-	-	-	-
Barium	-	-	-	-
Beryllium	-	-	-	-
Cadmium	-	-	-	-
Chromium	-	-	-	-
Cobalt	-	-	-	-
Fluoride	-	-	-	-
Lead	-	-	-	-
Lithium	-	-	-	-
Mercury	-	-	-	-
Molybdenum	-	-	-	-
Selenium	-	-	-	-
Thallium	-	-	-	-
Total Radium	-	-	-	-
Exceedances Total	-	-	-	-

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from eight (8) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Clover
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	2	2	3	7
Calcium	6	6	6	18
Chloride	4	5	6	15
Fluoride	-	-	-	-
pH	2	-	-	2
Sulfate	8	7	8	23
Total Dissolved Solids	5	4	5	14
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	27	24	28	79

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event at each of the CCR storage units on site (sedimentation basins and the landfill).

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Clover - Sludge Sedimentation Basins
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	2	2	2	6
Calcium	4	4	4	12
Chloride	3	3	3	9
Fluoride	-	-	-	-
pH	-	-	-	-
Sulfate	4	3	4	11
Total Dissolved Solids	4	4	4	12
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	17	16	17	50

Notes:

*Parentheses (Virginia GWPS Exeedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from five (5) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Clover - Landfill
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	-	-	1	1
Calcium	2	2	2	6
Chloride	1	2	3	6
Fluoride	-	-	-	-
pH	2	-	-	2
Sulfate	4	4	4	12
Total Dissolved Solids	1	-	1	2
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	0 (1)	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	10	8	11	29

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from five (5) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Mount Storm
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	3	2	N/A	5
Calcium	-	-	N/A	-
Chloride	3	2	N/A	5
Fluoride	2	4	N/A	6
pH	5	6	N/A	11
Sulfate	2	1	N/A	3
Total Dissolved Solids	-	-	N/A	-
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	2	2
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	1	1
Fluoride	N/A	1	-	1
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	1	-	1
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	15	17	3	35

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event at each of the CCR storage units on site (sedimentation basins and the landfill).

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents with no MCL and for which a health-based GWPS has been adopted under the August 29, 2018, Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Mount Storm - Phase A Landfill
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	-	-	N/A	-
Calcium	-	-	N/A	-
Chloride	2	2	N/A	4
Fluoride	-	-	N/A	-
pH	1	1	N/A	2
Sulfate	-	-	N/A	-
Total Dissolved Solids	-	-	N/A	-
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	3	3	-	6

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from four (4) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents with no MCL and for which a health-based GWPS has been adopted under the August 29, 2018, Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Mount Storm - Phase B Landfill
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	-	-	N/A	-
Calcium	-	-	N/A	-
Chloride	1	-	N/A	1
Fluoride	1	1	N/A	2
pH	4	4	N/A	8
Sulfate	2	1	N/A	3
Total Dissolved Solids	-	-	N/A	-
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	8	6	-	14

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from six (6) downgradient wells.

- *1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.
- 2. For constituents with no MCL and for which a health-based GWPS has been adopted under the August 29, 2018, Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.
- 3. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Mount Storm - Low Volume Waste Settling Ponds
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	3	2	N/A	5
Calcium	-	-	N/A	-
Chloride	-	-	N/A	-
Fluoride	1	3	N/A	4
pH	-	1	N/A	1
Sulfate	-	-	N/A	-
Total Dissolved Solids	-	-	N/A	-
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	2	2
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	1	1
Fluoride	N/A	1	-	1
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	1	-	1
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	4	8	3	15

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from five (5) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents with no MCL and for which a health-based GWPS has been adopted under the August 29, 2018, Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Possum Point - Pond D
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	5	2	2	9
Calcium	5	5	5	15
Chloride	6	6	6	18
Fluoride	-	-	-	-
pH	-	-	-	-
Sulfate	6	6	6	18
Total Dissolved Solids	6	6	6	18
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	0 (1)	1 (2)	1
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	0 (2)	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	28	25	26	79

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from six (6) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Virginia City Hybrid Energy Center - Curley Hollow Solid Waste Management Facility
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	1	1	1	3
Calcium	3	3	3	9
Chloride	-	-	-	-
Fluoride	1	1	1	3
pH	3	1	1	5
Sulfate	3	3	3	9
Total Dissolved Solids	2	2	2	6
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	-	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	1 (2)	2	3
Mercury	N/A	-	-	-
Molybdenum	N/A	-	-	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	13	12	13	38

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

*The annual data is from a singular sampling event and was collected from four (4) downgradient wells.

*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.

Yorktown - Industrial Landfill
No. of CCR Rule Groundwater Monitoring Exceedances by Constituent

Parameters	Annual Report		Notification	Exceedances
	2017	2018	2018 2nd Semi-Annual	Total
Appendix III Constituents				
Boron	3	1	1	5
Calcium	3	2	2	7
Chloride	1	1	-	2
Fluoride	2	-	1	3
pH	-	-	-	-
Sulfate	4	3	3	10
Total Dissolved Solids	3	4	2	9
Appendix IV Constituents				
Antimony	N/A	-	-	-
Arsenic	N/A	-	-	-
Barium	N/A	-	-	-
Beryllium	N/A	-	-	-
Cadmium	N/A	-	-	-
Chromium	N/A	-	-	-
Cobalt	N/A	0 (1)	-	-
Fluoride	N/A	-	-	-
Lead	N/A	-	-	-
Lithium	N/A	-	-	-
Mercury	N/A	-	-	-
Molybdenum	N/A	-	0 (1)	-
Selenium	N/A	-	-	-
Thallium	N/A	-	-	-
Total Radium	N/A	-	-	-
Exceedances Total	16	11	9	36

Notes:

*Parentheses (Virginia GWPS Exceedance)

*Data compiled from Dominion responses to Public Staff Data Request 3-11, dated April 18, 2019.

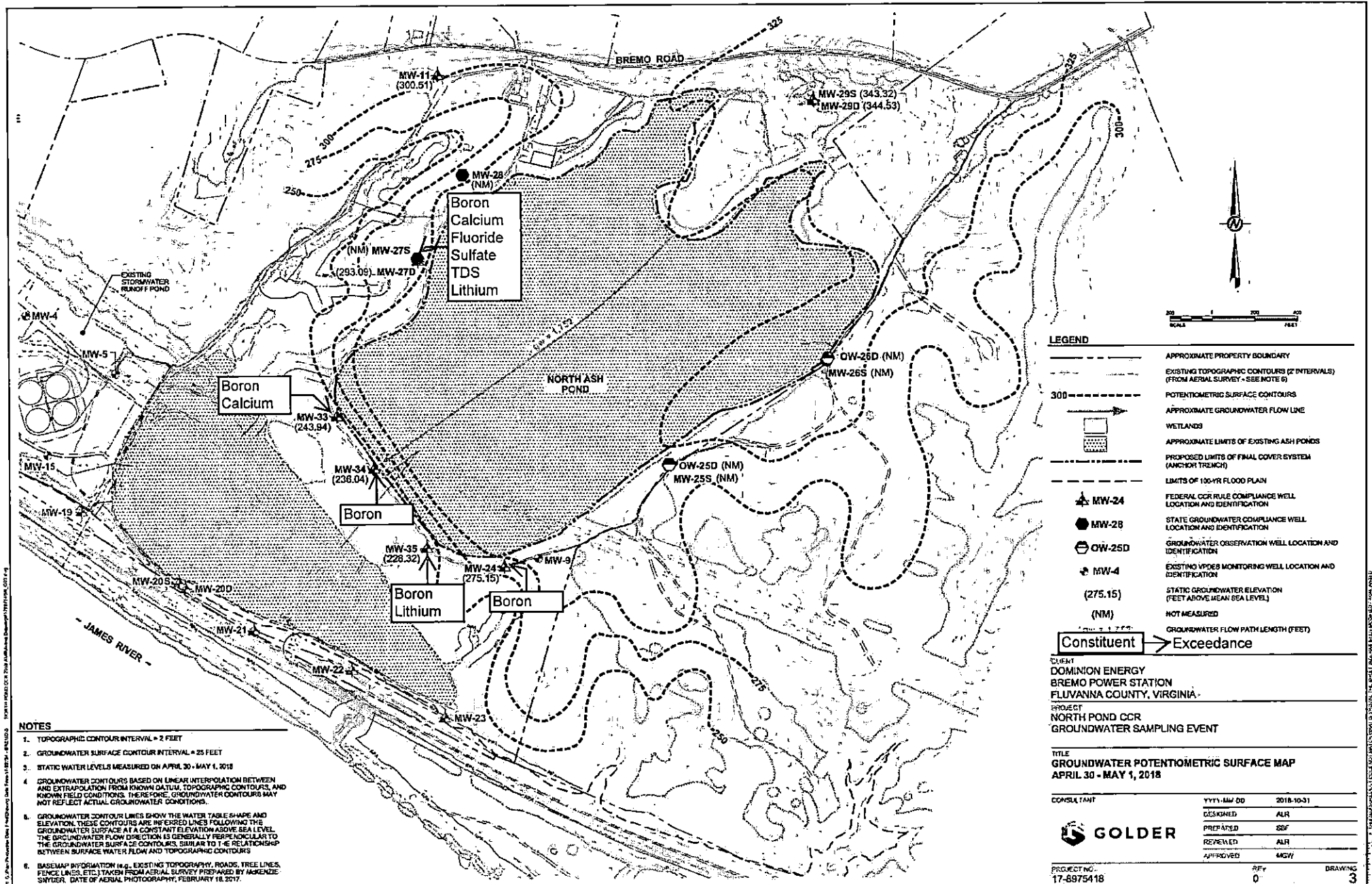
*The annual data is from a singular sampling event and was collected from seven (7) downgradient wells.

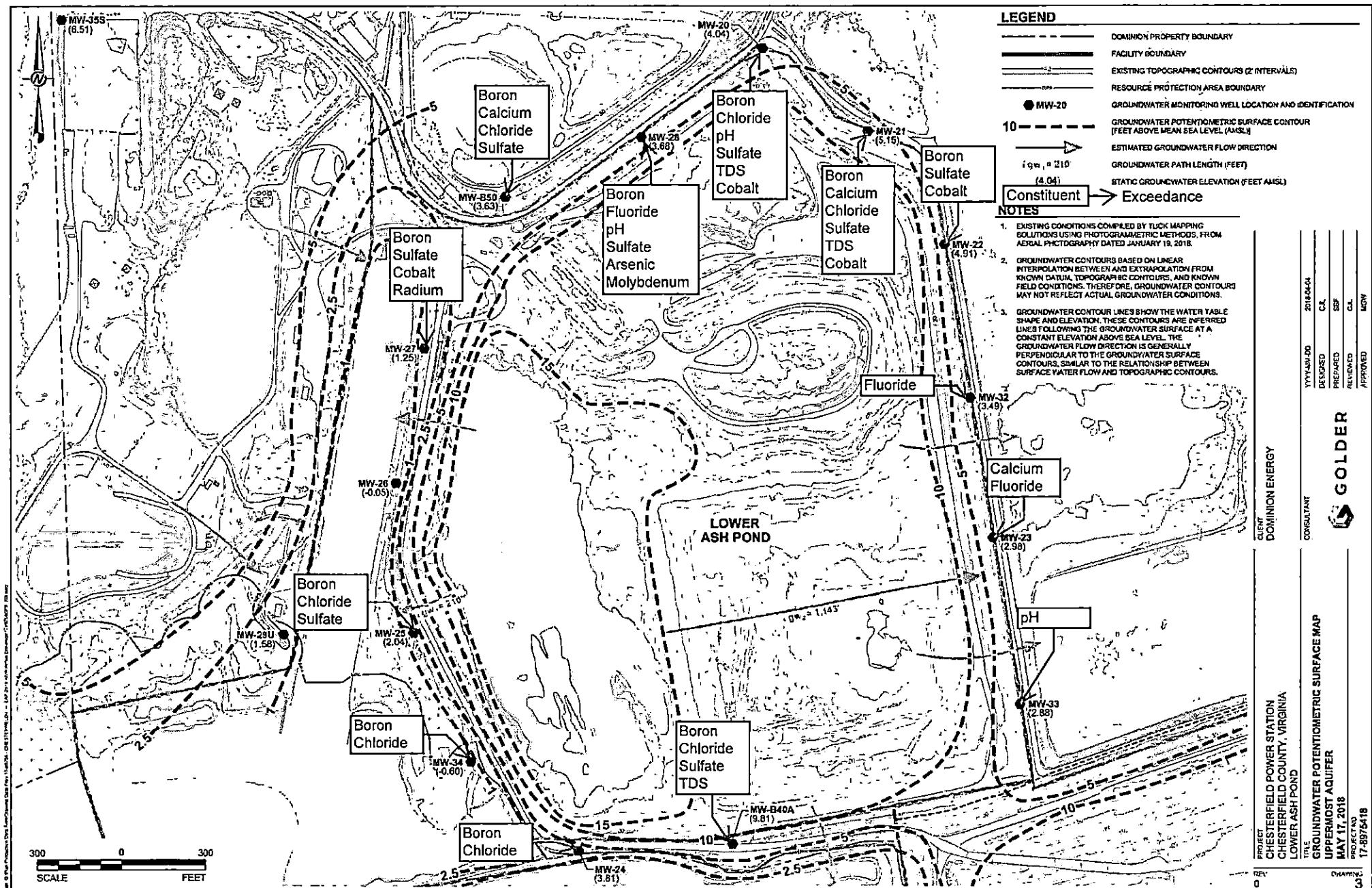
*1. For constituents for which a Maximum Contaminant Level (MCL) has been established, the MCL was used.

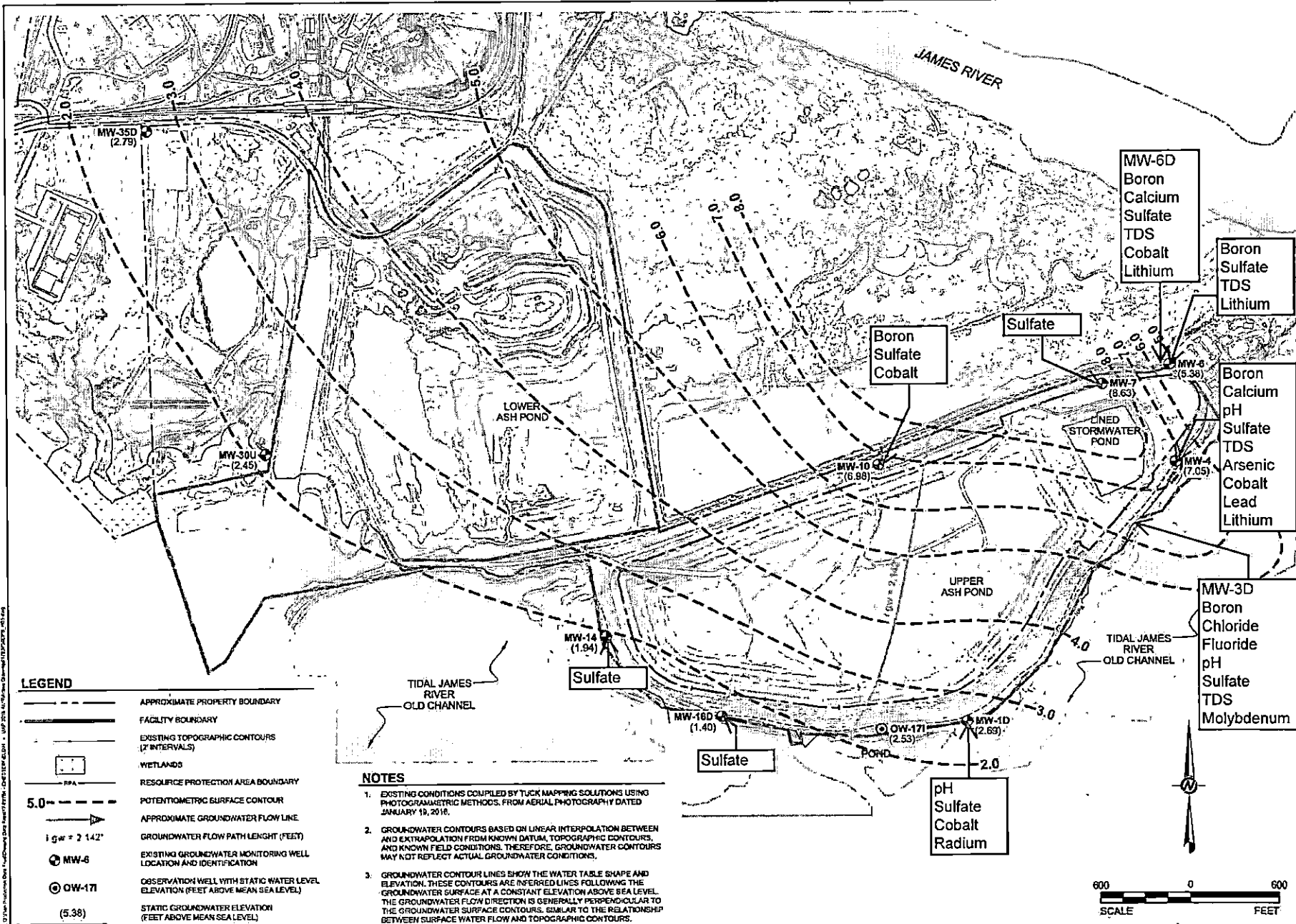
2. For constituents for which a health-based GWPS has been adopted under the August 29, 2018 Phase 1, Part 1 amendment to the CCR Rule, the health-based GWPS was used for the Federal CCR Rule GWPS.

3. Under 9VAC20-81-800, for constituents for which an MCL has not been established, the background concentration for the constituent was used for GWPS. Note that Virginia CCR site-specific background values were calculated using existing groundwater data collected for the Solid Waste Permit from February 2016 through August 2017 along with CCR background data collected during the same period.

4. For constituents for which the background level is higher than the MCL or health-based GWPS, the background concentration was used for GWPS.







LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- FACILITY BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS)
- WETLANDS
- RESOURCE PROTECTION AREA BOUNDARY
- POTENTIOMETRIC SURFACE CONTOUR
- APPROXIMATE GROUNDWATER FLOW LINE
- GROUNDWATER FLOW PATH LENGTH (FEET)
- EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
- OBSERVATION WELL WITH STATIC WATER LEVEL ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)

NOTES

- EXISTING CONDITIONS COMPILED BY TUCK MAPPING SOLUTIONS USING PHOTOGRAMMETRIC METHODS, FROM AERIAL PHOTOGRAPHY DATED JANUARY 19, 2016.
- GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
- GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

Constituent → Exceedance

CLIENT
DOMINION ENERGY

DATE	2018.04.02
DESIGNED	DMD
PREPARED	SMF
REVIEWED	CA
APPROVED	BMW

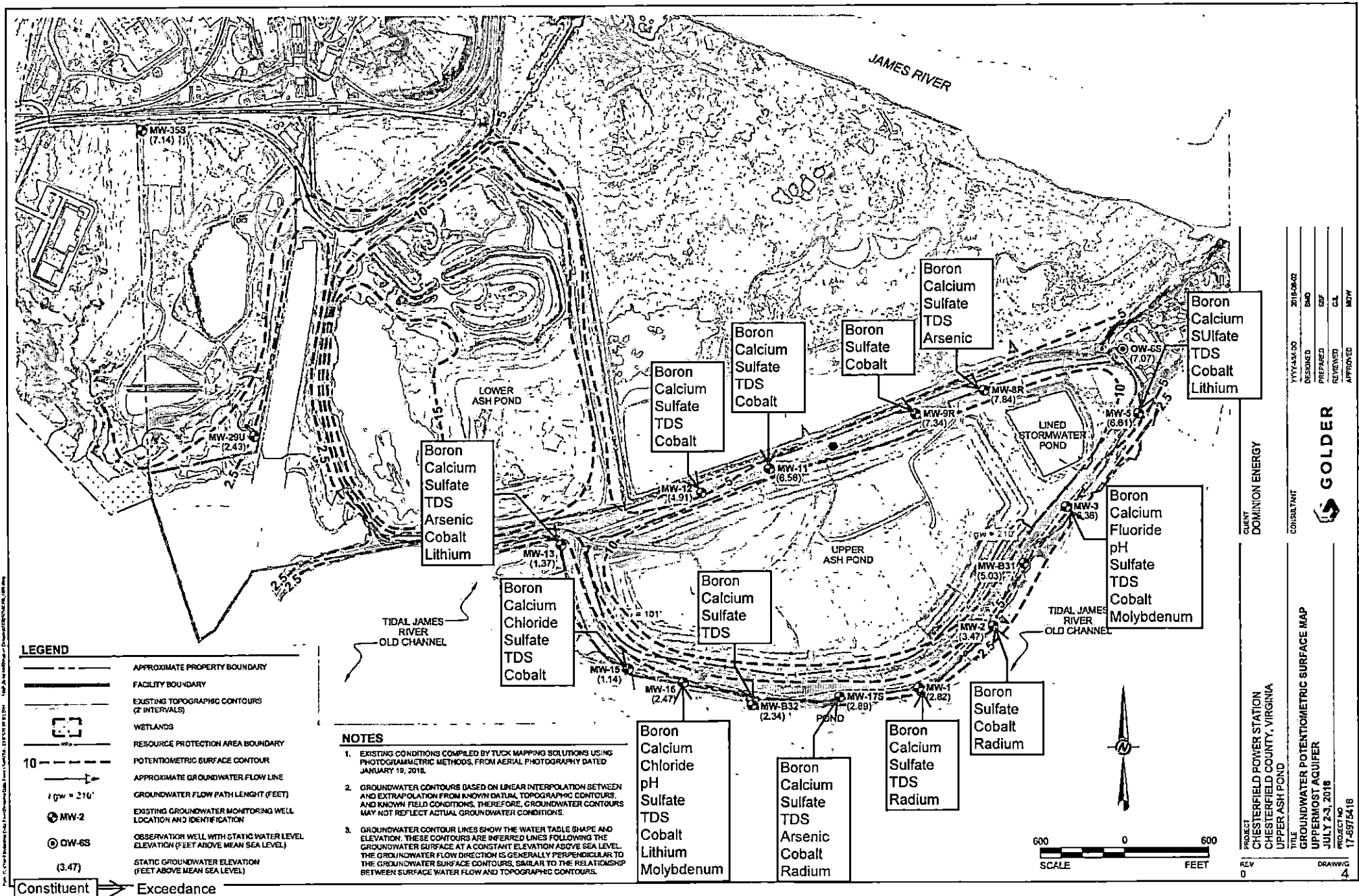
GOLDER

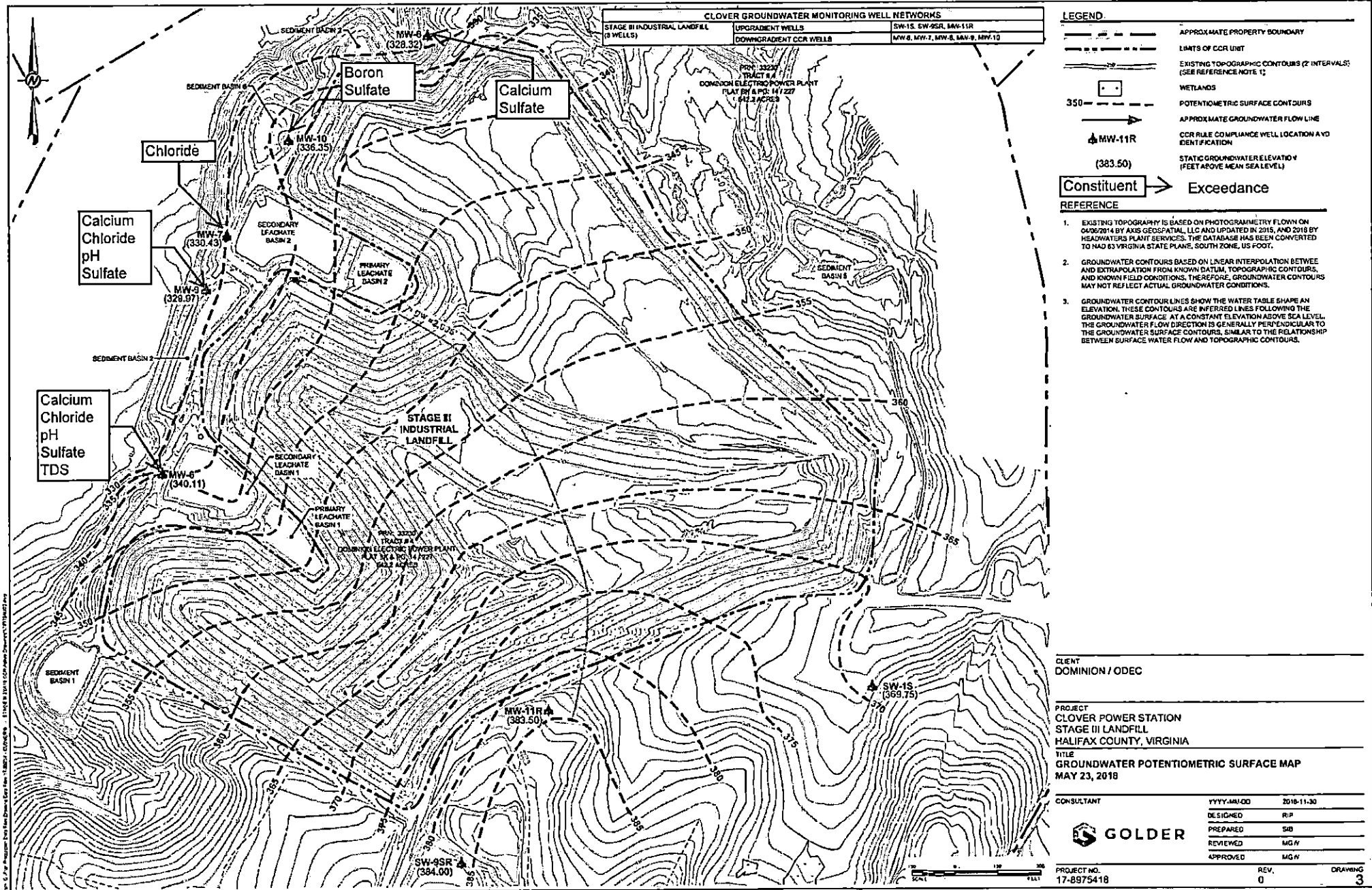
PROJECT
CHESTERFIELD POWER STATION
CHESTERFIELD COUNTY, VIRGINIA
UPPER ASH POND

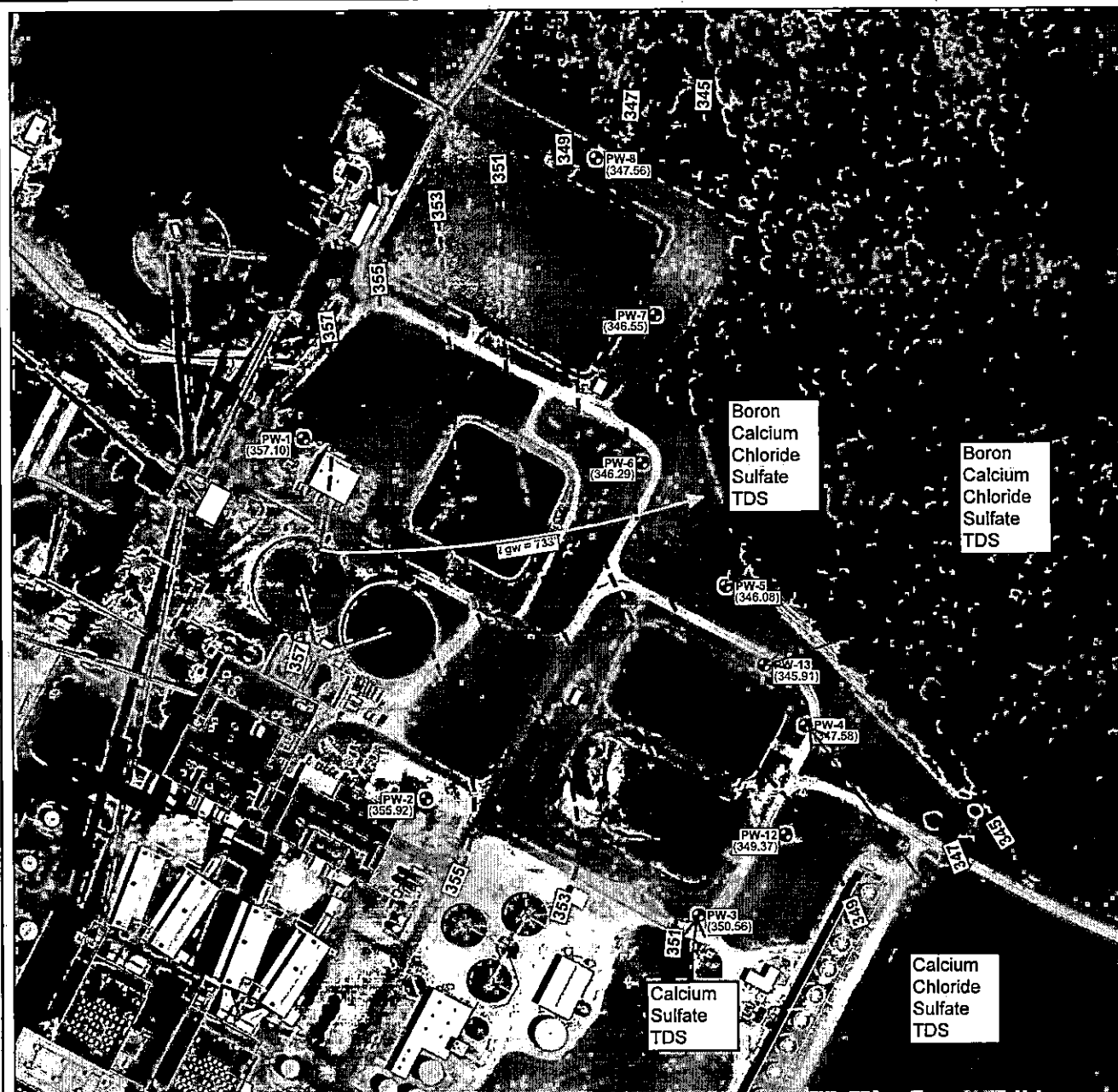
TITLE
GROUNDWATER POTENTIOMETRIC SURFACE MAP
POTOMAC AQUIFER
JULY 2, 2018

PROJECT NO.
17-8975418

DRAWING
5







LEGEND

349 — — — — — POTENTIOMETRIC SURFACE CONTOUR

→ APPROXIMATE GROUNDWATER FLOW LINE

$L_{gw} = 733'$ GROUNDWATER FLOW PATH LENGTH (FEET)

● PW-13 EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION (SHALLOW AQUIFER)

(345.91) STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)

Constituent → Exceedance

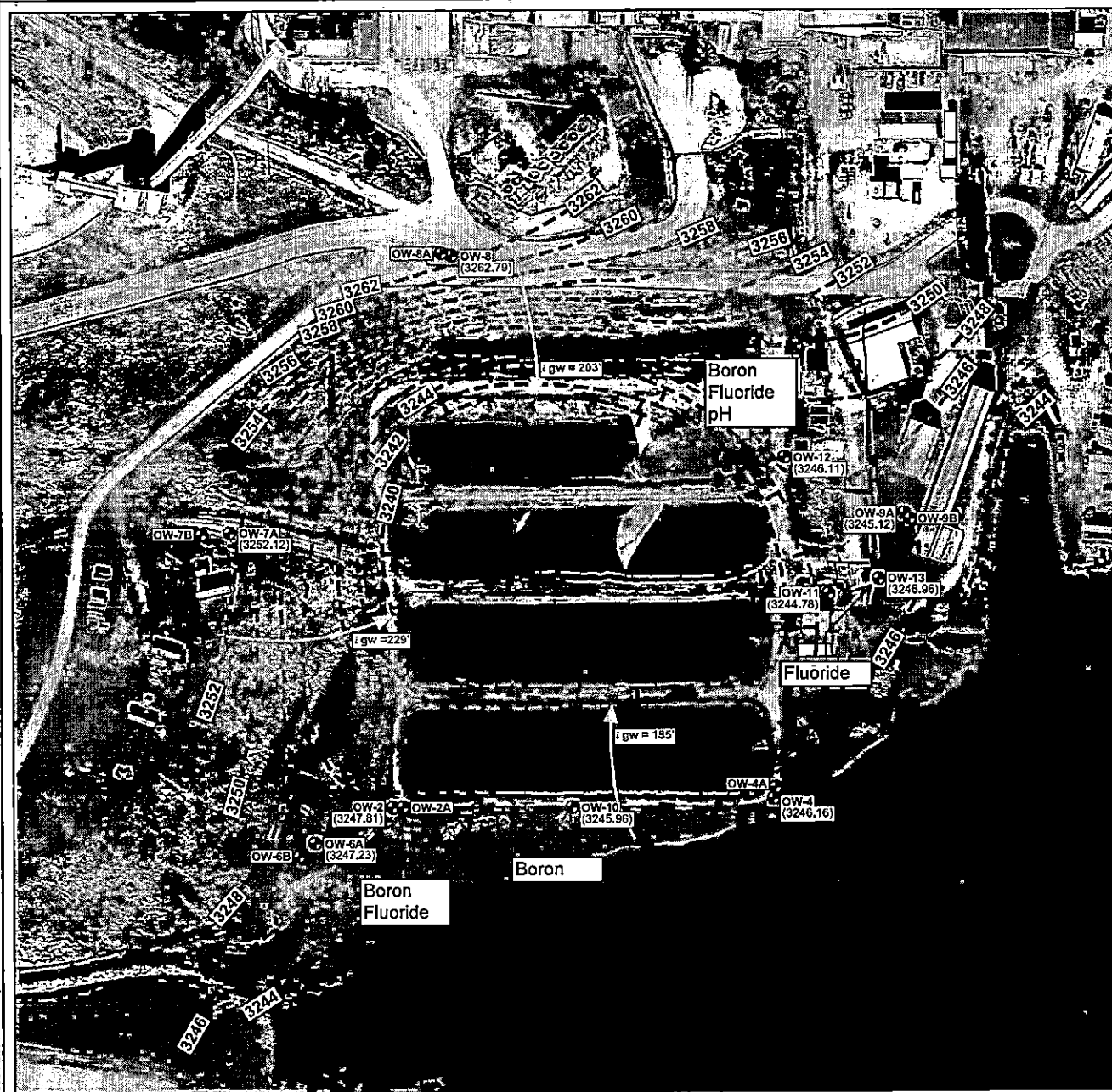
- REFERENCE**
1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO ON 03/22/2018. MAP DATA BY: GOOGLE, IMAGERY DATE: 09/13/2018
 2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
 3. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRIED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

CLIENT	DOMINION ENERGY
CONSULTANT	YVY-ARND 2018-1-13
	DESIGNED RJP
	PREPARED SJB
	REVIEWED AGW
	APPROVED LGW



PROJECT	CLOVER POWER STATION SLUDGE SEDIMENTATION PONDS
TITLE	POTENTIOMETRIC SURFACE MAP JUNE 19, 2018
PROJECT NO.	17-0375418

REV. 0
 FIGURE 4



LEGEND

- 3250 ————— POTENTIOMETRIC SURFACE CONTOUR
- > APPROXIMATE GROUNDWATER FLOW LINE
- 1 gw = 256' GROUNDWATER FLOW PATH LENGTH (FEET)
- OW-9A EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION (SHALLOW AQUIFER)
- OW-9B EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION (DEEP AQUIFER)
- (3245.22) STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)

Constituent > Exceedance

REFERENCE

1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO ON 05/14/2018, MAP DATA BY: GOOGLE, IMAGERY DATE: 11/19/2013
2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
3. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

NOTES

1. SURFACE WATER ELEVATION = 3,244 FEET ABOVE MEAN SEA LEVEL.

CLIENT
DOMINION ENERGY

DESIGNED BY
YYK/AM/DO
CHECKED BY
MMW
PREPARED BY
ASR
REVIEWED BY
MMW
APPROVED BY
MMW

CONSULTANT
GOLDER

PROJECT
MOUNT STORM POWER STATION
LOW VOLUME WASTE SETTLING PONDS

TITLE
POTENTIOMETRIC SURFACE MAP
JUNE 4, 2018

PROJECT NO.
17-8975418

REV.
0

DRAWING
3



LEGEND

- APPROXIMATE LANDFILL BOUNDARY
- 3300 --- POTENTIOMETRIC SURFACE CONTOUR
- APPROXIMATE GROUNDWATER FLOW LINE
- $i_{gw} = 3,697'$ GROUNDWATER FLOW PATH LENGTH (FEET)
- MW-22 EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
- ★ MWFGDW3 EXISTING GROUNDWATER OBSERVATION WELL LOCATION AND IDENTIFICATION
- (3553.96) STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- (NM) NOT MEASURED
- Constituent → Exceedance

REFERENCE

1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO ON 05/14/2018. MAP DATA BY: GOOGLE, IMAGERY DATE: 11/19/2013
2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
3. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

CLIENT
DOMINION ENERGY

CONSULTANT



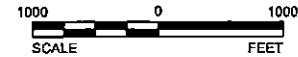
PROJECT
MOUNT STORM POWER STATION
PHASE A LANDFILL

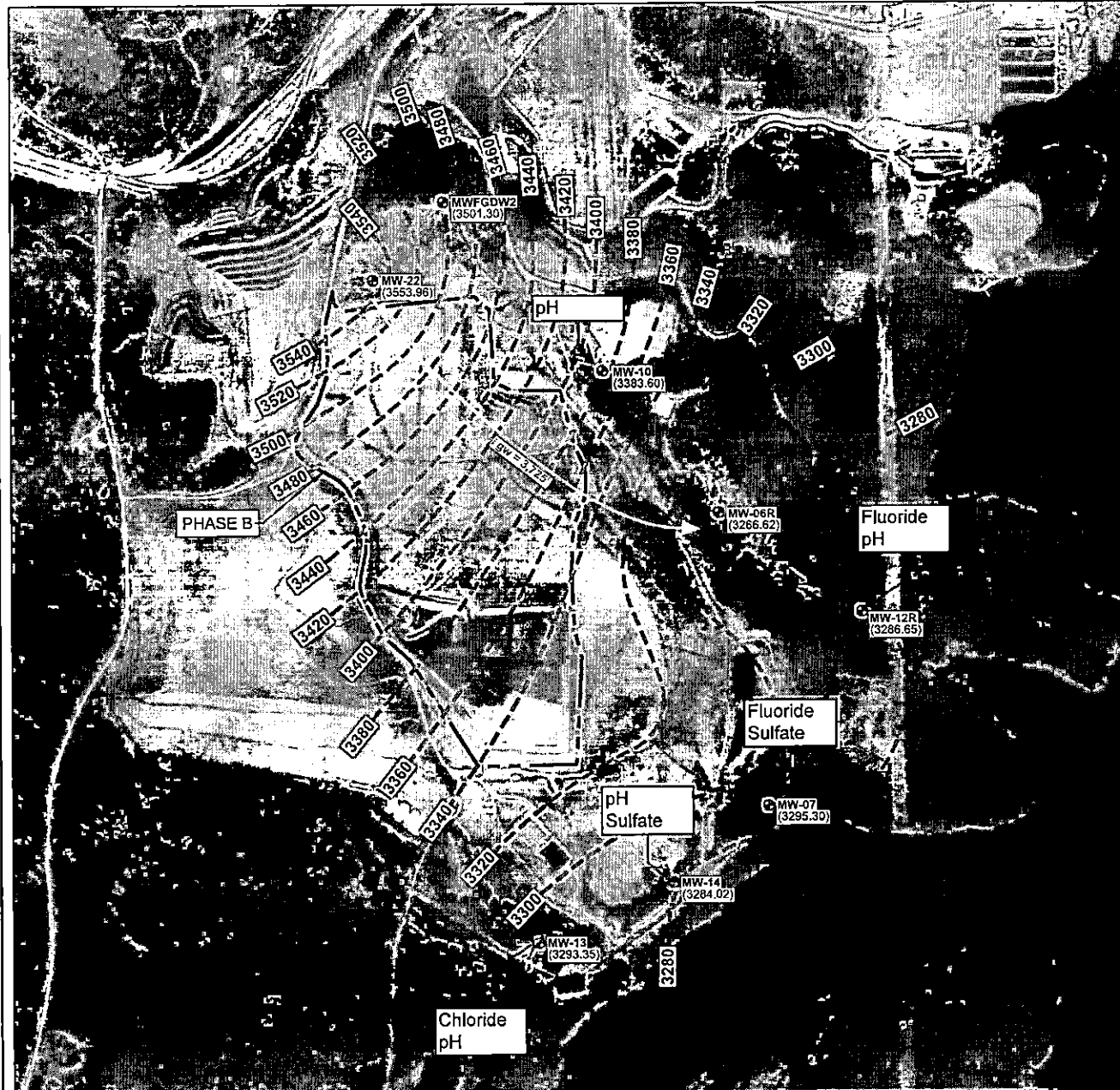
TITLE
POTENTIOMETRIC SURFACE MAP
UPPERMOST AQUIFER
JUNE 5, 2018

PROJECT NO.
17-0975418

REV.
0

DRAWING
3





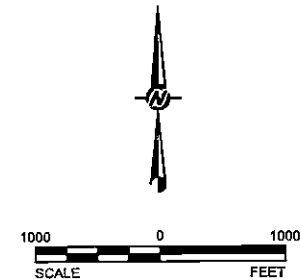
LEGEND	
---	APPROXIMATE LANDFILL BOUNDARY
---	POTENTIOMETRIC SURFACE CONTOUR
→	APPROXIMATE GROUNDWATER FLOW LINE
$q_{gw} = 3.813^*$	GROUNDWATER FLOW PATH LENGTH (FEET)
●	EXISTING GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
(3553.96)	STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
Constituent	Exceedance

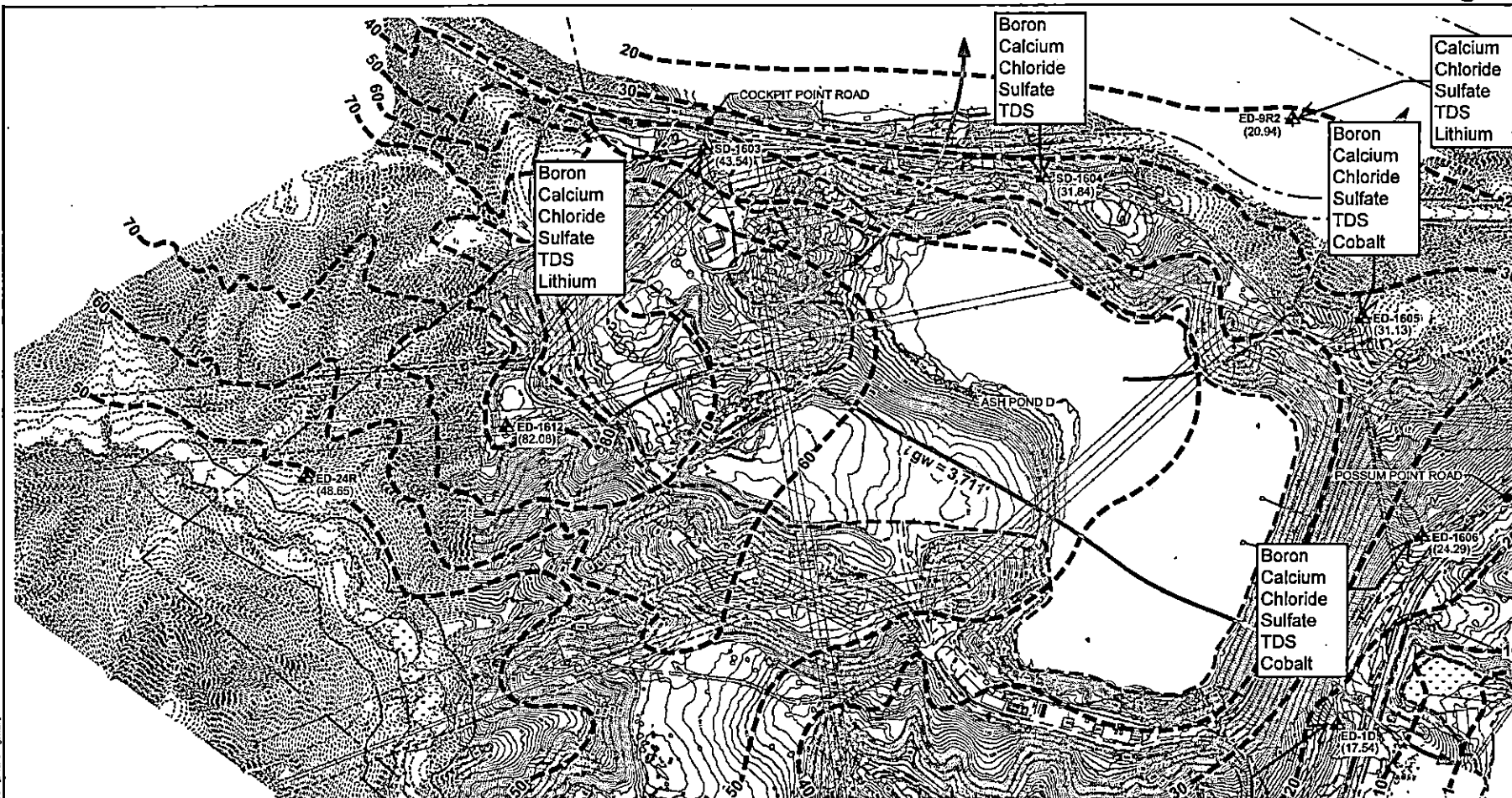
- REFERENCE**
1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO ON 05/14/2018. MAP DATA BY: GOOGLE, IMAGERY DATE: 11/19/2013
 2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
 3. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

CLIENT	DOMINION ENERGY
CONSULTANT	YONY-AHABO 2018-07-02
DESIGNED	RJP
PREPARED	SRP
REVIEWED	MCW
APPROVED	MCW

GOLDER

PROJECT	MOUNT STORM POWER STATION PHASE B LANDFILL
TITLE	POTENTIOMETRIC SURFACE MAP UPPERMOST AQUIFER JUNE 5, 2018
PROJECT NO.	17-8975418
REV.	0
DRAWING	3





LEGEND

- PROPERTY BOUNDARY
- EX TOPOGRAPHIC CONTOURS (2' INTERVALS)
- WETLAND
- RESOURCE PROTECTION AREA BOUNDARY
- 100-YEAR FLOOD PLAIN
- ASH POND LIMITS
- ★ ED-1606 (24.29)
- EX GROUNDWATER MONITORING WELL (POND D CCR)
- STATIC GROUNDWATER LEVEL ELEVATION (FEET ABOVE MEAN SEA LEVEL (AMSL))
- GROUNDWATER SURFACE CONTOUR (FEET AMSL)
- APPROXIMATE GROUNDWATER FLOW PATHWAY USED TO CALCULATE HYDRAULIC GRADIENT
- GROUNDWATER PATH LENGTH (FEET)

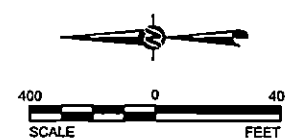
$i_{gw} = 3,711'$

Constituent → Exceedance

NOTES

1. EXISTING CONDITIONS COMPILED BY MCKENZIE SNYDER, INC., USING PHOTOGRAMMETRIC METHODS, FROM AERIAL PHOTOGRAPHY DATED APRIL 28, 2017.
2. STATIC WATER LEVELS MEASURED ON JUNE 18, 2018.
3. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.
4. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

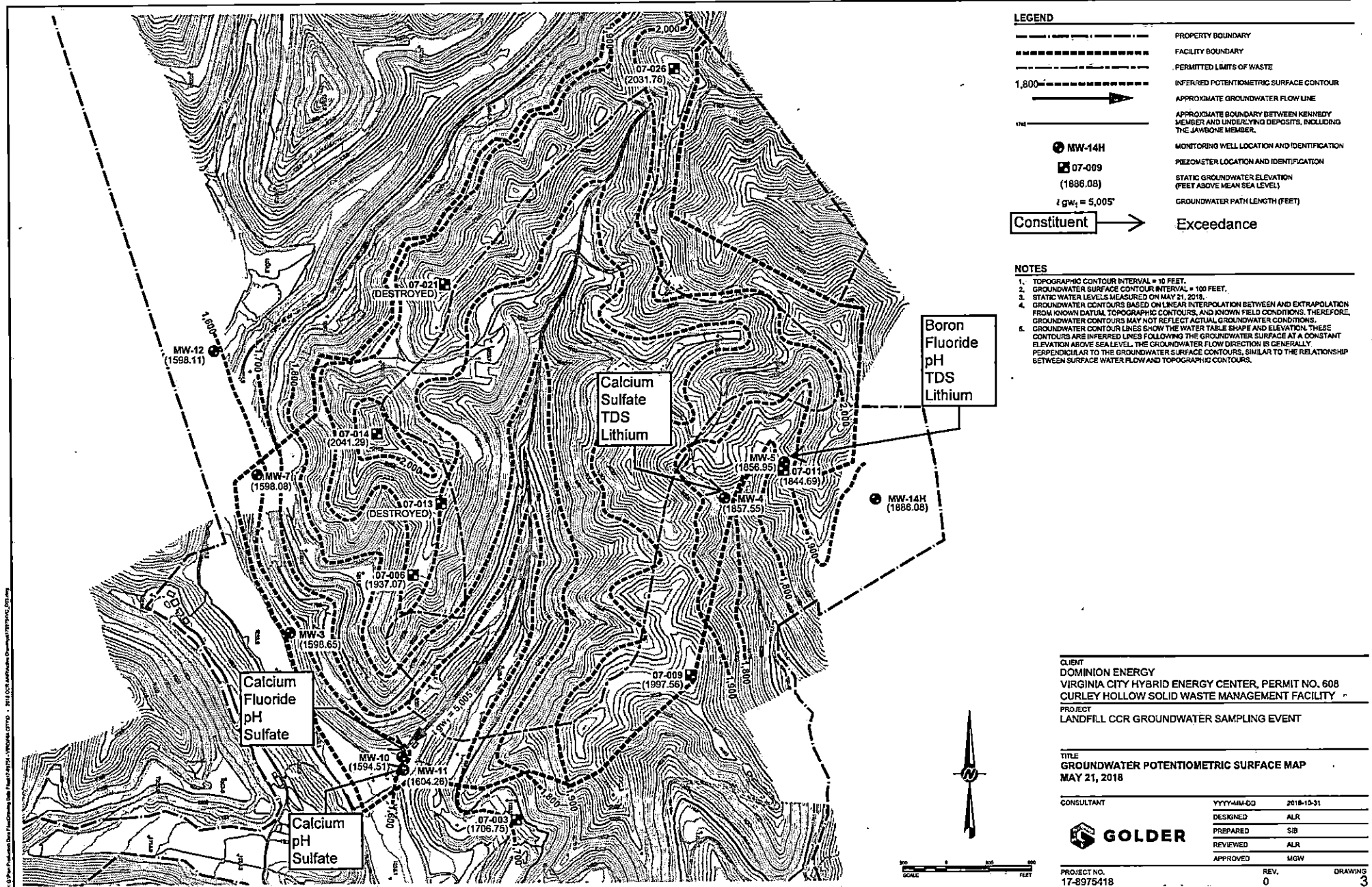
Boron
Chloride
Sulfate
TDS
Cobalt

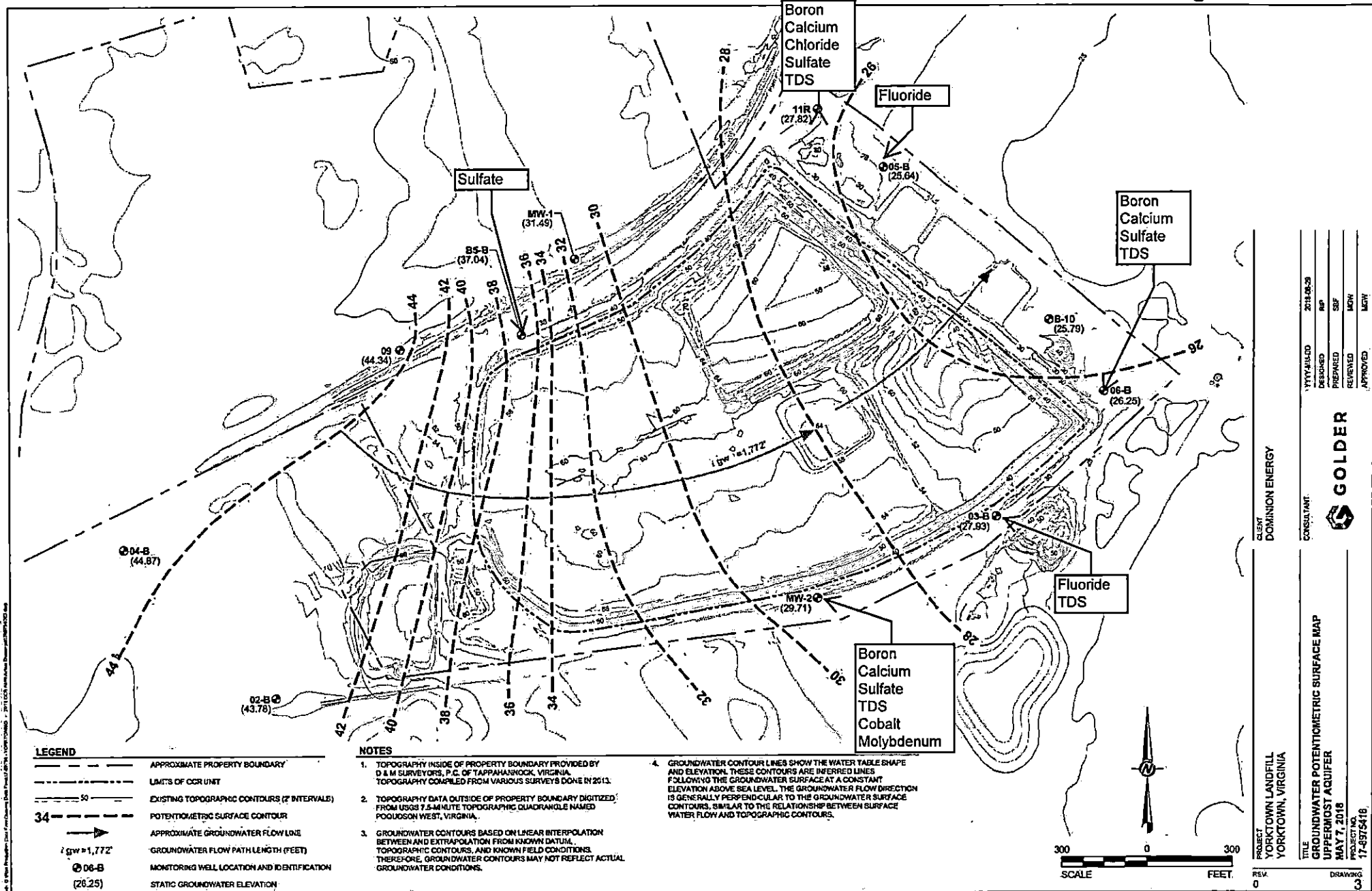


CLIENT	DOMINION ENERGY
CONSULTANT	YTY4-4M3D
DESIGNED	ALR
PREPARED	SRF
REVIEWED	ALR
APPROVED	MGW
DATE	2018-05-31
PROJECT	POSSUM POINT POWER STATION
ASH POND D CCR	
GROUNDWATER SAMPLING EVENT	
TITLE	GROUNDWATER SURFACE CONTOUR MAP
DATE	JUNE 18, 2018
PROJECT NO.	17-857/5418
REV.	0
DRAWING	3



1. IF THE INFORMATION DOES NOT MATCH THAT OF THE ORIGINAL, THE USER SHALL BE RESPONSIBLE FOR THE DISCREPANCY.





LEGEND

--- APPROXIMATE PROPERTY BOUNDARY
 --- LIMITS OF OCR UNIT
 --- 50' --- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS)
 --- 34 --- POTENTIOMETRIC SURFACE CONTOUR
 --- APPROXIMATE GROUNDWATER FLOW LINE
 $Q_{gw} = 1,772$
 ○ 06-B (26.25) MONITORING WELL LOCATION AND IDENTIFICATION
 --- STATIC GROUNDWATER ELEVATION

NOTES

1. TOPOGRAPHY INSIDE OF PROPERTY BOUNDARY PROVIDED BY D & M SURVEYORS, P.C. OF TAPPANHANNOCK, VIRGINIA. TOPOGRAPHY COMPILED FROM VARIOUS SURVEYS DONE IN 2013.

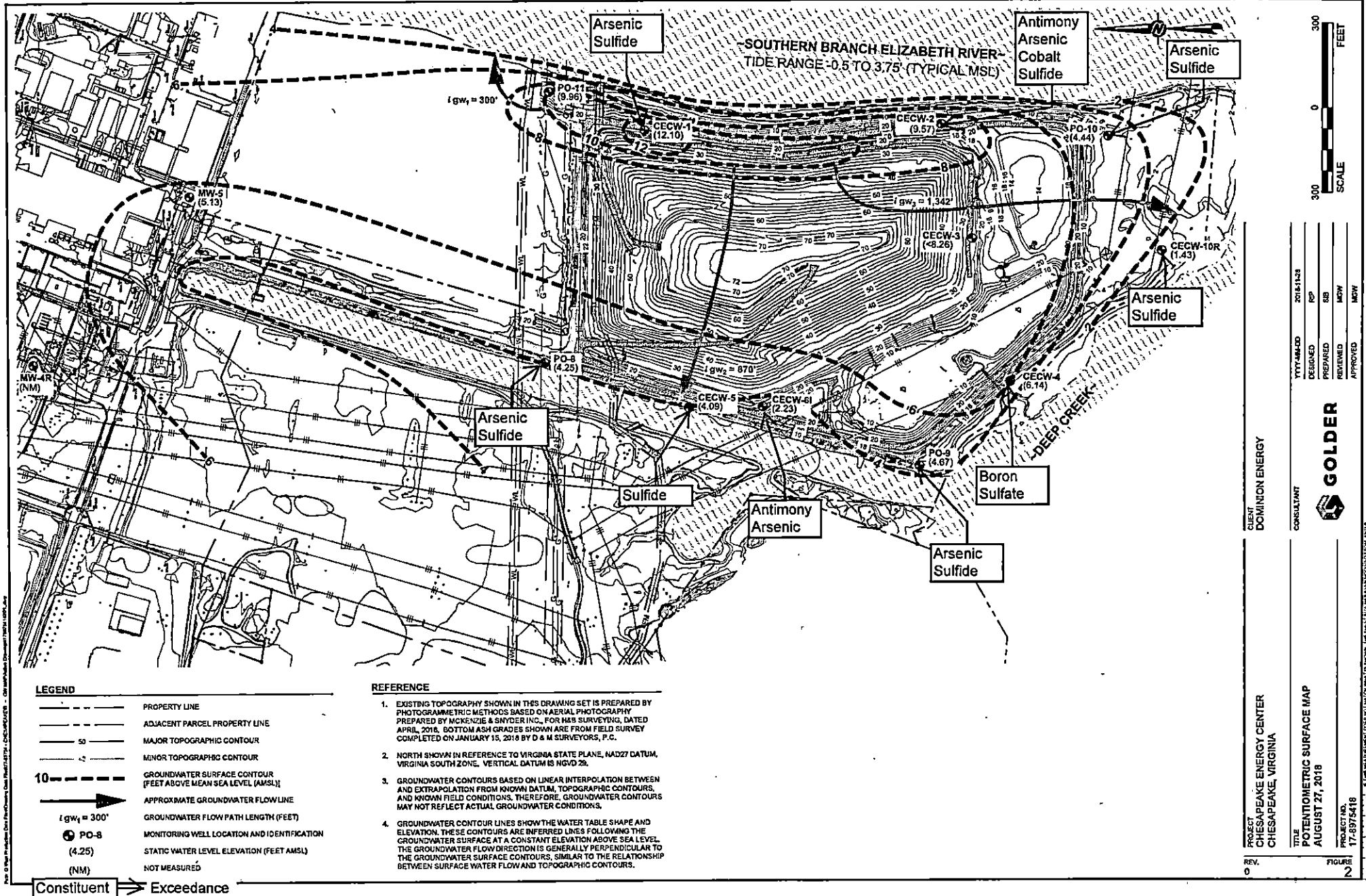
2. TOPOGRAPHY DATA OUTSIDE OF PROPERTY BOUNDARY DIGITIZED FROM USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE NAMED POQUOSON WEST, VIRGINIA.

3. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATUM, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS. THEREFORE, GROUNDWATER CONTOURS MAY NOT REFLECT ACTUAL GROUNDWATER CONDITIONS.

4. GROUNDWATER CONTOUR LINES SHOW THE WATER TABLE SHAPE AND ELEVATION. THESE CONTOURS ARE INFERRED LINES FOLLOWING THE GROUNDWATER SURFACE AT A CONSTANT ELEVATION ABOVE SEA LEVEL. THE GROUNDWATER FLOW DIRECTION IS GENERALLY PERPENDICULAR TO THE GROUNDWATER SURFACE CONTOURS, SIMILAR TO THE RELATIONSHIP BETWEEN SURFACE WATER FLOW AND TOPOGRAPHIC CONTOURS.

PROJECT YORKTOWN LANDFILL YORKTOWN, VIRGINIA	CLIENT DOMINION ENERGY	CONSULTANT GOLDER	PROJECT NO. 17-8975418
			TITLE GROUNDWATER POTENTIOMETRIC SURFACE MAP UPPERMOST AQUIFER
			DATE MAY 7, 2018
			REVISION 0
DRAWING 3	DESIGNED RSP	2018-05-29	YTYT-JUL-29
			PREPARED SRF
			REVIEWED MOW
			APPROVED MOW

Constituent → Exceedance



Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 42

The following response to Question No. 6 of Public Staff Data Request No. 42, dated May 7, 2019 has been prepared under my supervision:



Jason E. Williams
Director, Environmental Services
Dominion Energy Services, Inc.

Question No. 6:

In response to PS DR-3; Question 15, DENC states that "VEPCO understands the term 'seep' to mean a channelized flow of water emanating from the berm of an impoundments that does or has the potential to reach surface waters." Please identify, by plant and basin location, which discharges are authorized in NPDES permits, and which are not. Please include all engineered and non-engineered discharges, including all locations in which a pollutant is conveyed, in any manner, from an impoundment to waters of the United States or a water of the State.

- a. For the discharges not authorized by NPDES permits (including those for which permit applications are pending), please explain whether VEPCO contends they were or were not violations of NPDES permit requirements, or violations of Virginia's § 62.1-44.15 or West Virginia's § 22-11-6, and why.
- b. Please include whether the discharge was engineered or not.
- c. Please provide the date the discharge was first identified and, if applicable, the year the discharge was eliminated.

Response:

- a. The Company is not aware of any unauthorized or unpermitted discharges from its basins. Permitted discharges are reflected in the NPDES permits that were provided in response to Request 3-16.
- b. Not applicable.
- c. Not applicable.



VIA EMAIL

May 30, 2018

Mr. Jeremy Kazio
DEQ – Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060
Jeremy.Kazio@deq.virginia.gov

Re: **Chesterfield Power Station VPDES Permit No. VA0004146:**
Follow-up Notification Letter

Dear Mr. Kazio:

On May 11, 2018, Dominion Energy personnel observed a small area of apparent groundwater seepage visible along the shoreline south of the Upper Ash Pond located at the Chesterfield Power Station. Dominion Energy made a verbal notification to DEQ that day, and committed to perform additional investigation into the nature, source and cause of the seep. Following additional investigation and sampling, Dominion Energy made a second verbal notification of the seep to the Department on May 29, 2018. This letter is being provided as a follow-up written report of Dominion Energy's investigation.

1. Description of the nature and location of the observed seep: Chesterfield Power Station (Station) is a coal fired power generating station located at 500 Coxendale Road, Chester, Virginia. On May 11, 2018, Dominion Energy personnel observed a small (two-foot square) area of apparent groundwater seepage south of the Upper Ash Pond at the shoreline of the James River. The attached map shows the general area of the seep.

Following observation of the area, Dominion Energy collected a sample of the trickle flow from the seep. The sample was analyzed for total and dissolved coal combustion residuals (CCR) indicator parameters boron, chloride, fluoride, and sulfate. The results show concentrations above background levels, which appear to be consistent with previously observed groundwater conditions near the Upper Ash Pond in the vicinity of the seep. Dominion Energy did not observe any adverse environmental impacts in its investigation.

2. Cause of the observed seep: The exact cause of the seep remains under investigation.

3. Date on which the seep occurred: An area of apparent seepage was first observed and

reported by Dominion Energy personnel on May 11, 2018. Further investigation resulted in Dominion Energy providing a second verbal notification to DEQ on May 29, 2018 (a voice mail was left on May 25, 2018 after receipt of the validated laboratory results) that constituents present in the seep appear to be consistent with groundwater conditions near the Upper Ash Pond in the vicinity of the seep.

4. **Length of time that the seep continued:** The duration of the seep is unknown and is currently ongoing.
5. **Volume of the observed seep:** The exact volume of groundwater emerging through the seep, which presently appears as a trickle flow, is unknown at this time. Additional investigation will be conducted to determine the groundwater flow rate and volumes in this area.
6. **If the seep is continuing, how long is it expected to continue:** Further investigation is needed to determine the full nature and extent of the seep and options to address it.
7. **If the seep is continuing, what is the expected total volume of the discharge will be:** The total volume will be dependent on further characterization of the seep and the nature and timing of corrective action, but given the size of the observed trickle flow, it is not anticipated to be significant.
8. **Describe any steps planned or taken to reduce, eliminate and prevent a reoccurrence of the observed seep or any future seeps:**

In connection with pending DEQ Consent Order #7, Dominion Energy expects to prepare and implement plans to identify, characterize, and mitigate any observed groundwater seeps appearing along the James River shoreline at the Chesterfield Power Station. Additional characterization and potential corrective action of the subject seep could be incorporated in those plans or will otherwise be provided to DEQ as requested after follow-up discussions.

If you have any questions regarding this information, please contact Kelly Hicks, of Dominion Energy Environmental Services, at (804) 273-4903.

Mr. Jeremy Kazio
May 30, 2018
Page 3 of 3

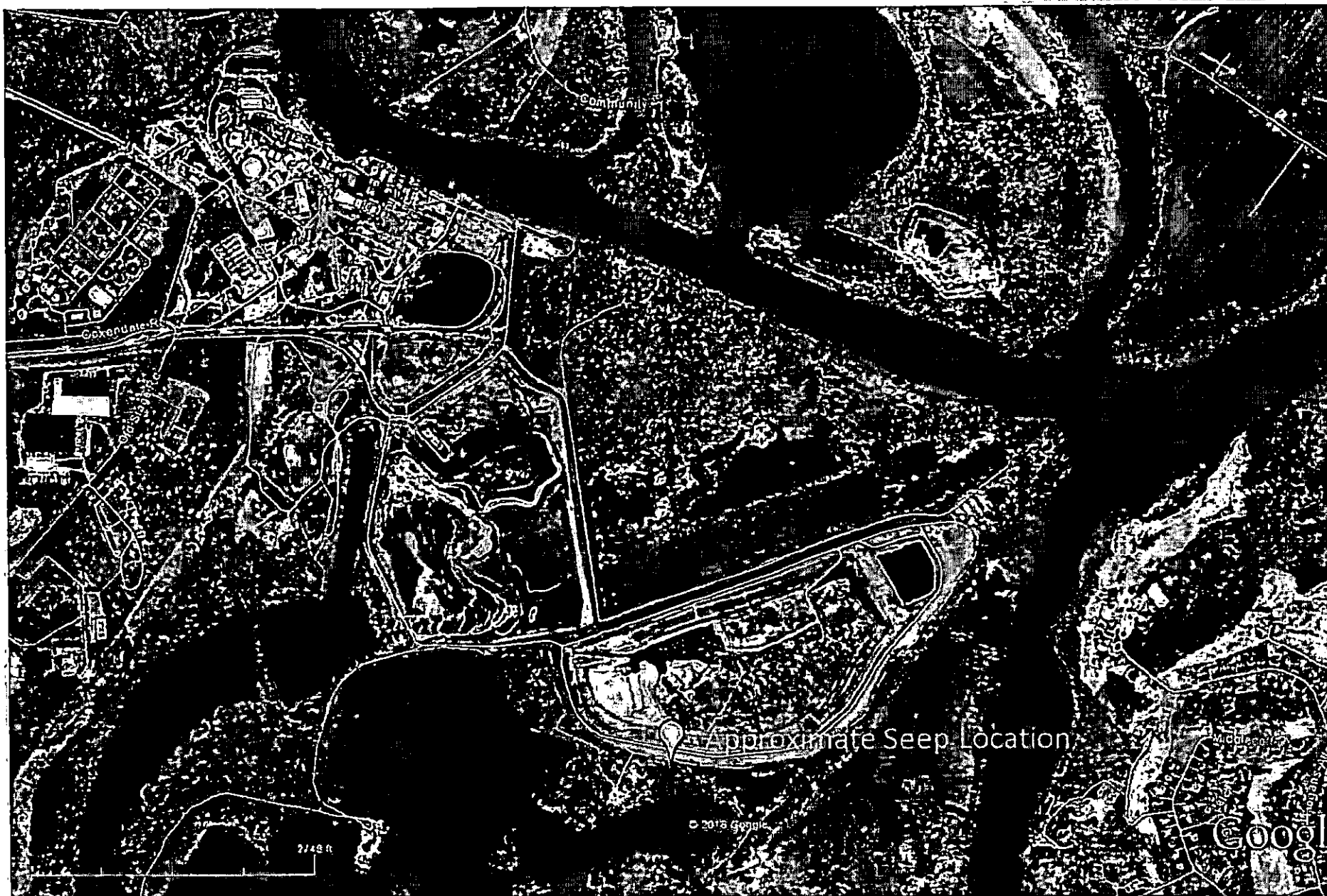
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

Sincerely,



Jason E. Williams
Director, Environmental

cc: Emilee Adamson (DEQ) Emilee.Adamson@deq.virginia.gov
Joseph Bryan (DEQ) Joseph.Bryan@deq.virginia.gov
Heather Deihls (DEQ) Heather.Deihls@deq.virginia.gov





BY EMAIL

August 28, 2018

Mr. Frank Lupini
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23219
Frank.Lupini@deg.virginia.gov

RE: **Dominion Energy Chesterfield Power Station VPDES Permit No. VA0004146:
Seep Mitigation Plan and Surface Water Monitoring Plan (Revision 2)**

Dear Mr. Lupini:

Comments from the Virginia Department of Environmental Quality (DEQ) on the Revised Seep Mitigation Plan (SMP) were received on August 23, 2018. In response to the two comments provided, the SMP has been revised as requested and is included as an attachment to this letter. A summary of DEQ comments are listed below followed by our responses in *italics font*.

1. Revise Section 3.2 (pg. 11) to indicate that submissions will be done electronically and provide a set schedule for these submissions (i.e. 10th of the month).

Section 3.2 has been revised as recommended.

2. Section 4.3.2 (pg. 13) states that "the annual review will quantify the success of the chosen mitigation method". The annual reviews should only contain what took place during each monitoring year and should not include any inferences about the success of the remedy. Please clarify that the success of the chosen mitigation method will be determined by the Remedy Effectiveness Evaluation notes in Section 4.3.3.

Section 4.3.2 has been revised as recommended.

There were no comments on the Surface Water Monitoring Plan; as such, that plan remains unchanged. If you have any questions, please contact me at (804) 273-2646.

Sincerely,

A handwritten signature in black ink that reads "Jason Williams".

Jason E. Williams
Director, Environmental

Enclosure

cc: Kyle Winter (DEQ) – kyle.winter@deg.virginia.gov
Emilee Adamson (DEQ) – emilee.adamson@deg.virginia.gov
Joseph Bryan (DEQ) – joseph.bryan@deg.virginia.gov

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.

Jason E. Williams

Name of Authorized Agent



Signature of Authorized Agent

Director, Environmental

Title

August 28, 2018

Date



www.haleyaldrich.com

**SEEP MITIGATION PLAN
CHESTERFIELD POWER STATION
CHESTER, VIRGINIA
VPDES PERMIT NO. VA0004146**

**by Haley & Aldrich, Inc.
Richmond, Virginia**

**for Virginia Electric and Power Company
Glen Allen, Virginia**

**File No. 130669
August 2018**



Executive Summary

Haley & Aldrich, Inc. (Haley & Aldrich) has been contracted by Virginia Electric and Power Company (Dominion Energy) to prepare a Seep Mitigation Plan (SMP) that presents a summary of the proposed remedial approach to mitigate certain observed groundwater seepage points along the James River adjacent to the Chesterfield Power Station (CPS) located in Chester, Virginia.

Findings from previous environmental investigations completed in Fall 2017 were summarized in a Site Characterization Report (SCR) submitted to the Virginia Department of Environmental Quality (VDEQ) in February 2018. The primary goals of the Site characterization program were to evaluate groundwater and surface water quality within the area of interest, assess groundwater contribution to the seepage, and evaluate applicable remedial alternatives if groundwater concentrations were observed to be greater than the calculated Site-specific background.

Based on the exceedance of Site-specific Preliminary Background Concentrations in seep samples and the groundwater upgradient of the seeps, a remedial alternatives evaluation was conducted. This SMP describes the evaluation of the following remedial alternatives:

Remedial Alternatives	
Alternative 1	Shallow and Deep Hydraulic Control with Low Permeability Barrier Near River
Alternative 1a	Shallow and Deep Hydraulic Control with Low Permeability Barrier Near River and Eastern Collection Trench
Alternative 2	Shallow and Deep Hydraulic Control Near River
Alternative 2a	Shallow and Deep Hydraulic Control Near River and Eastern Collection Trench
Alternative 3	Shallow and Deep Hydraulic Control with Low Permeability Barrier at Source and In-Situ Treatment Downgradient
Alternative 4	Shallow and Deep Hydraulic Control at Source and In-Situ Treatment Downgradient
Alternative 5	In-Situ Treatment Downgradient

Based on the evaluation of the technical advantages and disadvantages of the various alternatives, Alternative 2a: Shallow and Deep Hydraulic Control Near River and Eastern Collection Trench is considered to be the most applicable approach for this Site. This selected remedy will include a form of hydraulic control designed to capture impacted groundwater from both the shallow and deeper aquifers within the area of interest and eliminate constituents of concern (COC) from daylighting along the river bank. The final selection and design of the hydraulic control will depend upon constructability within an area of high utility concentration. As the plume is cut-off from entering the local groundwater flow system, the COCs will no longer be discharged via natural seepage points along the river. This method uses proven technology and is capable of preventing contaminant migration to the river.

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List of Acronyms/Abbreviations

bgs	below ground surface
cm/sec	centimeters per second
COC	constituents of concern
CPS	Chesterfield Power Station
DO	dissolved oxygen
Dominion Energy	Virginia Electric and Power Company
ft/yr	feet per year
gpm	gallons per minute
Haley & Aldrich	Haley & Aldrich, Inc.
K	Hydraulic conductivity
LPB	Low permeability barrier
MCL	maximum contaminant level
MDL	Method detection limit
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
msl	mean sea level
ND	non-detect
O&M	Operations and Maintenance
ORP	oxidation-reduction potential
PRB	passive reactive barrier
SCR	Site Characterization Report
SMP	Seep Mitigation Plan
TPH-DRO	total petroleum hydrocarbons – diesel range organics
TPH-GRO	total petroleum hydrocarbons – gasoline range organics
VDEQ	Virginia Department of Environmental Quality
VELAP	Virginia Environmental Laboratory Accreditation Program
VPDES	Virginia Pollutant Discharge Elimination System

1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) has been contracted by Virginia Electric and Power Company (Dominion Energy) to prepare a Seep Mitigation Plan (SMP) that presents a summary of the proposed remedial approach to mitigate the contaminant migration to the observed natural groundwater seepage points along the James River adjacent to the Chesterfield Power Station (CPS) located in Chester, Virginia.

The objectives of this SMP include:

- Identify remedial alternatives to mitigate the migration of Site-related constituents to the James River;
- Select a preferred remedial action and provide supporting rationale;
- Provide schedule for implementation of the preferred remedial action;
- Identify methods to monitor and quantify the success of the preferred remedial action implementation;
- Identify additional remedial actions if the preferred remedial action is ineffective; and
- Establish a reporting schedule to document the construction of the preferred remedial action, and to document the results of the proposed monitoring program to quantify the effectiveness of the remedial action after construction is complete.

1.1 SITE LOCATION

The Chesterfield Power Station is located at 500 Coxendale Road in Chester, Virginia along the James River (See Figure 1). Industrial and commercial properties are located to the west and southwest of the Site. The Site is bordered to the east by Henricus Historical Park and to the north by the James River. Surrounding lands to the east and north of the Station are currently wooded, undeveloped, and are owned by Dominion Energy. The Station consists of four coal-fired units and two combined-cycle natural gas units with a combined capacity of approximately 1,700 megawatts. This report focuses on the northeastern corner of the Site (See Figure 2).

1.2 SEEP DESCRIPTION

In September 2017, the Virginia Department of Environmental Quality (VDEQ) contacted Dominion Energy to report reddish-orange seepage observed daylighting along the riprap located on the banks of the James River along the northeast corner of the Station. The reddish-orange discoloration was observed to occur as a solid, scale-like deposit on rip-rap and substrate presumably caused by the oxidation of dissolved iron in the seepage water. Dominion Energy immediately surveyed the banks and initiated an investigation. The area of iron staining ranged from just east of the discharge tunnel eastward to the corner of the property just west of the Dutch Gap public boat ramp (See Figure 2).

1.3 SUMMARY OF FIELD ACTIVITIES

Site characterization activities were conducted in phases to identify potential contaminants associated with the seeps as described in the Site Characterization Report (SCR) submitted to the VDEQ in February

2018. Additional investigations were conducted subsequent to the submittal of the SCR to support the remedial design. A summary of Site characterization activities is as follows:

1.3.1 April 2018

Piezometer and Well Installation

Piezometers and wells were installed to collect the necessary data to better understand the hydrogeological regime, to delineate the source of contamination, and to evaluate remedial options. Four piezometers (designated PZ-1 through PZ-4) were installed along the banks of the James River. One well couplet (CP-MW-8 series) was installed at the southeast corner of Coxendale Road and the facility entrance road and one well couplet (CP-MW-9 series) was installed inside the facility at the southwest corner of the coal pile. The shallow wells are designated with an "S"; the deeper wells are designated with a "D".

The locations of these explorations are shown on Figure 2. Well construction details for all wells installed to date are provided in Table 1. Well installation reports are provided in Appendix A.

Groundwater Sampling

Groundwater samples were collected from the four newly-installed wells (CP-MW-8 series and CP-MW-9 series) and PZ-2. Stabilization parameters (temperature, pH, conductivity, oxidation reduction potential [ORP], dissolved oxygen [DO], and turbidity) were measured with a multi-parameter water quality meter at regular volume intervals every three to five minutes and recorded on individual groundwater sample collection records (Appendix B) and summarized in Table 2. Samples were submitted to REI Consultants, Inc. (a division of Pace Analytical) of Beaver, West Virginia (VELAP No. 460148) for the chemical analysis. The results of the groundwater samples collected to date were validated and are provided in Table 3 (shallow) and Table 4 (deep).

The groundwater sample laboratory data reports and data validation reports for the April 2018 Site characterization program are provided in Appendix C.

In addition to groundwater sampling, a complete set of depth to water measurements were collected from the new wells and from several existing wells located upgradient and in the area of interest. Groundwater elevation measurements and associated survey information collected to date are provided in Table 5.

Pumping Tests

Two short-duration pumping tests (less than 8 hours) were conducted on CP-MW-2S and PZ-2. The pumping tests were conducted to further define the hydrogeologic properties of the shallow aquifer to define the capture zone of the proposed remedial alternatives, and to better understand anticipated flow rates to provide adequate groundwater capture. Water quality samples were collected at approximately three to four hours into the pumping test, and near the completion of the pumping test to evaluate changes in groundwater chemistry due to the pumping stresses. The results are presented in Table 6.

Geotechnical Testing

Geotechnical sampling was conducted at four of the well/plezometer locations (PZ-1 through PZ-4) and at one additional boring location (GT-1). The locations of these explorations are shown on Figure 2. Geotechnical samples were collected to further support soil classification and to provide data to evaluate future remedial options.

Soil samples were submitted for one or more of the following tests: particle size analysis (ASTM D422), particle size using sieve and hydrometer testing (ASTM D422), and Atterberg limits (ASTM D4318). The results of these geotechnical analyses are provided in Appendix D.

1.4 SUMMARY OF FINDINGS

1.4.1 Geology/Hydrogeology

Subsurface conditions observed in test borings indicate the presence of four major stratigraphic units in the study area.

- A fine-grained fill material of with thicknesses varying between approximately 10 to 28 ft across the Site.
- Gravelly sand deposit was encountered in all borings and also varies in thickness. This unit has been designated as the shallow aquifer, and monitoring wells have been screened within this unit for monitoring groundwater chemistry and piezometric elevations. The gravelly sand deposit thickness varies between 1.5 to 20.5 ft across the Site.
- Underlying the gravel/sand unit is a silt/clay aquitard of varying thickness that was observed across a majority of the study area. This aquitard thins and pinches out to the northwest portion of the study area. Within the study area, the primary groundwater flow path is believed to be within the shallow aquifer above the aquitard, but groundwater chemistry indicates that there is some flow from the shallow to deep aquifer. The silt/clay deposit thickness varies between 2 to 15.5 ft across the Site.
- A silty/clayey sand was observed below the aquitard/shallow aquifer within the study area. This deeper silty/clayey sand has been designated as the deeper aquifer in the study area. The bottom of the silty/clayey sand was not encountered during the Site subsurface investigations.

The lithology, supported by the geotechnical testing results, is also described on the soil boring logs (Appendix A).

The depth-to-water measurements are presented in Table 5. Groundwater contours observed during the April 2018 field investigation are included in Figures 3 and 4. The groundwater contours in both the shallow and deeper portion of the aquifer suggest that there is a shallow 'trough' that extends between well couplets CP-MW-2 and CP-MW-5. Observed groundwater elevations, coupled with preliminary water chemistry data, indicates that the primary flow pathway for groundwater appears to be through the center and northeastern portion of the current study area. This is also corroborated by the seep data collected earlier in the investigation and reported previously in the SCR.

1.4.1.1 In-Situ Hydraulic Conductivity Testing

The resulting hydraulic conductivity of the shallow aquifer was estimated between 1×10^{-5} to greater than 1×10^{-2} centimeters per second (cm/sec), with a majority of the aquifer estimated to range between 1×10^{-4} to 1×10^{-3} cm/sec. Results observed in CP-MW-4S were observed to be greater than 1×10^{-2} cm/sec indicating the presence of more granular deposits at this location (see Appendix A), which is consistent with the classification of the subsurface sediments at this boring location. Conversely, the observed results at CP-MW-7S (approx. 1×10^{-5} cm/sec) indicate the presence of finer grained material. The estimated hydraulic conductivity of the deeper aquifer ranged from 1×10^{-4} to 1×10^{-3} cm/sec with no observed outliers, indicating more consistent subsurface conditions. The following table provides a summary of the hydraulic conductivity test results.

Location ID	Elevation of Well Screen (feet msl)		Hydraulic Conductivity (K) (cm/sec)
	Top	Bottom	
CP-MW-1S	7.47	2.47	Not Measured
CP-MW-1D	-20.79	-25.79	6.0×10^{-4}
CP-MW-2S	3.39	-1.61	4.0×10^{-3}
CP-MW-2D	-16.47	-21.47	4.0×10^{-4}
CP-MW-3S	2.69	-2.31	2.0×10^{-4}
CP-MW-3D	-13.95	-18.95	2.0×10^{-3}
CP-MW-4S	0.70	-4.30	6.0×10^{-2}
CP-MW-4D	-22.29	-27.29	8.0×10^{-4}
CP-MW-5S	6.96	-3.04	6.0×10^{-4}
CP-MW-5D	-24.86	-29.86	1.0×10^{-3}
CP-MW-6S	6.76	1.76	Not Measured
CP-MW-6D	-23.45	-28.45	3.0×10^{-4}
CP-MW-7S	0.26	-4.74	2.0×10^{-5}
CP-MW-7D	-19.58	-24.58	2.0×10^{-4}
CP-MW-8S	7.3	-2.7	1.0×10^{-2}
CP-MW-8D	-18.7	-28.7	1.0×10^{-4}
CP-MW-9S	7.8	-2.2	5.0×10^{-3}
CP-MW-9D	-13.6	-23.6	1.0×10^{-3}
PZ-1	3.5	-1.5	Not Measured
PZ-2	2.2	-2.8	Not Measured
PZ-3	1.6	-3.4	Not Measured
PZ-4	1.6	-3.4	5.0×10^{-3}

1.4.1.2 Estimated Groundwater Flow Velocity

Groundwater in the study area is generally flowing from the southwest to the northeast (James River). The groundwater flow direction and horizontal gradient are consistent in both the shallow and deep aquifers.

Location-specific hydraulic conductivities, observed groundwater gradients, and an assumed effective porosity of 0.2 were calculated for each location. The geometric mean of these results was then calculated for the shallow and deep aquifer separately. The resulting groundwater flow velocity of the shallow and deep aquifers is estimated at 30 feet per year (ft/yr) and 14 ft/yr, respectively. These results will be compared to the groundwater modeling as part of the pre-design activities.

1.4.1.3 Vertical Head Potentials

Based on piezometric head observations from the recently installed well couplets, the vertical groundwater head potential is downward from the shallow aquifer to the deeper aquifer at all observed locations. The higher piezometric heads observed within the shallow aquifer and the difference in general water chemistry (i.e., pH and conductivity) and specific chemical concentrations indicate that the shallow aquitard in the study area has retarded the vertical migration of Site-related impacts. Evidence of Site-related impacts are observed in the deeper aquifer at lower concentrations than the shallow aquifer, indicating that there are likely discrete areas where the aquitard is either thin or incomplete, in the study area. The areas where the aquitard is incomplete allow Site-related constituents to migrate to the deeper aquifer but based on concentrations observed it is not the primary pathway for fate and transport of the constituents.

1.4.2 Analytical Results and Groundwater Quality

The groundwater data collected in April 2018 were compared to Site background data. The background values are split into two aquifers, Columbia and Potomac Aquifers, representing the shallower and deeper aquifers, respectively.

1.4.2.1 Monitoring Well Analytical Results

In April 2018, groundwater samples were collected from monitoring well couplets designated CP-MW-8 and CP-MW-9, and PZ-2 shown on Figure 2. These data, along with data collected during previous Site investigations, were compared to the Site-established preliminary background values.

Generally, the lowest observed values of pH and highest observed values of conductivity and sulfate concentrations are observed in the shallow aquifer, within the central and northeastern portion of the study area. Observed values of pH and conductivity in the deeper aquifer suggest that the shallow silty/clay layer has reduced the vertical migration of Site-related constituents, as compared to the shallow aquifer.

The data also exhibited dissolved metal groundwater concentrations in the shallower aquifer of boron, cadmium, chromium, cobalt, nickel, selenium, vanadium and zinc that were above background values by more than one order of magnitude. The deeper aquifer exhibited dissolved metal groundwater concentrations moderately above background of cadmium, cobalt, and nickel at all the locations. Detections in deeper well CP-MW-2D were above background for antimony, selenium, and thallium by more than one order of magnitude. This indicates that there is some groundwater interaction from the shallow to the deep aquifer, but it is not the primary flow mechanism for fate and transport of Site-related constituents. The shallow and deep groundwater analytical results are provided in Tables 3 and 4, respectively.

It should be noted that several April 2018 groundwater constituents (including antimony, lead, selenium and thallium) reported non-detect (ND) results with the method detection limits (MDLs) above the applicable background standards. The MDLs reflect the lowest detection limits achieved using analytical method 200.7. Post-construction samples will be analyzed using a combination of analytical methods which will ensure that the detection limits for each constituent are below applicable background standards, barring any required dilutions which may increase these limits.

2. Remedial Alternative Evaluation

The seeps observed along the James River are a result of groundwater daylighting at the river bank. The groundwater daylighting in the seeps contain levels of constituents above Site-specific background levels. As a result, applicable remedial alternatives were evaluated with a goal of minimizing the movement of anthropogenic groundwater constituents toward the James River. The objectives of this remedial alternative evaluation are as follows:

- Identify and evaluate potential remedial technologies that have been demonstrated to be effective with mitigating contaminated groundwater migration, specifically hydraulic control methods;
- Estimate areas and volumes of impacted areas to be remediated; and
- Indicate the relative certainty for obtaining remedial objectives.

2.1 ALTERNATIVES SCREENING

An alternative screening process was completed to screen appropriate remedial options and to recommend the most applicable option based on Site-specific conditions. Remedial technologies were evaluated for their applicability to mitigate contaminants being transported by groundwater to the river bank and to meet Dominion Energy's aggressive schedule. The alternative screening process was conducted based on discussions with remedial technology vendors, knowledge of Site conditions, and engineering judgment.

2.2 DESCRIPTION OF REMEDIATION ALTERNATIVES

A general description of each of the alternative considered as part of this remediation assessment is provided below.

2.2.1 Alternative 1. Shallow and Deep Hydraulic Control with Low Permeability Barrier Near River

Alternative 1 is shallow and deep hydraulic control system with a low permeability barrier extending through the deep aquifer to minimize the hydraulic influence from the river. The shallow groundwater would be collected via a collection trench and the deep water via recovery wells. The recovered groundwater will be managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

2.2.2 Alternative 1a. Shallow and Deep Hydraulic Control with Low Permeability Barrier Near River and Eastern Collection Trench

Alternative 1a is the same as alternative 1, but also includes a shallow recovery trench perpendicular to the river on the eastern edge of the area. The added shallow trench is designed to capture any impacts that may be migrating to the northeast. The shallow groundwater would be collected via a collection trench and the deep water via recovery wells and managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

2.2.3 Alternative 2. Shallow and Deep Hydraulic Control Near River

Alternative 2 is the same shallow and deep hydraulic control system described in Alternative 1, but without the downgradient low permeability barrier. The shallow groundwater would be collected via a collection trench and the deep water via recovery wells and managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

2.2.4 Alternative 2a. Shallow and Deep Hydraulic Control Near River and Eastern Collection Trench

Alternative 2a is the same as Alternative 2, but also includes a shallow recovery trench perpendicular to the river on the eastern edge of the area. The added shallow trench is designed to capture any impacts that may be migrating to the northeast. The shallow groundwater would be collected via a collection trench and the deep water via recovery wells and managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

2.2.5 Alternative 3. Shallow and Deep Hydraulic Control with Low Permeability Barrier at Source and In-Situ Treatment Downgradient

Alternative 3 is a "funnel and gate" approach adjacent to the coal pile to hydraulically control shallow and deep groundwater. A low permeability barrier extending through the deep aquifer would be installed around the downgradient perimeter of the coal pile. The shallow and deep groundwater would then be collected via recovery wells situated in a "gate" in the barrier on the downgradient side of the coal pile. The extracted groundwater would be managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

Additionally, near the river, a permeable reactive barrier made of reactive media emplaced with a series of closely-spaced injection wells would be installed to treat shallow and deep groundwater between the source and the river.

2.2.6 Alternative 4. Shallow and Deep Hydraulic Control at Source and In-Situ Treatment Downgradient

Alternative 4 is a shallow and deep hydraulic control system without the low permeability barrier. The shallow groundwater would be recovered close to the source using a shallow recovery trench and the deep groundwater would be recovered via recovery wells. The extracted groundwater would be managed using an existing on-site water treatment system or via a separate system designed to treat the constituents of concern.

Additionally, near the river, a permeable reactive barrier made of reactive media emplaced with a series of closely-spaced injection wells would be installed to treat shallow and deep groundwater between the source and the river.

2.2.7 Alternative 5. In-Situ Treatment Downgradient

Alternative 5 includes two permeable reactive barriers (injection barriers) with permanent injection wells. The first barrier would be installed at the source zone and the second near the river. Both barriers would be installed to treat shallow and deep groundwater. In addition to the reactive barriers close to the source and along the river, a series of injection wells in accessible areas within the body of the plume would be installed to address the impacts between the two reactive barriers.

2.3 REMEDIAL ALTERNATIVE EVALUATION

The remedial alternatives described above were evaluated based on their advantages and disadvantages described below:

Remedial Alternative	Advantages	Disadvantages
Alt. 1: Shallow and Deep Hydraulic Control with Low Permeability Barrier (LPB) Near River	<ul style="list-style-type: none"> • Intercepts groundwater before reaching riverbank • Permanent barrier requires minimal operation and maintenance (O&M) • Minimal data gaps needed to support design 	<ul style="list-style-type: none"> • Does not mitigate source • May not capture all constituents migrating east-southeast • Requires long term O&M of pump and treat system • Utility relocation required
Alt. 1A: Shallow and Deep Hydraulic Control with LPB Near River and Eastern Collection Trench	<ul style="list-style-type: none"> • Intercepts groundwater before reaching riverbank • Permanent barrier requires minimal O&M • Minimal data gaps needed to support design • Additional groundwater capture on eastern edge of Site 	<ul style="list-style-type: none"> • Does not mitigate source • Requires long term O&M of pump and treat system • Utility relocation required • Requires disruption of railroad spur
Alt. 2: Shallow and Deep Hydraulic Control Near River	<ul style="list-style-type: none"> • Intercepts groundwater before reaching riverbank • Minimal data gaps needed to support design 	<ul style="list-style-type: none"> • Does not mitigate source • May not capture all constituents migrating east-southeast • Requires long term O&M of pump and treat system • Utility relocation required
Alt. 2A: Shallow and Deep Hydraulic Control Near River and Eastern Collection Trench	<ul style="list-style-type: none"> • Intercepts groundwater before reaching riverbank • Minimal data gaps needed to support design • Additional groundwater capture on eastern edge of Site 	<ul style="list-style-type: none"> • Does not mitigate source • Requires long term O&M of pump and treat system • Utility relocation required • Requires disruption of railroad spur
Alt. 3: Shallow and Deep Hydraulic Control with LPB at Source and In-Situ Treatment Downgradient	<ul style="list-style-type: none"> • Collects and treats water at the source, minimizing downgradient impacts • Impacted groundwater is treated prior to seepage along the riverbank • Downgradient LPB customized to raise pH, and treat groundwater by immobilizing or precipitating out metals. 	<ul style="list-style-type: none"> • Does not immediately address the seep, over time in-situ treatment will address impacted groundwater prior to seepage along the riverbank. • Requires long term O&M of pump and treat system
Alt. 4: Shallow and Deep Hydraulic Control at Source and In-Situ Treatment Downgradient	<ul style="list-style-type: none"> • Intercepts groundwater before reaching riverbank • Minimal data gaps needed to support design • Impacted groundwater is treated prior to seepage along the riverbank 	<ul style="list-style-type: none"> • Does not immediately address the seep, over time in-situ treatment will address impacted groundwater prior to seepage along the riverbank. • Requires long term O&M of pump and treat system

	<ul style="list-style-type: none"> Downgradient passive reactive barrier (PRB) customized to raise pH, and treat groundwater by immobilizing or precipitating out metals. 	<ul style="list-style-type: none"> Will require multiple injection rounds at the PRB
Alt. 5: In-Situ Treatment Downgradient	<ul style="list-style-type: none"> Impacted groundwater is treated prior to seepage along the riverbank. Downgradient PRB customized to raise pH, and treat groundwater by immobilizing or precipitating out metals. 	<ul style="list-style-type: none"> Does not immediately address the seep, over time in-situ treatment will address impacted groundwater prior to seepage along the riverbank. Will require multiple injection rounds at each of the PRBs

2.4 REMEDIAL TECHNOLOGY RECOMMENDATION

Based on our assessment of the technical advantages and disadvantages of the various alternatives, summarized above, Alternative 2a: Shallow and Deep Hydraulic Control Near River and Eastern Collection Trench is considered to be the most applicable alternative for this Site. This remedial alternative captures impacted groundwater to prevent migration to the shore line, and allows for flexibility regarding the pumping rates and hydraulic controls, should additional capture be required. This remedial technology consists of a shallow and deep hydraulic control system which includes three deep extraction wells installed to approximately 50 ft below ground surface (bgs) and a shallow recovery (groundwater interceptor) trench installed to a depth of approximately 30 ft bgs. Based on data gathered during pumping tests, it is assumed that combined groundwater extraction will occur at a rate of approximately 33 gallons per minute (gpm). Groundwater would then be treated on-site before being discharged to surface water via a Virginia Pollutant Discharge Elimination System (VPDES) permitted outfall. This alternative would minimize impacted groundwater movement and control potential off-site migration of impacted groundwater to the northeast. A conceptualized layout of this alternative is shown on Figure 5 and Figure 6.

The final selection and design of the hydraulic control described above will depend upon constructability within an area of high utility concentration. It is important to note that seeps are naturally occurring phenomena that may continue to exist after the remedial technology is installed; however, this method will mitigate the movement of pollutants detected at the observed groundwater seepage points. As the plume is cut-off from entering the local groundwater flow system, the constituents of concern will be diminished and ultimately no longer discharged via natural seepage points along the river. This method uses proven technology and is capable of preventing contaminant migration to the river.

3. Preliminary Implementation Schedule

3.1 PLANNING AND DESIGN

It is anticipated that the proposed remedy can be installed within four to six months. The following schedule is proposed¹:

	Evaluate the need for and prepare the necessary permit applications to implement the proposed remedy. Permits/plans to include:
May 2018	<ul style="list-style-type: none">• Stormwater Pollution Prevention Plan• VPDES Permit Modification• RPA Buffer Modification Request and Form C• Minor Site Plan Application
June 2018	Prepare and submit invitation to bid to Contractors
August 2018	Select Contractor and mobilize for construction
Fall 2018	Complete construction of remedial approach, and install post-construction monitoring wells

Notes

1. The proposed schedule is dependent on permitting and Contractor availability.

3.2 CONSTRUCTION STATUS REPORTS

During the Site preparation activities and construction phase of the remedial alternative, monthly status reports will be submitted electronically to the VDEQ to provide progress updates. Reports will be submitted by the 10th of each month.

Monthly status reports will generally include the following:

- Site preparation activities including utility relocation and required permitting;
- Trench excavation;
- Off-site soil disposal documentation (if applicable);
- Dewatering activities (if applicable);
- Deep well installation;
- Additional Site characterization activities (if applicable); and
- Updates on construction schedule.

As-built drawings will be provided to VDEQ within three months following the completion of the remedial alternative construction. This submission will include notification of any deviations, alterations or other changes that may occur during construction.

4. Post-Construction Monitoring Program

The proposed monitoring system will consist of the measurement of the changes in groundwater elevations in and around the trench and existing and new deep wells. The changes in water elevations over time as a result of the operation of the trench and deep recovery wells will be used to document the change in groundwater flow direction and propagation of the capture zone in the project area. The following sections describe the proposed monitoring program to be implemented after the installation of the shallow and deep hydraulic control system described in Section 2.3, above.

4.1 MONITORING WELL AND PIEZOMETER INSTALLATION

Four paired wells (8 total) will be installed downgradient of the shallow and deep groundwater control system to evaluate the effectiveness of the remedial control. Up to three (3) piezometers will also be installed inside the trench to monitor water levels during operation. Proposed locations of the monitoring wells and piezometers are shown on Figure 7.

Each shallow well will be installed to a depth of approximately 20 ft (El. -6). A screen will be installed between 9 and 19 ft (El. 5 to El. -5). Each deep well will be installed to a depth of 45 ft (El. -31). A screen will be installed between 34 and 44 ft. (El. -20 to -30). The piezometers will be distributed across the length of the trench at a depth of approximately 35 to 40 feet below grade.

For the first year of operation, water levels from each of the paired wells and piezometers will be collected continuously using Level loggers. These data will be used to track the propagation of the cone of influence around the linear trench and vertical wells.

4.2 MONITORING WELL SAMPLING PROGRAM

After the construction of the trench and deep recovery wells associated with the remedial alternative, the four paired wells described above will be sampled on a quarterly basis for the first year to evaluate the effectiveness of the remedial approach. The first quarterly sample is expected to be collected approximately three months after the installation of the remedial approach to allow for an adequate start-up period. Each quarterly sample will be collected using low-flow methods. The groundwater water will be directed through a flow cell and analyzed in the field for general water quality parameters including hardness, pH, conductivity, dissolved oxygen, oxidation-reduction potential and temperature.

The monitoring well samples will be submitted to a Virginia Environmental Laboratory Accreditation Program (VELAP) laboratory for the analysis of the constituents listed in Table 7. Table 7 also summarizes the sample preservation methods and holding times for each analysis. During each sampling event, one field duplicate and one matrix spike (MS)/matrix spike duplicate (MSD) sample will also be collected.

4.3 REPORTING SCHEDULE

4.3.1 Quarterly Reports

To demonstrate the effectiveness of the proposed remedial approach, quarterly status reports will be submitted electronically to the VDEQ approximately one month following the collection of the quarterly water levels and post-construction monitoring samples. The quarterly status reports will generally

include a brief narrative of quarterly post-construction monitoring activities and tabulated sampling analytical data compared to applicable background standards.

4.3.2 Annual Reports

An annual review will be submitted concurrently with the fourth quarter monitoring report and will include a more in-depth analysis of the effectiveness of the implemented remedial approach. The annual report will generally include:

- A summary of post-construction monitoring activities conducted over the past year;
- Tabulated post-construction monitoring sampling analytical data compared to applicable background standards;
- A summary of depth to water readings and elevations;
- Figures to illustrate the hydraulic capture and change in concentrations as compared to baseline data;
- Validated laboratory reports associated with sampling data; and
- Low flow field sampling records.

The annual review will make recommendations for the scope and schedule of future performance monitoring. The annual review can also be used for additional topics, such as: recommendations for additional monitoring points, added/deleted constituents of concern, justification for reducing monitoring frequency, etc.

The quarterly and annual reports outlined above will be combined with and submitted concurrently with the quarterly and annual seep and surface water monitoring reports outlined in the Surface Water Monitoring Plan.

4.3.3 Remedy Effectiveness Evaluation

A Remedy Effectiveness Evaluation Report will be submitted to the VDEQ concurrently with the third annual report. Post-construction monitoring data will be used to review analytical trends, quantify the success of the chosen mitigation method and evaluate the effectiveness of the remedial system. The report will document the remedy effectiveness and if any additional steps might be necessary to adequately mitigate the seeps.

4.4 OPERATION AND MAINTENANCE

Inspections

Periodic operation and maintenance (O&M) Site Inspections will be necessary to verify that the existing hydraulic control system, soil cover, and associated Site restoration features remain intact, and to identify and arrange for repair as required. Site inspections will also include monitoring the flushing of the new hydraulic control system, if needed.

Operation and Maintenance

An O&M plan for the Site will be finalized upon VDEQ approval of this SMP and after the remedial design has been completed. The O&M plan will provide a description of the long-term operation and maintenance components of the new hydraulic control system. The O&M plan will generally include the following:

- Overview of the shallow groundwater management system;
- Overview of the deep groundwater management system;
- Overview of the compliance monitoring network;
- Maintenance schedule;
- Standard operating procedures (including inspections and operation);
- Inspection and sampling field forms;
- Product information sheets; and
- Manufacturer O&M manuals

An example Table of Contents for an O&M plan is provided in Appendix E.

4.5 SUPPLEMENTAL REMEDIAL OPTIONS

If the results of the monitoring program described above indicate the need for increased hydraulic control, the system will be further evaluated to reduce the migration of constituents northeast to the James River. Additional evaluation, if necessary, may include reviewing the hydraulic control provided by the deep wells, and initiating any changes to the deep well system (i.e. increasing flow capacity, installing additional wells, etc.) to reduce contaminant migration.

References

Haley & Aldrich, Inc., 2018. Site Characterization Report, Chesterfield Power Station, Chester, Virginia, VPDES Permit No. VA0004146.

Haley & Aldrich, Inc., 2018. Surface Water Monitoring Plan – Seep Mitigation Project, Chesterfield Power Station, Chester, Virginia, VPDES Permit No. VA0004146.

G:\130669 - Dominion CPS\Deliverables\Seep Mitigation Plan May 2018\Final - Rev 2\2018_0824_HAI_CPS_Mitigation Plan-Final.docx

Public Staff

Lucas Exhibit 10

Docket No. E-22, Sub 562

**COMMONWEALTH of VIRGINIA****DEPARTMENT OF ENVIRONMENTAL QUALITY****PIEDMONT REGIONAL OFFICE**

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural ResourcesDavid K. Paylor
DirectorJeffery A. Steers
Regional Director

December 21, 2017

Mr. Jason Williams
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060**NOTICE OF VIOLATION**RE: NOV No. W2017-12-P-0001
Dominion Energy Services – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)
VWP Permit No. 10-1787

Dear Mr. Williams:

This letter notifies you of information upon which the Department of Environmental Quality (Department or DEQ) may rely in order to institute an administrative or judicial enforcement action. Based on this information, DEQ has reason to believe that Virginia Electric and Power Company may be in violation of the State Water Control Law and Regulations at the Chesterfield Power Station.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). DEQ requests that you respond within 10 days of the date of this letter to arrange a prompt meeting.

OBSERVATIONS AND LEGAL REQUIREMENTS

The Chesterfield Power Station is subject to VPDES Permit No. VA0004146 dated October 1, 2016 and to VWP Permit No. 10-1787, issued on February 27, 2013 and most recently modified on December 6, 2016.

- a) **Observations:** On July 6, 2017 the DEQ's Piedmont Regional Office (PRO) received a verbal notification that on July 5, 2017 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge consisted of 277,000 gallons and started at approximately 5:40 p.m. and had ceased by 6:20 p.m.

On July 21, 2017, the Department of Game and Inland Fisheries observed a suspected unauthorized discharge (groundwater seep) along the James River shoreline, adjacent to the Chesterfield Power Station. On July 28, 2017, the permittee notified DEQ that it had commenced an investigation of the discharge, and DEQ conducted an inspection of this area on August 1, 2017. As part of its investigation, the permittee performed sampling, and analytical results indicated low pH values and elevated metals concentrations. The impacted groundwater is daylighting as trickle flows along the James River shoreline, and is observable at low tide. The duration and exact volume of the discharge is unknown. On September 28, 2017, the DEQ-PRO received a verbal notification from Dominion Energy of the seepage and sampling results, and on October 5, 2017, DEQ met with the permittee to discuss this apparent seepage.

On October 25, 2017 and November 1, 2017 the DEQ-PRO was informed of an oil sheen in the thermal discharge channel, downstream of permitted Outfall 003, at the Chesterfield Power Station. Follow up correspondence indicated that approximately 40 gallons of 'turbine lube oil' was released on October 25th.

Legal Requirements: The cover page of VPDES Permit No. VA0004146 states, "In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, and Parts I and II of this permit, as set forth herein."

9VAC25-31-50 states "Prohibitions. A. Except in compliance with a VPDES permit, or another permit, issued by the board or other entity authorized by the board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses; or
3. Discharge stormwater into state waters from municipal separate storm sewer systems or land disturbing activities."

Part II.F of VPDES Permit VA0004146 states “Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.”

Part II.G. of VPDES Permit VA0004146 states, “Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II.F, shall notify the Department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the Department within five days of discovery of the discharge.”

Part I.C.3 of VPDES Permit VA0004146 states, “Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner and consistent with Best Management Practices, so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.” In addition, Part II.R states “Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.”

Va. Code § 62.1-44.5(A) states, “[e]xcept in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to this chapter, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; 2. Excavate in a wetland; 3. Otherwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses ...”

9 VAC 25-260-20(A) states, “State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards

or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.”

Va. Code § 62.1-44.34:18(A) states, “The discharge of oil into or upon state waters, lands, or storm drain systems within the Commonwealth is prohibited. For purposes of this section, discharges of oil into or upon state waters include discharges of oil that (i) violate applicable water quality standards or a permit or certificate of the Board or (ii) cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.”

2. **Observations:** Dominion provided notification on August 23, 2017 of two sediment releases to surface waters located adjacent to construction activities associated with the new Low Volume Wastewater Treatment System (LVWWTs). On August 31, 2017, DEQ staff conducted a site inspection to determine compliance with the VWP Permit. DEQ staff observed that approximately 45 linear feet of stream channel and 0.23 acre of palustrine forested wetlands were impacted at Impact Area A by the discharge and accumulation of up to four inches of eroded sediment. Staff also observed that approximately 88 linear feet of stream channel and 0.18 acre of palustrine forested wetlands were impacted at Impact Area B by the discharge and accumulation of up to three inches of eroded sediment. The impacts appeared to have been caused by the failure of erosion and sediment control measures. The VWP Permit does not authorize these impacts.

Legal Requirements: The Cover Page of VWP Permit No. 10-1787 states, “The activities shall result in the permanent impact of no more than 0.012 acre of tidal forested wetlands, 0.033 acre of palustrine forested wetlands, 0.078 acre of isolated palustrine scrub-shrub wetlands, 0.98 acre isolated palustrine emergent wetlands, 0.16 acre of palustrine emergent wetlands, 0.636 acre of open water, and 1,528 linear feet of stream channel. The activities shall result in the conversion of no more than 1.03 acres of tidal forested wetlands to scrub-shrub wetlands, and temporary impacts to no more than 0.994 acre of tidal forested wetland, 0.198 acre of palustrine forested wetlands, 0.01 acre of palustrine emergent wetlands, and 38 linear feet of stream channel. Permitted impacts shall be taken as illustrated on the plan sheets titled “Drawing 3: Jurisdictional Area Impacts Map”, by Golder Associates dated May 5, 2015 and “Figure 3: Modified Wetland Impact Map,” by Golder Associates dated August 10, 2015 and modified on September 14, 2016.”

Part I.C.22 of VWP Permit No. 10-1787 states, “Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction. These controls shall be placed prior to clearing and grading activities and shall be maintained in good working order, to minimize impacts to surface waters. These controls shall remain in place only until clearing and grading activities cease and these areas have been stabilized.”

Va. Code §62.1-44.15:20(A) states, "A. Except in compliance with an individual or general Virginia Water Protection Permit issued in accordance with this article, it shall be unlawful to: 1. Excavate in a wetland; 2. On or after October 1, 2001, conduct the following in a wetland: a. New activities to cause draining that significantly alters or degrades existing wetland acreage or function; b. Filling or dumping; c. Permanent flooding or impounding; or d. New activities that cause significant alteration or degradation of existing wetland acreage or functions; or 3. Alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses unless authorized by a certificate issued by the Board."

9VAC 25-210-50 (A) states, "Except in compliance with a VWP permit, no person shall dredge, fill or discharge any pollutant into, or adjacent to surface waters, withdraw surface water, otherwise alter the physical, chemical or biological properties of surface waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses; excavate in wetlands or on or after October 1, 2001, conduct the following activities in a wetland: 1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions; 2. Filling or dumping; 3. Permanent flooding or impounding; or 4. New activities that cause significant alteration or degradation of existing wetland acreage or functions."

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

FUTURE ACTIONS

DEQ staff wishes to discuss all aspects of their observations with you, including any actions needed to ensure compliance with state law and regulations, any relevant or related measures you plan to take or have taken, and a schedule, as needed, for further activities. In addition, please advise us if you dispute any of the observations recited herein or if there is other information of

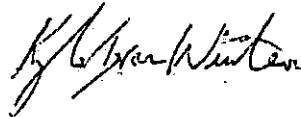
Dominion Energy Services – Chesterfield Power Plant
VPDES Permit No. VA0004146
VWP Permit No. 10-1787
Notice of Violation
Page 6 of 6

which DEQ should be aware. In order to avoid adversarial enforcement proceedings, Dominion Energy Services may be asked to enter into a Consent Order with the Department to formalize a plan and schedule of corrective action and to settle any outstanding issues regarding this matter, including the assessment of civil charges.

In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf or ask the DEQ contact listed below.

Please contact Frank Lupini at (804) 698-4187 or via email to Frank.Lupini@deq.virginia.gov within 10 days to discuss this matter.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: H. Deihls – PRO Water Compliance Manager (electronic copy)
A. Bilalagic – PRO Water Compliance Inspector (electronic copy)
C. Witte - PRO VWP Permits Inspector
J. Bryan – PRO Water Permits (electronic copy)
J. Kazio – PRO PREP Coordinator (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to Beverly.Wood@dominionenergy.com)
J. Williams – Dominion Generation Environmental Services (electronic copy to Jason.E.Williams@dominionenergy.com)
File/ECM



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Jeffery A. Steers
Regional Director

August 1, 2017

Cathy Taylor, Director, Electric Environmental Services
Dominion – Chesterfield Power Station
500 Coxendale Rd.
Chester, VA 23831

WARNING LETTER

RE: **WL # W2017-07-P-1008**
Dominion – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ or the Department) has reason to believe that Dominion's Chesterfield Power Station may be in violation of the State Water Control Law and Regulations.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). Due to the adequacy of information in your email dated July 10, 2017 no response to this correspondence is required.

OBSERVATIONS AND LEGAL REQUIREMENTS

- a) **Observation:** On July 5, 2017 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge consisted of 277,000 gallons and started at approximately 5:40 p.m. and had ceased by 6:20 p.m.

Legal Requirement: Part I.C.3. of VPDES Permit VA0004146 effective October 1, 2016 states *"Any and all product, materials, industrial wastes, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized."* In addition, Part II.R states *"Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters."*

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty of not more than \$10,000. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

The Court has the inherent authority to enforce its injunction, and is authorized to award the Commonwealth its attorneys' fees and costs.

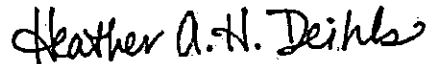
FUTURE ACTIONS

No response to this correspondence is required. However, if you have additional information please provide it within 20 days of the date of this letter. *It is DEQ policy that appropriate, timely, corrective action undertaken in response to a Warning Letter will avoid adversarial enforcement proceedings and the assessment of civil charges or penalties.*

Please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" (http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf) or ask the DEQ contact listed below.

Your point of contact at DEQ in this matter is Ms. Azra Bilalagic. Please direct written materials to her attention. If you have questions or wish to arrange a meeting, you may reach Ms. Bilalagic at (804) 527-5011 or via email to Azra.Bilalagic@deq.virginia.gov.

Sincerely,



Heather A. H. Deihls
Water Compliance Manager

cc: File/ECM
J. Bryan – DEQ-PRO VPDES Permits (electronic copy)
A. Bilalagic – DEQ-PRO Water Compliance (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to
Beverly.Wood@dominionenergy.com)
J. Williams – Dominion Generation Environmental Services (electronic copy to
Jason.E.Williams@dominionenergy.com)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

December 6, 2016

Cathy Taylor, Director, Electric Environmental Services
Dominion – Chesterfield Power Station
500 Coxendale Rd.
Chester, VA 23831

WARNING LETTER

RE: **WL # W2016-11-P-1003**
Dominion – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)
VPDES Industrial Stormwater General Permit No. VAR051023 (effective July 1, 2014)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ or the Department) has reason to believe that Dominion's Chesterfield Power Station may be in violation of the State Water Control Law and Regulations.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). DEQ requests that you respond within 20 days of the date of this letter.

OBSERVATIONS AND LEGAL REQUIREMENTS

- a) **Observation:** On September 28 through September 29, 2016 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge started at approximately 10:00 p.m. on September 28, 2016 and had ceased by 1:00 a.m. on September 29, 2016.

Legal Requirement: Part I.B.3. of VPDES Permit VA0004146 effective December 10, 2004 states "Any and all product, materials, industrial wastes, and/or storage of raw or

intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized." In addition, Part II.R states "Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters."

- b) **Observation:** On September 28 through September 29, 2016 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to stormwater Outfall 055 via curb inlets located on the parking lot in the vicinity of the coal pile. This outfall discharges to the James River.

Legal Requirement: Part I.B.1 of VPDES Permit VAR051023 effective July 1, 2014 states "Allowable non-stormwater discharges. Except as provided in this section or in Part IV, all discharges covered by this permit shall be composed entirely of stormwater... ", Va. Code § 62.1-44.5(A) states "[e]xcept in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to this chapter, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; 2. Excavate in a wetland; 3. Otherwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses" and 9 VAC 25-31-50 (A) states "[e]xcept in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or 2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses."

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty of not more than \$10,000. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

The Court has the inherent authority to enforce its injunction, and is authorized to award the Commonwealth its attorneys' fees and costs.

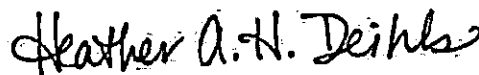
FUTURE ACTIONS

After reviewing this letter, please respond in writing to DEQ within 20 days of the date of this letter detailing actions you have taken or will be taking to ensure compliance with state law and regulations. If corrective action will take longer than 90 days to complete, you may be asked to sign a Letter of Agreement or enter into a Consent Order with the Department to formalize the plan and schedule. *It is DEQ policy that appropriate, timely, corrective action undertaken in response to a Warning Letter will avoid adversarial enforcement proceedings and the assessment of civil charges or penalties.*

Please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" (http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf) or ask the DEQ contact listed below.

Your point of contact at DEQ in this matter is Ms. Azra Bilalagic. Please direct written materials to her attention. If you have questions or wish to arrange a meeting, you may reach Ms. Bilalagic at (804) 527-5011 or via email to Azra.Bilalagic@deq.virginia.gov.

Sincerely,



Heather A. H. Deihls
Water Compliance Manager

cc: File/ECM
J. Bryan and J. Abel – DEQ-PRO VPDES Permits (electronic copy)
A. Bilalagic – DEQ-PRO Water Compliance (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to Beverly.Wood@dom.com)
A. Boschen - Dominion Electric Environmental Services (electronic copy to amelia.h.boschen@dom.com)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060 .

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

March 01, 2011

Ms. Cathy C. Taylor, Director, Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: **WL # W2011-02-P-1015**
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

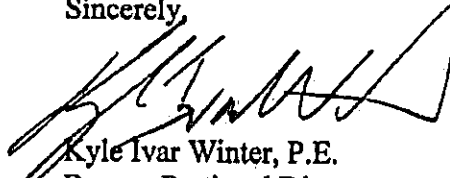
- a) On January 03, 2011 the DEQ-PRO received notification of an unpermitted discharge of approximately 150-200 gallons of 'ash sluice water' that was discharged to the James River via permitted outfall 005. A follow-up report received on January 06, 2011 indicated that the cause of the unpermitted discharge was due to 'a pipe failure in the Unit 6 fly ash sluice piping' and that 'a new pumping skid is currently in place and being tied in to station systems'.

As adequate permit required information has been provided in regards to this particular incident, no response to this correspondence is necessary. However, if additional information has been obtained please provide it, in writing, within 20 days of receipt of this letter. Any additional information will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Be aware that continued facility compliance may be verified by on-site inspection or other appropriate means.

Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146
Warning Letter
Page 2 of 2

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
S. Morris – DEQ-PRO Pollution Response (electronic copy)
File/ECM



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

February 26, 2010

Ms. Cathy C. Taylor, Director of Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: **WL # W2010-02-P-1008**
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

- a) On February 2, 2010 the DEQ-PRO received notification of an unpermitted discharge of approximately 270 gallons of 'ash sluice water' that was discharged to the James River via permitted outfall 003. A follow-up report received on February 10, 2010 indicated that the cause of the unpermitted discharge was due to 'a pipe failure in the #6 bottom ash sluice piping system' and that an engineering review to minimize the risk associated with the ash sluice piping was ongoing.

As adequate permit required information has been provided in regards to this particular incident, no response to this correspondence is necessary. However, if additional information has been obtained please provide it, in writing, within 20 days of receipt of this letter. Any additional information will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Be aware that continued facility compliance may be verified by on-site inspection or other appropriate means.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
File/ECM



COMMONWEALTH of VIRGINIA

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PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

December 22, 2009

Ms. Cathy C. Taylor, Director of Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: **WL # W2009-12-P-1004**
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

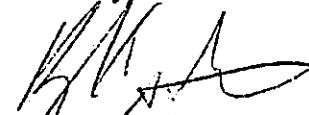
- a) On October 18, 2009 the DEQ-PRO received notification of an unpermitted discharge of approximately 175 gallons of 'ash sluice water' through the sparger channel (Outfall 003). The report indicated that the cause of the unpermitted discharge was due to 'a line rupture in the #6 Bottom Ash System'. A follow-up report received at the DEQ-PRO on October 23, 2009 indicated that the unpermitted discharge occurred through Stormwater Outfall 005.

Please review the above and submit a written explanation within 20 days of receipt of this letter clarifying which outfall was affected by the unpermitted discharge which occurred on October 18, 2009. In addition, please ensure that the response also addresses Part II.G.8, specifically "Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit."

Your letter will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Continued facility compliance may be verified by on-site inspection or other appropriate means. If corrective action will take longer than 90 days please submit a plan and schedule for inclusion in a Letter of Agreement or Consent Order. Failure to respond may result in enforcement action by DEQ.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,



Kyle Iyar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
File/ECM

I/A

Public Staff

Lucas Exhibit 10

Docket No. E-22, Sub 562



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Jeffery A. Steers
Regional Director

December 21, 2017

Mr. Jason Williams
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

NOTICE OF VIOLATION

RE: NOV No. W2017-12-P-0001
Dominion Energy Services – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)
VWP Permit No. 10-1787

Dear Mr. Williams:

This letter notifies you of information upon which the Department of Environmental Quality (Department or DEQ) may rely in order to institute an administrative or judicial enforcement action. Based on this information, DEQ has reason to believe that Virginia Electric and Power Company may be in violation of the State Water Control Law and Regulations at the Chesterfield Power Station.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). DEQ requests that you respond **within 10 days of the date of this letter** to arrange a prompt meeting.

OBSERVATIONS AND LEGAL REQUIREMENTS

The Chesterfield Power Station is subject to VPDES Permit No. VA0004146 dated October 1, 2016 and to VWP Permit No. 10-1787, issued on February 27, 2013 and most recently modified on December 6, 2016.

- a) **Observations:** On July 6, 2017 the DEQ's Piedmont Regional Office (PRO) received a verbal notification that on July 5, 2017 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge consisted of 277,000 gallons and started at approximately 5:40 p.m. and had ceased by 6:20 p.m.

On July 21, 2017, the Department of Game and Inland Fisheries observed a suspected unauthorized discharge (groundwater seep) along the James River shoreline, adjacent to the Chesterfield Power Station. On July 28, 2017, the permittee notified DEQ that it had commenced an investigation of the discharge, and DEQ conducted an inspection of this area on August 1, 2017. As part of its investigation, the permittee performed sampling, and analytical results indicated low pH values and elevated metals concentrations. The impacted groundwater is daylighting as trickle flows along the James River shoreline, and is observable at low tide. The duration and exact volume of the discharge is unknown. On September 28, 2017, the DEQ-PRO received a verbal notification from Dominion Energy of the seepage and sampling results, and on October 5, 2017, DEQ met with the permittee to discuss this apparent seepage.

On October 25, 2017 and November 1, 2017 the DEQ-PRO was informed of an oil sheen in the thermal discharge channel, downstream of permitted Outfall 003, at the Chesterfield Power Station. Follow up correspondence indicated that approximately 40 gallons of 'turbine lube oil' was released on October 25th.

Legal Requirements: The cover page of VPDES Permit No. VA0004146 states, "In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, and Parts I and II of this permit, as set forth herein."

9VAC25-31-50 states "Prohibitions. A. Except in compliance with a VPDES permit, or another permit, issued by the board or other entity authorized by the board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses; or
3. Discharge stormwater into state waters from municipal separate storm sewer systems or land disturbing activities."

Part II.F of VPDES Permit VA0004146 states “Except in compliance with this permit, or another permit issued by the Board, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.”

Part II.G. of VPDES Permit VA0004146 states, “Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II.F, shall notify the Department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the Department within five days of discovery of the discharge.”

Part I.C.3 of VPDES Permit VA0004146 states, “Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner and consistent with Best Management Practices, so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.” In addition, Part II.R states “Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.”

Va. Code § 62.1-44.5(A) states, “[e]xcept in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to this chapter, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; 2. Excavate in a wetland; 3. Otherwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses ...”

9 VAC 25-260-20(A) states, “State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards

or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life.”

Va. Code § 62.1-44.34:18(A) states, “The discharge of oil into or upon state waters, lands, or storm drain systems within the Commonwealth is prohibited. For purposes of this section, discharges of oil into or upon state waters include discharges of oil that (i) violate applicable water quality standards or a permit or certificate of the Board or (ii) cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.”

2. **Observations:** Dominion provided notification on August 23, 2017 of two sediment releases to surface waters located adjacent to construction activities associated with the new Low Volume Wastewater Treatment System (LVWWTS). On August 31, 2017, DEQ staff conducted a site inspection to determine compliance with the VWP Permit. DEQ staff observed that approximately 45 linear feet of stream channel and 0.23 acre of palustrine forested wetlands were impacted at Impact Area A by the discharge and accumulation of up to four inches of eroded sediment. Staff also observed that approximately 88 linear feet of stream channel and 0.18 acre of palustrine forested wetlands were impacted at Impact Area B by the discharge and accumulation of up to three inches of eroded sediment. The impacts appeared to have been caused by the failure of erosion and sediment control measures. The VWP Permit does not authorize these impacts.

Legal Requirements: The Cover Page of VWP Permit No. 10-1787 states, “The activities shall result in the permanent impact of no more than 0.012 acre of tidal forested wetlands, 0.033 acre of palustrine forested wetlands, 0.078 acre of isolated palustrine scrub-shrub wetlands, 0.98 acre isolated palustrine emergent wetlands, 0.16 acre of palustrine emergent wetlands, 0.636 acre of open water, and 1,528 linear feet of stream channel. The activities shall result in the conversion of no more than 1.03 acres of tidal forested wetlands to scrub-shrub wetlands, and temporary impacts to no more than 0.994 acre of tidal forested wetland, 0.198 acre of palustrine forested wetlands, 0.01 acre of palustrine emergent wetlands, and 38 linear feet of stream channel. Permitted impacts shall be taken as illustrated on the plan sheets titled “Drawing 3: Jurisdictional Area Impacts Map”, by Golder Associates dated May 5, 2015 and “Figure 3: Modified Wetland Impact Map,” by Golder Associates dated August 10, 2015 and modified on September 14, 2016.”

Part I.C.22 of VWP Permit No. 10-1787 states, “Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992, or the most recent version in effect at the time of construction. These controls shall be placed prior to clearing and grading activities and shall be maintained in good working order, to minimize impacts to surface waters. These controls shall remain in place only until clearing and grading activities cease and these areas have been stabilized.”

Va. Code §62.1-44.15:20(A) states, “A. Except in compliance with an individual or general Virginia Water Protection Permit issued in accordance with this article, it shall be unlawful to: 1. Excavate in a wetland; 2. On or after October 1, 2001, conduct the following in a wetland: a. New activities to cause draining that significantly alters or degrades existing wetland acreage or function; b. Filling or dumping; c. Permanent flooding or impounding; or d. New activities that cause significant alteration or degradation of existing wetland acreage or functions; or 3. Alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses unless authorized by a certificate issued by the Board.”

9VAC 25-210-50 (A) states, “Except in compliance with a VWP permit, no person shall dredge, fill or discharge any pollutant into, or adjacent to surface waters, withdraw surface water, otherwise alter the physical, chemical or biological properties of surface waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses; excavate in wetlands or on or after October 1, 2001, conduct the following activities in a wetland: 1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions; 2. Filling or dumping; 3. Permanent flooding or impounding; or 4. New activities that cause significant alteration or degradation of existing wetland acreage or functions.”

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

FUTURE ACTIONS

DEQ staff wishes to discuss all aspects of their observations with you, including any actions needed to ensure compliance with state law and regulations, any relevant or related measures you plan to take or have taken, and a schedule, as needed, for further activities. In addition, please advise us if you dispute any of the observations recited herein or if there is other information of

Dominion Energy Services – Chesterfield Power Plant
VPDES Permit No. VA0004146
VWP Permit No. 10-1787
Notice of Violation
Page 6 of 6

which DEQ should be aware. In order to avoid adversarial enforcement proceedings, Dominion Energy Services may be asked to enter into a Consent Order with the Department to formalize a plan and schedule of corrective action and to settle any outstanding issues regarding this matter, including the assessment of civil charges.

In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf or ask the DEQ contact listed below.

Please contact Frank Lupini at (804) 698-4187 or via email to Frank.Lupini@deq.virginia.gov within 10 days to discuss this matter.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: H. Deihls – PRO Water Compliance Manager (electronic copy)
A. Bilalagic – PRO Water Compliance Inspector (electronic copy)
C. Witte - PRO VWP Permits Inspector
J. Bryan – PRO Water Permits (electronic copy)
J. Kazio – PRO PREP Coordinator (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to Beverly.Wood@dominionenergy.com)
J. Williams – Dominion Generation Environmental Services (electronic copy to Jason.E.Williams@dominionenergy.com)
File/ECM



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4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Jeffery A. Steers
Regional Director

August 1, 2017

Cathy Taylor, Director, Electric Environmental Services
Dominion – Chesterfield Power Station
500 Coxendale Rd.
Chester, VA 23831

WARNING LETTER

RE: **WL # W2017-07-P-1008**
Dominion – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ or the Department) has reason to believe that Dominion's Chesterfield Power Station may be in violation of the State Water Control Law and Regulations.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). **Due to the adequacy of information in your email dated July 10, 2017 no response to this correspondence is required.**

OBSERVATIONS AND LEGAL REQUIREMENTS

- a) **Observation:** On July 5, 2017 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge consisted of 277,000 gallons and started at approximately 5:40 p.m. and had ceased by 6:20 p.m.

Legal Requirement: Part I.C.3. of VPDES Permit VA0004146 effective October 1, 2016 states *"Any and all product, materials, industrial wastes, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized."* In addition, Part II.R states *"Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters."*

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty of not more than \$10,000. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

The Court has the inherent authority to enforce its injunction, and is authorized to award the Commonwealth its attorneys' fees and costs.

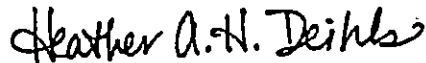
FUTURE ACTIONS

No response to this correspondence is required. However, if you have additional information please provide it within 20 days of the date of this letter. *It is DEQ policy that appropriate, timely, corrective action undertaken in response to a Warning Letter will avoid adversarial enforcement proceedings and the assessment of civil charges or penalties.*

Please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" (http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf) or ask the DEQ contact listed below.

Your point of contact at DEQ in this matter is Ms. Azra Bilalagic. Please direct written materials to her attention. If you have questions or wish to arrange a meeting, you may reach Ms. Bilalagic at (804) 527-5011 or via email to Azra.Bilalagic@deq.virginia.gov.

Sincerely,



Heather A. H. Deihls
Water Compliance Manager

cc: File/ECM
J. Bryan – DEQ-PRO VPDES Permits (electronic copy)
A. Bilalagic – DEQ-PRO Water Compliance (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to Beverly.Wood@dominionenergy.com)
J. Williams – Dominion Generation Environmental Services (electronic copy to Jason.E.Williams@dominionenergy.com)



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PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

December 6, 2016

Cathy Taylor, Director, Electric Environmental Services
Dominion – Chesterfield Power Station
500 Coxendale Rd.
Chester, VA 23831

WARNING LETTER

RE: **WL # W2016-11-P-1003**
Dominion – Chesterfield Power Station
VPDES Permit No. VA0004146 (reissued/effective October 1, 2016)
VPDES Industrial Stormwater General Permit No. VAR051023 (effective July 1, 2014)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ or the Department) has reason to believe that Dominion's Chesterfield Power Station may be in violation of the State Water Control Law and Regulations.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15(8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* (APA). **DEQ requests that you respond within 20 days of the date of this letter.**

OBSERVATIONS AND LEGAL REQUIREMENTS

- a) **Observation:** On September 28 through September 29, 2016 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to Aiken Swamp. The facility estimated that the unauthorized discharge started at approximately 10:00 p.m. on September 28, 2016 and had ceased by 1:00 a.m. on September 29, 2016.

Legal Requirement: Part I.B.3. of VPDES Permit VA0004146 effective December 10, 2004 states "Any and all product, materials, industrial wastes, and/or storage of raw or

intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized." In addition, Part II.R states "Solids, sludges, or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters."

- b) **Observation:** On September 28 through September 29, 2016 an overflow from the Coal Pile Runoff Pond occurred resulting in a discharge of raw coal fines to stormwater Outfall 055 via curb inlets located on the parking lot in the vicinity of the coal pile. This outfall discharges to the James River.

Legal Requirement: Part I.B.1 of VPDES Permit VAR051023 effective July 1, 2014 states "Allowable non-stormwater discharges. Except as provided in this section or in Part IV, all discharges covered by this permit shall be composed entirely of stormwater..." , Va. Code § 62.1-44.5(A) states "[e]xcept in compliance with a certificate or permit issued by the Board or other entity authorized by the Board to issue a certificate or permit pursuant to this chapter, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; 2. Excavate in a wetland; 3. Otherwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses" and 9 VAC 25-31-50 (A) states "[e]xcept in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to: 1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or 2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses."

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, an order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of the same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty of not more than \$10,000. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

The Court has the inherent authority to enforce its injunction, and is authorized to award the Commonwealth its attorneys' fees and costs.

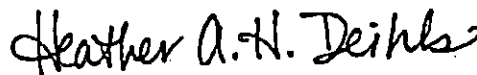
FUTURE ACTIONS

After reviewing this letter, please respond in writing to DEQ within 20 days of the date of this letter detailing actions you have taken or will be taking to ensure compliance with state law and regulations. If corrective action will take longer than 90 days to complete, you may be asked to sign a Letter of Agreement or enter into a Consent Order with the Department to formalize the plan and schedule. *It is DEQ policy that appropriate, timely, corrective action undertaken in response to a Warning Letter will avoid adversarial enforcement proceedings and the assessment of civil charges or penalties.*

Please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. Also, if informal discussions do not lead to a satisfactory conclusion, you may request in writing that DEQ take all necessary steps to issue a final decision or fact finding under the APA on whether or not a violation has occurred. For further information on the Process for Early Dispute Resolution, please see Agency Policy Statement No. 8-2005 posted on the Department's website under "Programs," "Enforcement," and "Laws, Regulations, & Guidance" (http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/Guidance/process%20for%20early%20dispute%20resolution%20no8_2005.pdf) or ask the DEQ contact listed below.

Your point of contact at DEQ in this matter is Ms. Azra Bilalagic. Please direct written materials to her attention. If you have questions or wish to arrange a meeting, you may reach Ms. Bilalagic at (804) 527-5011 or via email to Azra.Bilalagic@deq.virginia.gov.

Sincerely,



Heather A. H. Deihls
Water Compliance Manager

cc: File/ECM
J. Bryan and J. Abel – DEQ-PRO VPDES Permits (electronic copy)
A. Bilalagic – DEQ-PRO Water Compliance (electronic copy)
B. Wood – Dominion Chesterfield Power Station (electronic copy to Beverly.Wood@dom.com)
A. Boschen - Dominion Electric Environmental Services (electronic copy to amelia.h.boschen@dom.com).



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4949-A Cox Road, Glen Allen, Virginia 23060 .

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

March 01, 2011

Ms. Cathy C. Taylor, Director, Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: WL # W2011-02-P-1015
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:

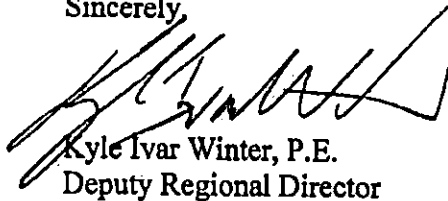
The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

- a) On January 03, 2011 the DEQ-PRO received notification of an unpermitted discharge of approximately 150-200 gallons of 'ash sluice water' that was discharged to the James River via permitted outfall 005. A follow-up report received on January 06, 2011 indicated that the cause of the unpermitted discharge was due to 'a pipe failure in the Unit 6 fly ash sluice piping' and that 'a new pumping skid is currently in place and being tied in to station systems'.

As adequate permit required information has been provided in regards to this particular incident, no response to this correspondence is necessary. However, if additional information has been obtained please provide it, in writing, within 20 days of receipt of this letter. Any additional information will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Be aware that continued facility compliance may be verified by on-site inspection or other appropriate means.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
S. Morris – DEQ-PRO Pollution Response (electronic copy)
File/ECM



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4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

February 26, 2010

Ms. Cathy C. Taylor, Director of Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: **WL # W2010-02-P-1008**
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:


The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

- a) On February 2, 2010 the DEQ-PRO received notification of an unpermitted discharge of approximately 270 gallons of 'ash sluice water' that was discharged to the James River via permitted outfall 003. A follow-up report received on February 10, 2010 indicated that the cause of the unpermitted discharge was due to 'a pipe failure in the #6 bottom ash sluice piping system' and that an engineering review to minimize the risk associated with the ash sluice piping was ongoing.

As adequate permit required information has been provided in regards to this particular incident, no response to this correspondence is necessary. However, if additional information has been obtained please provide it, in writing, within 20 days of receipt of this letter. Any additional information will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Be aware that continued facility compliance may be verified by on-site inspection or other appropriate means.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
File/ECM



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PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

December 22, 2009

Ms. Cathy C. Taylor, Director of Electric Environmental Services
Dominion Virginia Power
5000 Dominion Blvd.
Glen Allen, VA 23060

WARNING LETTER

RE: WL # W2009-12-P-1004
Dominion Virginia Power – Chesterfield Power Station
VPDES Permit No. VA0004146 (effective December 10, 2004)

Dear Ms. Taylor:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that the Dominion Virginia Power – Chesterfield Power Station may be in violation of State Water Control Law. A review of our files has revealed the following:

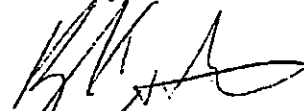
- a) On October 18, 2009 the DEQ-PRO received notification of an unpermitted discharge of approximately 175 gallons of 'ash sluice water' through the sparger channel (Outfall 003). The report indicated that the cause of the unpermitted discharge was due to 'a line rupture in the #6 Bottom Ash System'. A follow-up report received at the DEQ-PRO on October 23, 2009 indicated that the unpermitted discharge occurred through Stormwater Outfall 005.

Please review the above and submit a written explanation within 20 days of receipt of this letter clarifying which outfall was affected by the unpermitted discharge which occurred on October 18, 2009. In addition, please ensure that the response also addresses Part II.G.8, specifically "Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit."

Your letter will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Continued facility compliance may be verified by on-site inspection or other appropriate means. If corrective action will take longer than 90 days please submit a plan and schedule for inclusion in a Letter of Agreement or Consent Order. Failure to respond may result in enforcement action by DEQ.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Ms. Meredith Williams** at (804) 527-5017. Please contact her if you have any questions about the content of this letter or need additional guidance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kyle Iyar Winter', is written over a horizontal line.

Kyle Iyar Winter, P.E.
Deputy Regional Director

cc: M. Williams – DEQ-PRO Water Compliance (electronic copy)
E. Carpenter – DEQ-PRO Water Permitting (electronic copy)
File/ECM

2. Data Request 3-2 (sent March 29, 2019—due April 8, 2019):

For each location (original and relocation sites) where the Company has disposed of CCR, please provide:

- k. All reports and notes that describe any problems or potential risks associated with the site.
- l. All reports from consultants regarding the site.
- m. All reports and communications from regulatory authorities regarding the site.
- n. All Company notes, reports, and communications in response to the foregoing information from consultants and regulatory authorities, including any presented to or made available to the Board of Directors for VEPCO, Dominion Energy, and affiliates of Dominion Energy.

Response to Data Request 3-2 (received April 18, 2019):

Readily available non-privileged records have been provided in the following attachments in response to the above questions:

- Attachment Public Staff Set 3-2a (JW) – This attachment includes readily available reports prepared to address groundwater risks and corrective action, to the extent their preparation was necessary. This attachment is responsive to subrequests a. and b.
- Attachment Public Staff Set 3-2b (JW) – This attachment includes readily available records of regulatory communications largely including inspection reports issued by regulatory agencies. This attachment is responsive to c.
- Attachment Public Staff Set 3-2c (JW) – This attachment includes readily available dam stability reports associated with the Company's coal ash impoundments. This attachment is responsive to a. and b.

As of the date of this response, no documents responsive to subrequest d. have been identified.

3. Data Request 3-3 (sent March 29, 2019—due April 8, 2019):

For each location (original and relocation sites) that has reported groundwater contamination or has otherwise been out of compliance with any laws, regulations, and other legal commitments involving disposal of CCR, including groundwater and surface water contamination and dam safety, please provide¹:

- a. A description of the nature of the non-compliance and which laws, regulations, and legal commitments applied.
- b. The Company's reports and analysis on the cause of the non-compliance including any presented to or made available to the Board of Directors for VEPCO, Dominion Energy, and affiliates of Dominion Energy.
- c. How and when the non-compliance was corrected or otherwise addressed.
- d. A detailed itemized cost accounting for the Company's response to the non-compliance, including administrative, legal and indirect costs as well as direct remediation costs.

¹ Please include in the response any situations in which the Company is potentially out of compliance; that is, situations where there is a likelihood the Company is out of compliance based on known conditions but may not yet have the monitoring data or other information to establish whether it was or is out of compliance.

Response to Data Request 3-3 (received April 18, 2019):

None of the Company's CCR disposal sites are or have been out of compliance with groundwater concentrations. Detection of a groundwater result above the applicable groundwater protection standard, on its own, is not a violation. A result above an applicable standard simply triggers additional action to characterize the condition of the groundwater and initiate corrective action, if necessary. The Company has followed all required actions relating to groundwater standards. However, the Company's CCR disposal sites located at Bremono, Clover, Mt. Storm, Possum Point, and Yorktown have received notifications of minor environmental non-compliance incidents for non-groundwater requirements. Information regarding readily available records of those non-compliance incidents is included in the Company's response to Question No. 5 of Public Staff's Third Set.

4. Data Request 3-5 (sent March 29, 2019—due April 8, 2019):

Please provide a list of all administrative or regulatory findings of environmental non-compliance, including

- a. Any communication from a regulatory state agency indicating non-compliance at CCR sites, including findings of environmental non-compliance for which a Notice of Violation or "NOV" was or was not issued.
- b. A list by date, location, event, and resolution of regulatory non-compliance events since January 1, 1980. Please indicate in the list whether the event or finding was related to CCR or not.
- c. A list of all situations at CCR locations that have or will require corrective action and the reason why corrective action is needed.

Response to Data Request 3-5 (received April 18, 2019):

The Company's CCR disposal sites located at Bremono, Clover, Mt. Storm, Possum Point, and Yorktown have received notifications of minor environmental non-compliance incidents associated with CCR operations. Readily available records of these non-compliance events have been provided in Attachment Public Staff Set 3-5 (JW).

5. Data Request 3-10 (sent March 29, 2019—due April 8, 2019):

Please provide the month and year when groundwater monitoring was first required for each ash basin. That is, when did the obligation to monitor begin basin by basin? Also please state the source of the requirement (e.g., NPDES permit, special consent order, or other).

Response to Data Request 3-10 (received April 18, 2019):

The table included in Attachment Public Staff Set 3-10 (JW) provides the first year of groundwater results identified in our groundwater database. It is assumed the obligation to monitor began at the same time as the Company has no record of voluntary groundwater monitoring conducted prior to being required to do so under the station's VPDES permit and/or CCR Rule requirements.

Revised Response to Data Request 3-10 (received August 16, 2019):

The table included in Attachment Public Staff Set 3-10 JW provides the first year of groundwater results identified in our groundwater database. Based upon information and belief, knowledge of the Company's history of monitoring and discussions with other employees, the Company understands that the obligation to monitor began at the same time. The Company has no record of voluntary groundwater monitoring conducted prior to being required to do so under the station's VPDES permit and/or CCR Rule requirements.

6. Data Request 3-11 (sent March 29, 2019—due April 8, 2019):

Please provide a spreadsheet showing the number of required and voluntary groundwater monitoring wells that were installed, the source of the requirement, where they were installed (plant name, whether each well was at, beyond, or inside the site boundary, and whether each well was up-gradient or downgradient), when they were installed, and if any of these wells provided data that indicated contaminants from coal ash were migrating from each ash basin. For wells that provided data showing exceedances, please state the dates that the exceedances were identified in well samples, the type (constituent) for each exceedance, whether the exceedance was due to natural background levels or due to coal ash or if there was insufficient background data to determine, and what corrective action was taken and when it was taken with respect to each exceedance.

Response to Data Request 3-11 (received April 18, 2019):

Attachment Public Staff Set 3-11a (JW) and Attachment Public Staff Set 3-11b (JW) include the readily available information responsive to this question. Attachment Public Staff Set 3-11a (JW) includes the readily available annual groundwater monitoring reports for each CCR disposal unit. These monitoring reports detail any exceedances of groundwater protection standards and actions taken in response to these concentrations. These reports are included for both CCR Rule and VPDES monitoring. Attachment Public Staff Set 3-11b (JW) includes the readily available CCR Rule and VPDES permit groundwater monitoring plans which identify the monitoring networks and well information.

7. Data Request 3-14 (sent March 29, 2019—due April 8, 2019):

Please state how many groundwater monitoring wells VEPCO had in place cumulatively prior to 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.

Response to Data Request 3-14 (received April 18, 2019):

The table included in Attachment Public Staff Set 3-10 (JW) is provided to identify the number of wells at each generating plant based on readily available records. Based on these records, the total number of wells for the various groundwater monitoring programs could only be confirmed back to the year 2000.

8. Data Request 3-15 (sent March 29, 2019—due April 8, 2019):

Please identify, by plant and basin location, which seeps are authorized in NPDES permits, and which are not.

- a. For the seeps not authorized by NPDES permits (including those for which permit applications are pending), please explain whether VEPCO contends they were or were not violations of NPDES permit requirements, or violations of Virginia's § 62.1-44.15 or West Virginia's § 22-11-6, and why.
- b. Please include whether the seep is an engineered seep or not.
- c. Please provide the date the seep was first identified and, if applicable, the year the seep was eliminated.

Response to Data Request 3-15 (received April 18, 2019):

There are no NPDES permitted or unpermitted seeps associated with VEPCO's CCR impoundments. VEPCO understands the term "seep" to mean a channelized flow of water emanating from the berm of an impoundment that does or has the potential to reach surface waters.

9. **Data Request 3-16 (sent March 29, 2019—due April 8, 2019):**

Please provide copies of all current and historic NPDES permits by plant site.

Response to Data Request 3-16 (received April 18, 2019):

Current and readily available prior NPDES permits are provided in Attachment Public Staff Set 3-16 (JW).

10. Data Request 3-17 (sent March 29, 2019—due April 8, 2019):

Please provide a list of all NPDES permit violations (other than groundwater exceedances and violations) for each VEPCO coal plant site from January 1, 2009 through January 1, 2019. Please include facility reporting errors and the reason for each error.

Response to Data Request 3-17 (received May 22, 2019):

Please see Attachment Public Staff Set 3-5 (JW).

11. Data Request 3-18 (sent March 29, 2019—due April 8, 2019):

For all current or former coal generating stations, please provide a spreadsheet of groundwater monitoring data taken at or beyond the site boundary for regulated coal ash constituents in each ash basin. Please include the following:

- a. For each sample, include the sample collection date, monitoring well identification, location with respect to groundwater flow direction, elevation of the top of the well casing, the ground, and top and bottom of the well screen, water level or elevation of groundwater, and aquifer formation.
- b. Only include any exceedances of the Virginia and West Virginia groundwater standards.
- c. Include the most recent data from monitoring wells, as well as historical data dating back to when monitoring wells were installed.
- d. Provide any proposed groundwater standards (e.g., action levels or background standards) that VEPCO has provided to Virginia or West Virginia regulatory authorities. Please indicate the status of the regulatory authority's review and acceptance, if applicable, of such standards.
- e. Where naturally occurring substances exceed the Virginia or West Virginia groundwater standards, highlight or bold any exceedances of the State standard, and include information regarding the background concentration of the contaminant if it exceeds that standard.
- f. Include for each constituent the total number of exceedances, both before and after consideration of any background standard.

Response to Data Request 3-18 (received May 22, 2019):

Attachment Public Staff Set 3-11a (JW) includes the readily available annual groundwater monitoring reports for each CCR disposal unit. These monitoring reports detail any exceedances of groundwater protection standards and actions taken in response to these concentrations. These reports are included for both CCR Rule and VPDES monitoring.

12. Data Request 3-19 (sent March 29, 2019—due April 8, 2019):

For all current or former coal generating stations, please provide a spreadsheet of groundwater monitoring data taken inside the site boundary for regulated coal ash constituents in each ash basin. Please include the following:

- d. For each sample include the sample collection date, monitoring well identification, location with respect to groundwater flow direction, location with respect to the waste boundary, elevation of the top of the casing, the ground, and top and bottom of the well screen, water level or elevation of groundwater, aquifer formation,
- e. Only include any exceedances of the Virginia and West Virginia groundwater standards.
- f. Include the most recent data from monitoring wells, as well as historical data dating back to when monitoring wells were installed.
- g. Provide any proposed groundwater standards (e.g., action levels or background standards) that VEPCO has provided to Virginia or West Virginia regulatory authorities. Please indicate the status of the regulatory authority's review and acceptance, if applicable, of such standards.
- h. Where naturally occurring substances exceed the Virginia or West Virginia groundwater standards, highlight or bold any exceedances of the State standard, and include information regarding the background concentration of the contaminant if it exceeds that standard.
- i. Include for each constituent the total number of exceedances, both before and after consideration of any background standard.

Response to Data Request 3-19 (received May 22, 2019):

Attachment Public Staff Set 3-11a (JW) includes the readily available annual groundwater monitoring reports for each CCR disposal unit. These monitoring reports detail any exceedances of groundwater protection standards and actions taken in response to these concentrations. These reports are included for both CCR Rule and VPDES monitoring.

13. Data Request 3-20 (sent March 29, 2019—due April 8, 2019):

Similar to data request items 19 and 20 above, for all generating stations, please provide a spreadsheet showing the monitoring data and any exceedances of constituents being monitored in compliance with the CCR rule groundwater requirements, including maximum contaminant levels and Groundwater Protection Standards (GWPS). Please include the total number of exceedances by site and constituent of the GWPS. Please provide a narrative statement of how federal CCR Rule groundwater protection requirements and standards differ from Virginia and West Virginia's groundwater standards, and how any such differences affect groundwater monitoring procedures and reporting.

Response to Data Request 3-20 (received May 22, 2019):

Attachment Public Staff Set 3-11a (JW) includes the readily available annual groundwater monitoring reports for each CCR disposal unit. These monitoring reports detail any exceedances of groundwater protection standards and actions taken in response to these concentrations. These reports are included for both CCR Rule and VPDES monitoring.

14. Data Request 41-3 (sent May 7, 2019—due May 17, 2019):

In response to PS DR-3, Question 10, DENC provided a table (Attachment Public Staff Set 3-10 (JW)) showing the year in which groundwater monitoring was first required for each ash basin. For each ash basin, please provide:

- a. A detailed explanation as to why the Company was required to begin groundwater monitoring under the terms of its VPDES permit.
- b. All reports and communications from regulatory authorities regarding the addition of groundwater monitoring requirements to the VPDES permit.
- c. All Company notes, reports, and communications concerning the addition of groundwater monitoring requirements to the VPDES permit.

Response to Data Request 41-3 (received May 22, 2019):

- a. The Virginia Department of Environmental Quality (VDEQ) began requiring groundwater monitoring in VPDES permits for wastewater ponds in the 1980s. Some background on this decision is provided in Guidance Document 98-2010 that was issued by VDEQ in 1998 (See Attachment Public Staff Set 41-3 JW). The guidance issued in 1998 was not specific to coal ash ponds, but rather all waste water impoundments.
- b. All readily available VPDES permits and groundwater communications have been provided in DENC's response to Public Staff Set 3.
- c. All readily available reports and communications regarding groundwater monitoring have been provided to DENC's response to Staff Set 3.

15. Data Request 41-4 (sent May 7, 2019—due May 17, 2019):

In response to PS DR-3, Question 11, DENC states that the attached responses include all “readily available information” responsive to the question. In response to Question 13, DENC states that it has no “readily available records” related to voluntary groundwater monitoring. In response to Question 14, DENC states that its response is based on “readily available records.” In response to Question 16, DENC states it is providing all “readily available” prior permits. In response to Questions 18, 19, and 20, DENC states it provides the “readily available” groundwater reports

- a. How does the Company define “readily available” throughout its responses?
- b. Have any documents been identified as responsive to these requests since the date of the response? If so, please provide those documents.
- c. What search parameters were used to identify records, such as search terms and dates?
- d. Please provide any newly available responses to Questions 11, 13, 14, 16, 18, 19, and 20 on a continuing basis for the period of this proceeding.

Response to Data Request 41-4 (received May 22, 2019):

- a. “Readily available records” means records in the Company’s possession or control that were identified after a reasonable inquiry and thorough search of the Company’s files for responsive information.
- b. The Company has not identified any responsive documents.
- c. The Company has reviewed its records stored at each plant as well as records held by groups within the Company reasonably expected to possess responsive information.
- d. The Company will comply with its obligations to supplement its responses to discovery requests under the North Carolina Rules of Civil Procedure.

16. Data Request 41-5 (sent May 7, 2019—due May 17, 2019):

In response to PS DR-3, Question 14, DENC states that the number of wells for various groundwater monitoring programs could only be confirmed back to the year 2000. The attached response, Attachment Public Staff Set 3-10 (JW), however, indicates first sampling data from groundwater monitoring wells from the 1980s. Please provide further information about the groundwater monitoring well data from before 2000 and why groundwater monitoring programs before 2000 cannot be confirmed by DENC.

Response to Data Request 41-5 (received May 22, 2019):

The term "further information" as used in this request is overbroad, vague, and ambiguous. The documents provided in response to Public Staff Requests 3-10, 3-11, and 3-16 reflect the available information in the Company's possession and control regarding VDEQ's groundwater monitoring program. The guidance document provided herewith, Attachment Public Staff Set 41-3 JW, provides some background on VDEQ's groundwater monitoring program before 2000.

17. Data Request 41-6 (sent May 7, 2019—due May 17, 2019):

In response to PS DR-3, Question 15, DENC states that "VEPCO understands the term 'seep' to mean a channelized flow of water emanating from the berm of an impoundments that does or has the potential to reach surface waters." Please identify, by plant and basin location, which discharges are authorized in NPDES permits, and which are not. Please include all engineered and non-engineered discharges, including all locations in which a pollutant is conveyed, in any manner, from an impoundment to waters of the United States or a water of the State.

- a. For the discharges not authorized by NPDES permits (including those for which permit applications are pending), please explain whether VEPCO contends they were or were not violations of NPDES permit requirements, or violations of Virginia's § 62.1-44.15 or West Virginia's § 22-11-6, and why.
- b. Please include whether the discharge was engineered or not.
- c. Please provide the date the discharge was first identified and, if applicable, the year the discharge was eliminated.

Response to Data Request 41-6 (received May 22, 2019):

- a. The Company is not aware of any unauthorized or unpermitted discharges from its basins. Permitted discharges are reflected in the NPDES permits that were provided in response to Request 3-16.
- b. Not applicable.
- c. Not applicable.

18. Data Request 60-1 (sent May 23, 2019—due June 3, 2019):

The Company's response to Public Staff Data Request No. 3-5 contained several folders regarding environmental non-compliance at the Bremo, Clover, Mt. Storm, Possum Point, and Yorktown power plants. Please provide a response to this data request for the Chesterfield, Mecklenburg, and Virginia City power plants.

Response to Data Request 60-1 (received May 31, 2019):

All responsive documents in the Company's possession and control have been provided. The Company is not aware of non-compliance events at Chesterfield, Mecklenburg, and Virginia City related to CCR. As previously stated, there are no coal ash ponds or landfills at Mecklenburg.

19. Data Request 61-1 (sent May 28, 2019—due June 7, 2019):

With regard to the Company's record retention policies, please provide the following:

- a. The Company's current record retention policy, with a date indicating when that policy was put in place.
- b. All previous versions of the Company's record retention policy, with dates indicating when those policies were in place.
- c. Any state or federal laws or regulations that govern the retention of records by the Company.

Response to Data Request 61-1 (received June 7, 2019):

- a. The current records retention policy effective as of 2014 for the Environmental Services Department is included in Attachment Public Staff Set 61-1 JW.
- b. The Company has only located one prior record retention policy for the Environmental Services Department, effective May 6, 2005, which is being produced herewith as Attachment Public Staff Set 61-1 JW. Prior to May 6, 2005, the Company would have complied with the applicable regulatory retention requirements.
- c. Please see the policies included in Attachment Public Staff Set 61-1 JW. Additionally, the Company is subject to North Carolina Utilities Commission regulation R8-28 and State Corporation Commission Rule 20 VAC 5-300-40.

20. Data Request 61-3 (sent May 28, 2019—due June 7, 2019):

In response to a question by the Public Staff, the Company stated that it has possession of static spreadsheets containing groundwater monitoring well data for dates prior to 2000 for its coal-fired generating stations.

- a. Please provide those spreadsheets.
- b. Please describe the source for the static spreadsheets (e.g., name and type of database), who was/is custodian of the source, and whether it currently exists in any form or location.

Response to Data Request 61-3 (received June 7, 2019):

- a. The spreadsheets are provided in Attachment Public Staff Set 61-3 JW.
- b. The source of the spreadsheets is an export from a database that was managed by URS, which is now AECOM. That database was closed out in 2018 as the Company no longer uses AECOM as a groundwater consultant. When AECOM closed out the database, it provided the Company with the spreadsheets for our records, which contains the data that was stored in the database.

21. Data Request 61-4 (sent May 28, 2019—due June 7, 2019):

In response to a question by the Public Staff, the Company stated that it previously maintained a database of groundwater monitoring well data. Please provide clarification as to why the database no longer exists, whether the Company has contacted the contractor that previously maintained the database, and whether the static spreadsheets referred to above include all the data from the database.

Response to Data Request 61-4 (received June 7, 2019):

The source of the spreadsheets is an export from a database that was managed by URS, which is now AECOM. That database was closed out in 2018 as the Company no longer uses AECOM as a groundwater consultant. When AECOM closed out the database, it provided the Company with the spreadsheets for our records, which contains the data that was stored in the database.

22. Data Request 81-7 (sent June 5, 2019—due June 17, 2019):

The Company response to Public Staff Data Request 3, item 3, states:

None of the Company's CCR disposal sites are or have been out of compliance with groundwater concentrations. Detection of a groundwater result above the applicable groundwater protection standard, on its own, is not a violation. A result above an applicable standard simply triggers additional action to characterize the condition of the groundwater and initiate corrective action, if necessary. The Company has followed all required actions relating to groundwater standards. However, the Company's CCR disposal sites located at Bremono, Clover, Mt. Storm, Possum Point, and Yorktown have received notifications of minor environmental non-compliance incidents for non-groundwater requirements. Information regarding readily available records of those non-compliance incidents is included in the Company's response to Question No. 5 of Public Staff's Third Set.

- a. Please respond to Public Staff Data Request 3, item 3, for all instances where groundwater exceedances were detected. That is, whether or not the Company considers an exceedance of Maximum Contaminant Levels (MCLs), Groundwater Protection Standards (GWPS), or other regulatory standards for constituents in groundwater to be a non-compliance, or not, please respond to DR 3-3 for all exceedances.
- b. For each current and former coal-fired generating station, please provide two tables (in xcel spreadsheet) showing the number of exceedances (one for the VDEQ MCL and one for the CCR Rule GWPS) by year and by constituent (i.e. arsenic, manganese, total suspended solids, etc.). A sample template is below, but when completing the tables please include all years and all constituents:

Bremono

	Arsenic	Boron	Mercury	Selenium
2000				
2001				
2002				
2003...				

Chesapeake

	Arsenic	Boron	Mercury	Selenium
1983				
1984				
1985				
1986...				

For the purposes of this request, an exceedance means any laboratory analysis result (including historical) of water sample(s) taken from a downgradient groundwater monitoring well and showing constituents above the regulatory standard such as the MCL or GWPS. Please indicate everywhere that an exceedance is above the regulatory standard but is below the established background levels.

Response to Data Request 81-7 (received June 17, 2019):

a. The Company believes that it fully and completely responded to Public Staff Set 3, question 3, which specifically relates to “non-compliance” events. As the Company stated in its response, the Company’s CCR sites have not been out of compliance with groundwater standards. An exceedance of a groundwater protection standard is not considered a violation or “non-compliance”. When there have been exceedances of groundwater standards requiring corrective action as determined by VADEQ, those incidences were documented in the groundwater reports provided in response Public Staff Set 3 and were corrected to the satisfaction of VADEQ. GWPS were adopted pursuant to the CCR Rule in 2015 and did not apply prior to the promulgation of the CCR Rule. Groundwater data and reports collected pursuant to the CCR Rule are available publicly at: <https://www.dominionenergy.com/company/community/environment/reports-and-performance/ccr-rule-compliance-data-and-information>. The Company is happy to discuss this further.

b. Groundwater monitoring data was provided in response to Public Staff Set 61. Please also see the Company’s responses to Public Staff Set 3, which contain the available groundwater reports, with data, and corrective actions taken to resolve the documented groundwater exceedances. Please also see the Company’s CCR Rule reports, which compare the Company’s groundwater quality to the newly adopted GWPS under the CCR Rule.

23. Data Request 100-1 (sent June 24, 2019—due July 5, 2019):

With regard to the Bremo facility:

- a. According to the Company's response to DR 3-10, Dominion has been required to conduct groundwater monitoring at the Bremo facility since the year 2000. Please confirm that this is the earliest date that groundwater monitoring was conducted at the Bremo facility.
- b. In response to DR 3-11, the Company provided VPDES Annual Reports for the Bremo facility for the years 2000, 2006, and 2015-2018. Please provide VPDES Annual Reports for the Bremo facility for each of the missing years 2001-2005 and 2007-2014.
- c. In response to DR 61-3, the Company provided a static spreadsheet with groundwater monitoring data for the Bremo facility. This spreadsheet was limited to data from March 11, 2013 through March 29, 2017. Please provide the missing data from the year 2000 through March 2013, and from April 2017 through the date the AECOM database was closed in 2018.

Response to Data Request 100-1 (received July 5, 2019):

- a. Yes, this is the earliest record of groundwater sampling we have located after a thorough search for responsive information.
- b. After a thorough search for responsive information, all available reports have been provided in DR 3-11. There are no groundwater reports for the time period 2001-2005. The VPDES permit for Bremo only required groundwater sampling once every permit cycle (5 years). We have no record of groundwater results between 2007 and 2013. 2013-2018 data was provided in DR 61-3. The requirements for groundwater monitoring included in VPDES permits during the 80s-90s varied greatly between Virginia DEQ regional offices. As such, the date of first sampling as well as the frequency of sampling varied greatly from facility to facility during that time.
- c. Data for 2000 and 2006 are included in the annual reports provided in DR 3-11. All available data after a thorough search for responsive information has been provided. As stated in 1.b above, groundwater monitoring was not conducted during 2001-2005.

24. Data Request 100-2 (sent June 24, 2019—due July 5, 2019):

With regard to the Mt. Storm facility:

- a. According to the Company's response to DR 3-10, Dominion has been required to conduct groundwater monitoring at the Mt. Storm facility since the year 1987. Please confirm that this is the earliest date that groundwater monitoring was conducted at the Mt. Storm facility.
- b. In response to DR 3-11, the Company provided NPDES Semi-Annual Reports for the Mt. Storm facility for the years 2002 and 2004-2018. Please provide NPDES Semi-Annual Reports for the Mt. Storm facility for each of the missing years 1987-2001 and 2003.
- c. In the Company's response to DR 61-3, the folder labeled "Mt. Storm" was empty. Please provide the static spreadsheet containing groundwater monitoring data for the Mt. Storm facility.

Response to Data Request 100-2 (received July 5, 2019):

- a. Yes, this is the earliest record of groundwater sampling we have located after a thorough search for responsive information.
- b. All available reports after a thorough search for responsive information have been provided in DR 3-11.
- c. The Company has supplemented its response to DR 61-3 to include the requested spreadsheets.

25. Data Request 100-3 (sent June 24, 2019—due July 5, 2019):

With regard to the Possum Point facility:

- a. According to the Company's response to DR 3-10, Dominion has been required to conduct groundwater monitoring at the Possum Point facility since the year 1985. Please confirm that this is the earliest date that groundwater monitoring was conducted at the Possum Point facility.
- b. In response to DR 3-11, the Company provided VPDES Annual Reports for the Possum Point facility for the years 1999-2002 and 2004-2017. Please provide VPDES Annual Reports for the Possum Point facility for each of the missing years 1985-1998, 2003, and 2018.
- c. In the Company's response to DR 61-3, the folder labeled "Possum" was empty. Please provide the static spreadsheet containing groundwater monitoring data for the Possum Point facility.

Response to Data Request 100-3 (received July 5, 2019):

- a. Yes, this is the earliest record of groundwater sampling we have located after a reasonable inquiry and thorough search for responsive information.
- b. All available reports after a thorough search for responsive information have been provided in DR 3-11.
- c. The Company has supplemented its response to DR 61-3 to include the requested spreadsheets.

26. Data Request 100-5 (sent June 24, 2019—due July 5, 2019):

In response to DR 3-18 and 3-19, the Company referred the Public Staff to its responses to DR 3-11. As explained above, the Company's response to DR 3-11 was incomplete. In addition, DR 3-18 and 3-19 request the data in spreadsheet format, and request types of information not included in the request or response to DR 3-11. Please provide a complete response to DR 3-18 and 3-19 for each current and former coal-fired generating station in spreadsheet format.

Response to Data Request 100-5 (received July 5, 2019):

The Company's responses to DR 3-11, 3-18, and 3-19 are complete. With regards to the spreadsheets requested in 3-18 and 3-19, the Company does not maintain a spreadsheet in the format requested; however, the Company has provided the requested information in the format in which it is kept by the Company in the ordinary course of business. For the majority of stations, nearly twenty years of annual or semi-annual groundwater reports have been provided. Those reports contain all available information regarding any exceedances noted at that time. Prior to the CCR Rule, any exceedances of Virginia or West Virginia standards were addressed and resolved through VADEQ's or WVDEP's corrective action process. In addition, the Company provided in response to DR 61-3 spreadsheets with analytical groundwater data. With this response, the Company is also producing additional raw data for the most recent VPDES and Solid Waste Management reports to DEQ, along with the raw data for its CCR Rule compliance reports. Public staff has all available information to generate any variety of spreadsheets they feel are helpful.

27. **Data Request 100-6 (sent June 24, 2019—due July 5, 2019):**

In response to DR 81-7(b), the Company referred the Public Staff to its responses to DR 3-11 and DR 61-3. As explained above, the Company's responses to DR 3-11 and DR 61-3 were incomplete. In addition, DR 81-7(b) requests the data in spreadsheet format. Please provide a complete response to DR 81-7 for each current and former coal-fired generating station in spreadsheet format.

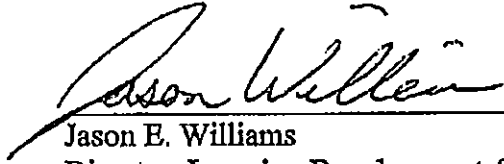
Response to Data Request 100-6 (received July 5, 2019):

The Company's responses to DR 3-11 and DR 61-3 are complete. With regards to the spreadsheets requested 81-7(b), the Company does not maintain a spreadsheet in the format requested; however, the Company has provided the requested information in the format in which it is kept by the Company in the ordinary course of business. For the majority of stations, nearly twenty years of annual or semi-annual groundwater reports have been provided. Those reports contain all available information regarding any exceedances noted at that time. Prior to the CCR Rule, any exceedances of Virginia or West Virginia standards were addressed and resolved through VADEQ's or WVDEP's corrective action process. In addition, the Company provided in response to DR 61-3 spreadsheets with analytical groundwater data. With this response, the Company is also producing additional raw data for the most recent VPDES and Solid Waste Management reports to DEQ, along with the raw data for its CCR Rule compliance reports. Public staff has all available information to generate any variety of spreadsheets they feel are helpful.

- b. With regards to coal ash environmental compliance, yes, the roles of Judson White, Cathy Taylor, and Jason Williams were effectively the same.
- c. Jason Williams assumed his coal ash environmental compliance role when he joined the company in August 2015.

Dominion Energy North Carolina
2019 NC Base Case – Docket No. E-22, Sub 562
Public Staff
Data Request No. 161

The following responses to Question No. 2 of Public Staff Data Request No. 161, dated August 7, 2019 has been prepared under my supervision.


Jason E. Williams
Director, Learning Development &
Communications
Dominion Energy Services, Inc.

Question No. 2:

Please provide any records or other information in the possession of A.W. Howard and Pamela Faggert (or the correct person as identified in response to question 1), and their direct reports identified in the provided organizational charts, that have not already been produced, pertaining to the following subjects of historical coal ash management decisions and practices:

- a. Each decision to line or leave unlined CCR basins, and what type of lining to use.
- b. The existence and/or elimination of any seeps or other unpermitted discharges, whether engineered or non-engineered, that had or have the potential to reach surface waters.
- c. The initial requirement for groundwater monitoring at each site and the response to the initial requirements.
- d. Whether corrective action was needed at any CCR disposal site on the basis of surface or groundwater monitoring results, and what corrective action planning took place.
- e. Whether any surface water or groundwater monitoring resulted in a decision that further monitoring was needed or no additional monitoring was needed, and why.
- f. Any corrective action or additional monitoring installed at each site after initial monitoring results demonstrated constituents above the regulatory threshold in place at the time in the groundwater or surface water.
- g. The risks of liability and the risks of exceedances of environmental requirements for groundwater and surface water at any CCR disposal sites.

Response:

After a thorough search for responsive information, all responsive documents for a.-g. have been provided in previous discovery responses. Cathy Taylor and Judson White are no longer Company employees. However, any records retained by those individuals would have been included in the files searched to respond to previous discovery requests. Likewise, Mr. Williams' files were included in the prior searches to produce those records previously provided.



*Cancelled
6/24/91*

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD
2111 Hamilton Street

Richard N. Burton
Executive Director

Post Office Box 11143
Richmond, Virginia 23230-1143
(804) 367-0056

STATE WATER CONTROL BOARD ENFORCEMENT ACTION

A SPECIAL ORDER

ISSUED TO

Virginia Power, Possum Point Station 9/12/89

This Special Order (hereinafter referred to as the "Order") is hereby issued by the State Water Control Board (hereinafter referred to as the "Board"), under the authority of Section 62.1-44.15(8a) of the Code of Virginia of 1950, as amended, (hereinafter referred to as the "Code"), to the Virginia Electric and Power Company (hereinafter referred to as "Virginia Power").

Virginia Power owns and operates an industrial wastewater treatment facility (hereinafter referred to as the "Facility"), which serves the Possum Point Power Station, and which is located in Dumfries, Virginia. The Facility discharges wastewater to State waters at Quantico Creek and the Potomac River Basin. Discharge of wastewater from the Facility is the subject of VPDES permit No. VA0002071 (hereinafter the "Permit"), which became effective April 26, 1985, and which will expire April 26, 1990.

Under a prior special order, effective April 14, 1987, Virginia Power was required to study groundwater contamination in the area of its two fly ash disposal ponds, D & E (hereinafter referred to as the "Site") at the Possum Point Power Station. The results of the study indicate that groundwater monitoring and remediation is required at the Site. Accordingly, the Board orders Virginia Power and Virginia Power agrees to implement the groundwater remediation and monitoring plan contained in Appendix A hereto and incorporated herein by reference.

Virginia Power waives its rights to service of, a hearing on, written findings of fact and conclusions of law in support of, and judicial review of this Order. Virginia Power agrees that the Board may cancel this Order, in its sole discretion, upon thirty days written notice, and that otherwise, the Order may be

modified only with Virginia Power's consent or after due notice and opportunity for hearing.

This Order shall become effective upon the date of its execution by the Board's Executive Director or his designee.


And it is SO ORDERED this 12 day of Sept, 1989.

State Water Control Board


Richard N. Burton
Executive Director

The terms and conditions of this Order are hereby voluntarily agreed to by the Virginia Electric and Power Company:

Virginia Electric and Power
Company

By: 
VP-F&H (Title)
Date: 2/6/89

State of Virginia
City/County of Henrico

The foregoing Order was executed before me this 10th day of June, 1989, by E. Wayne Harrell, V.P. - Fossil & Nuclear of Virginia Electric and Power Company, on behalf of said company.


Notary Public

My Commission Expires: February 1, 1992



APPENDIX A

GROUNDWATER REMEDIATION AND MONITORING PLAN

In order to address potential and existing groundwater contamination at the Site, Virginia Power shall:

1. Remediate the Site in accordance with the Final Conceptual Design Report for Dry Waste Disposal Site and Metals Pond Rehabilitation and Corrective Action Plan (hereinafter the "Corrective Action Plan"), prepared by GAI Consultants, Inc., dated November, 1988, and previously submitted to the Board, and shall additionally:
 - a. Submit to the Board's Northern Regional Office, on or before forty-five (45) days after the effective date of this Order, a water balance, affirming that the capacity of the metals pond and Pond E is adequate for treatment and/or neutralization of all incoming flow;
 - b. Submit to the Board's Northern Regional Office by December 19, 1989, the recommendation of consulting engineers concerning the treatment of any leachate collected from the dry waste disposal site. The method of leachate treatment selected should ensure that proper pH levels can be maintained in said leachate;
 - c. Submit an amended Construction Schedule with reference dates to the Board's Northern Regional Office within sixty (60) days of the effective date of this Order. Both the Board and Virginia Power recognize that construction schedule dates are predicated upon timely receipt of appropriate permits and approvals from Prince William County, the Virginia Department of Waste Management and the Board, and may require additional amendment. Upon commencement of construction, quarterly progress reports on the status of construction shall be submitted to the Board's Northern Regional Office, during the first year of construction.
2. Submit results of quarterly sampling of monitoring wells PP-1, 3B, ED-18, ED-21, ED-22, ED-23, and ED-24 to the Board's Northern Regional Office in accordance with the existing VPDES permit schedule.

Both the Board and Virginia Power agree that should trends indicative of an increase in pollutants be identified by the above referenced Corrective Action Plan, the Corrective Action Plan shall be re-evaluated by the Board and that new or additional remediation measures may be required by the Board. Plans and schedules for construction of any such remediation measures must be submitted to the Board within forty-five (45) days after completion of such re-evaluation.

II, A

**Public Staff - Lucas Exhibit 5
Docket No. E-22, Sub 562**

Station	Unit Name	Operating Years	Total Volume (CuYd)	Closure Method	Closure Timeframe	Regulatory Driver
Bremo	East Pond	1930s-1980s	327,323***	Removal	2019	CCR Rule/SB 1355
Bremo	North Pond	1983-2014	6,200,000****	Removal	2034	CCR Rule/SB 1355
Bremo	West Pond	1970s-2014	1,577,205***	Removal	2019	CCR Rule/SB 1355
CEC	Bottom Ash Pond	1985-2014	60,000	Removal	2034	CCR Rule/SB 1355
CEC	Historic Pond	1950s-1980s	1,150,000	Removal	2034	CCR Rule/SB 1355
CEC	Landfill	1985-2014	975,000	Removal	2034	CCR Rule/SB 1355
Chesterfield	Lower Ash Pond	1964-2017	3,600,000	Removal	2034	CCR Rule/SB 1355
Chesterfield	Reymet Rd Landfill	2017-Present	100,000	Closure in Place	TBD	CCR Rule/VSWMR
Chesterfield	Upper Ash Pond	1985-2017	11,300,000	Removal	2034	CCR Rule/SB 1355
Clover	FGD Basins	1995-Present	Deminimus*****	Removal	TBD	CCR Rule/VSWMR
Clover	Landfill	1995-Present	6,369,200	Closure in Place	TBD	CCR Rule/VSWMR
Mt. Storm	Low Volume Ponds	2016-Present	Deminimus	Removal	TBD	CCR Rule
Mt. Storm	Phase A&B Landfill	1986-Present	19,305,000	Closure in Place	TBD	CCR Rule
Possum Point	Pond D	1960s -1971; 1986-2003	4,000,000**	Removal	2034	CCR Rule/SB 1355
Possum Point	Pond E	1968-2003	1,329,463*	Removal	2019	CCR Rule/SB 1355
Possum Point	Ponds A, B, C	1955-1967	358,250*	Removal	2019	CCR Rule/SB 1355
VCHC	Landfill	2012-Present	7,435,929	Closure in Place	TBD	CCR Rule/VSWMR
Yorktown	Landfill	1985-Present	1,500,000	Closure in Place	2019	CCR Rule/VSWMR

* Ash originally disposed of in this impoundment has now been consolidated into Pond D.

** Includes the ash now removed from Ponds ABC and E and consolidated into D.

*** Ash originally disposed of in this impoundment has now been consolidated into the North Pond.

**** Includes the ash now removed from the East and West Ponds and consolidated into the North Pond.

***** FGD solid are routinely removed from the FGD sludge pond and taken to the Stage III landfill for disposal. Liquids are recirculated.

Note: All volumes above are estimates based on available design information combined with survey results. Dates of operation are also estimates and based on available records and communication with station personnel.

**Public Staff - Lucas Exhibit 6
Docket No. E-22, Sub 562**

		Retired Unit
		Active Unit
N/A		Equipment In
X		In use.

Station	Bremo	Chesapeake	Chesterfield				Clover	Mount Storm	NIB	Possum Point	Yorktown	VCHEC	Mecklenburg
Unit	Bremo 1 (Retired 1972)												
	Bremo 2 (Retired 1972)												
	Chesapeake 1 (Retired 2014)												
	Chesapeake 2 (Retired 2014)												
	Chesapeake 3 (Retired 2014)												
	Chesapeake 4 (Retired 2014)												
	Chesterfield 1 (Retired 1990)												
	Chesterfield 2 (Retired 1990)												
	Chesterfield 3 (Retired 2019)												
	Chesterfield 4 (Retired 2019)												
Chesterfield 5													
Chesterfield 6													
Clover 1													
Clover 2													
Mount Storm 1													
Mount Storm 2													
Mount Storm 3													
North Branch (Retired 2010)													
Possum Point 1 (Retired 1991)													
Possum Point 2 (Retired 1992)													
Yorktown 1 (Retired 2019)													
Yorktown 2 (Retired 2019)													
VCHEC													
Mecklenburg 1 (Retired 2019)													
Mecklenburg 2 (Retired 2019)													
Environmental Control													
	SNCR				2003	2003				2003	2002	2004	
	Circulating Fluidized Bed Boiler												
	ROFA												2012
	Low NOx Burners			N/A								N/A	N/A
	OFA											N/A	N/A
	Dry Scrubber												
	Wet Scrubber												
	Precipitator			1987	1987	1987	1987						
	Baghouse												
	Mech. Dust Collector												
	Dry Fly Ash												
	Dry Bottom Ash												
	Carbon Injection												
	Permitted Dry Landfill												2012
	Wastewater Treatment FGD												X
	Wastewater Low Volume												
	Wastewater Manganese Removal												

its sole discretion upon thirty days written notice; otherwise the Order may be modified only with Virginia Power's agreement or after due notice and opportunity for a hearing. By voluntarily agreeing to issuance of this Order, Virginia Power does not admit any violation of any law, regulation, or permit limitation, term or condition.

This Order shall become effective upon the date of its execution by the Executive Director of the Board or his designee.

This Order shall terminate and have no further effect when Virginia Power has completed the actions required by this Order.

And it is, SO ORDERED this 14 day of April 1987.

DATE: 04/14/87

BY: 

Executive Director

The terms and conditions of this Order are accepted by Virginia Power.

VIRGINIA POWER

DATE: 03/06/87

BY: 


Title

APPENDIX A:

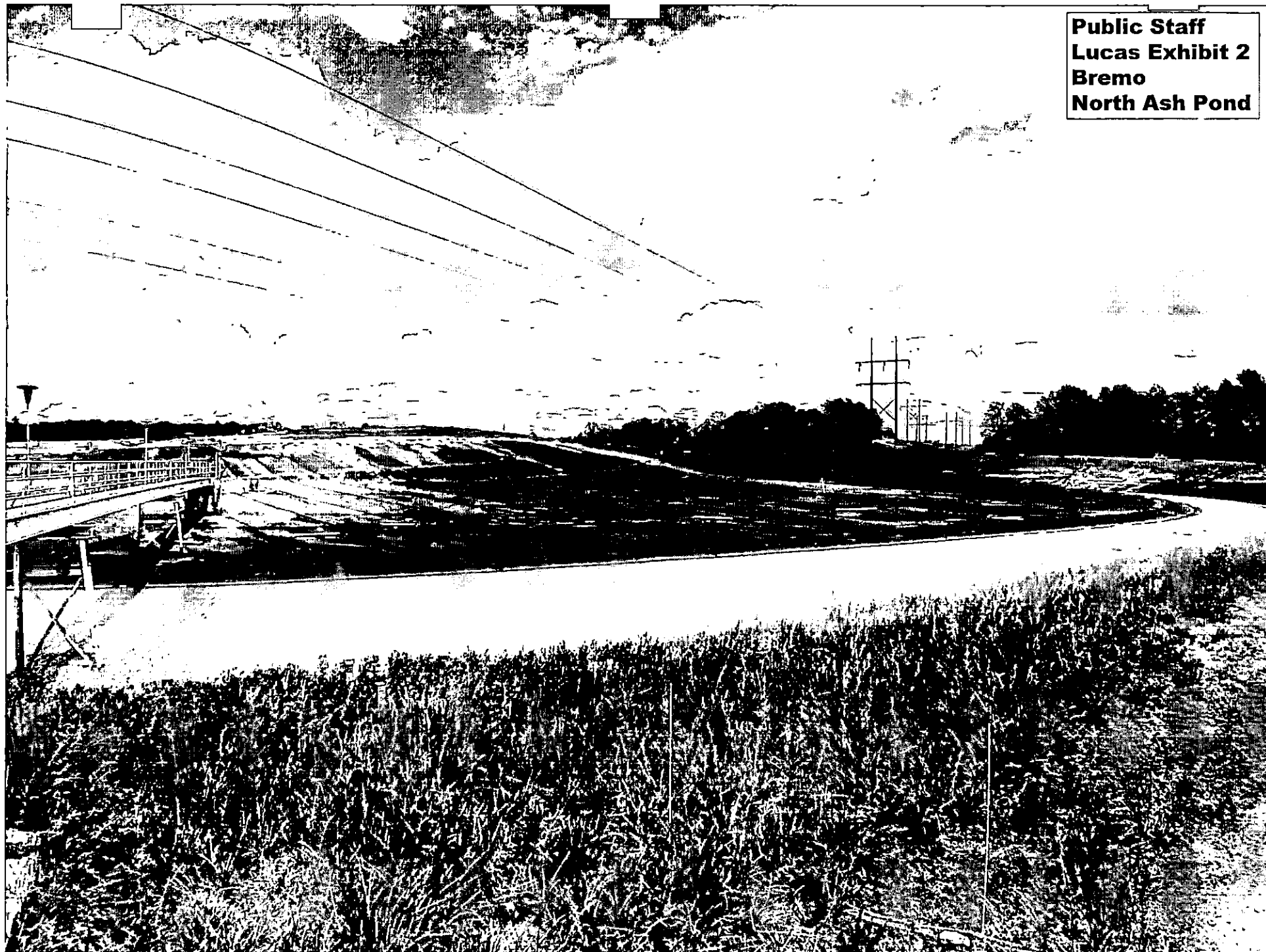
The Board orders and Virginia Power agrees to conduct the following study to define the nature and extent of groundwater contamination in the vicinity of Ash Ponds D and E at its Possum Point Power Station and to evaluate the alternatives to comply with the Board's groundwater standards/antidegradation policy.

1. On or before April 15, 1987, Virginia Power will perform a resistivity or electromagnetic conductivity study to determine if a definable subsurface plume of increased dissolved solids is present. A pilot traverse will be performed first to determine whether the degree of resistivity contrast between contaminated and uncontaminated groundwater is sufficient for reliable plume definition. If a plume can be defined, the survey will be conducted around both Ash Ponds D and E.
2. On or before May 15, 1987, the results of the study performed in #1 above shall be submitted to the State Water Control Board for Executive Director approval. If the staff does not agree that this Study has defined the plume of contamination, then Virginia Power must submit a plan within 2 weeks of the disapproval which delineates additional monitoring wells. This plan and the location of the wells is also subject to the Executive Director's approval.
3. Through October 15, 1987, Virginia Power will continue to collect monthly groundwater quality data from the existing and subsequent (see #2 above) ash pond monitoring wells.
4. On or before July 15, 1988, Virginia Power will prepare and submit a report which will:
 - a. describe the results of the study;
 - b. provide an evaluation of existing data;
 - c. define the extent and nature of the groundwater contamination; and
 - d. evaluate the alternatives for remediation, including cost and a schedule, for complying with the Board's groundwater standards/antidegradation policy.

**Public Staff
Lucas Exhibit 2
Bremo
West Ash Pond**



**Public Staff
Lucas Exhibit 2
Bremo
North Ash Pond**



**Public Stan
Lucas Exhibit 2
Chesterfield
Upper Ash Pond**



Public S
Lucas Exhibit 2
Chesterfield
Lower Ash Pond



Public ff
Lucas Exhibit 2
Possum Point
Ponds ABC



**Public Staff
Lucas Exhibit 2
Possum Point
Pond E**



**Public Staff
Lucas Exhibit 2
Possum Point
Pond D**



21A

Public Staff - Lucas Exhibit 1
Docket No. E-22, Sub 562

Station				Unit	First GW Sampling Date	Number of Monitoring Wells per Unit and Monitoring Program																								
						2000			2010			2013			2014			2015			2016			2017			2018			
						NPDDES	CUP	Solid Waste	CCR	NPDDES	CUP	Solid Waste	CCR	NPDDES	CUP	Solid Waste	CCR	NPDDES	CUP	Solid Waste	CCR	NPDDES	CUP	Solid Waste	CCR	NPDDES	CUP	Solid Waste		
Brenno Power Station	NAP	5/10/2000	-	-	2	-	-	-	-	4	-	-	-	4	-	-	-	8	4	-	-	8	4	-	-	8	4	-	-	8
	WAP	3/11/2013	-	-	-	-	-	-	-	4	-	-	-	4	-	-	-	-	-	-	-	5	4	-	-	5	4	-	-	5
	EAP	3/11/2013	-	-	-	-	-	-	-	4	-	-	-	4	-	-	-	-	-	-	-	9	4	-	-	9	4	-	-	9
Chesapeake Energy Center	Landfill	12/20/1983	-	-	10	-	-	-	12	-	-	-	23	-	-	-	23	-	-	-	23	-	-	-	23	-	-	-	-	23
	BAP (w/ Historic Pond)	6/4/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FFCPME	8/6/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chesterfield Power Station	LAP	1/22/1986	4	-	4	-	-	-	-	4	-	-	-	4	-	-	-	-	-	-	-	16	4	-	-	16	4	-	-	16
	UAP	11/20/1985	7	-	10	-	-	-	-	10	-	-	-	10	-	-	-	-	-	-	-	27	10	-	-	27	10	-	-	27
	Stage II/LF	12/21/1993	-	-	9	-	-	-	8	-	-	-	8	-	-	-	-	8	-	-	-	8	-	-	-	8	-	-	-	8
Clover Power Station	Stage III/LF	3/15/2000	-	-	9	-	-	-	8	-	-	-	8	-	-	-	-	8	-	-	-	8	-	-	-	8	-	-	-	8
	Sludge Basins	3/23/1994	4	-	-	-	-	-	4	-	-	-	4	-	-	-	-	4	-	-	-	6	4	-	-	6	4	-	-	6
	Phase A/LF	9/2/1987	7	-	-	-	-	-	9	-	-	-	-	9	-	-	-	-	-	-	-	6	9	-	-	6	9	-	-	6
Mt. Storm Power Station	Phase B/LF	9/2/1987	6	-	-	-	-	-	8	-	-	-	8	-	-	-	-	8	-	-	-	8	-	-	-	8	-	-	-	8
	LWSP	11/3/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ponds ABC	11/4/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Possum Point Power Station	Pond D	12/31/1985	14	-	-	-	-	-	12	-	-	-	-	12	-	-	-	-	-	-	-	6	12	-	-	6	12	-	-	6
	Pond E	12/5/1990	3	-	-	-	-	-	3	-	-	-	-	3	-	-	-	-	-	-	-	5	3	-	-	5	3	-	-	5
	VCEC	6/8/2010	-	-	-	-	-	-	8	-	-	-	8	-	-	-	-	8	-	-	-	8	7	-	-	8	7	-	-	8
Yorktown Power	Landfill	12/5/1985	-	25	11	-	-	-	21	11	-	-	21	11	-	-	-	21	11	-	-	21	11	-	-	21	11	-	-	21
	SUBTOTAL	47	25	99	0	52	23	47	0	62	21	58	0	62	21	58	0	65	21	68	23	63	21	68	113	62	21	74	143	
TOTAL						111			120			141			141			177			265			300			327			327

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
REVENUE IMPACT OF SETTLED AND UNRESOLVED ADJUSTMENTS

8.75% ROE
Schedule 1

AT 8.75% ROE
For the Test Year Ended December 31, 2018
(in Thousands)

DATA RESPONSE TO AGO - ROE of 8.75% NOT PUBLIC STAFF RECOMMENDATION
--

Line No.	Item	Revenue Requirement (a)
1	Non-fuel revenue requirement increase per Company application	\$ 26,958
2	Revenue impact of Company update in first supplemental filing	(2,079)
3	Non-fuel revenue requirement increase per Company after updates	<u>24,879</u>
4	Revenue impact of adjustments:	
5	<u>Settled Issues (To the extent there is an ROE impact, not settled at that amount):</u>	
6	Change in equity ratio from 53.65% to 52.00% equity	(1,903)
7	Change in debt cost rate from 4.442% to 4.442%	-
8	Change in return on equity from 10.75% to 8.75%	(16,126)
9	Change in retention factor - uncollectibles	(17)
10	Adjust uncollectibles	(238)
11	Adjust allocation of state accumulated deferred income taxes	-
12	Remove Mt Storm Impairment costs	(470)
13	Adjust NUG Contract Termination Expense - Regulatory Asset	(33)
14	Adjust outside services	(177)
15	Eliminate certain ADIT balances	-
16	Remove Skiffes Creek mitigation costs	(144)
17	Remove executive compensation costs	(92)
18	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	-
19	Adjustment to remove federal unprotected EDIT treatment as a rider	(264)
20	Adjust lobbying expense	(42)
21	Adjust storm costs	(81)
22	Remove employee severance program costs	(304)
23	Remove advertising costs	(12)
24	Adjust annual incentive plan costs	(358)
25	Adjust employee VRP Backfill costs	-
26	Adjust expenses for customer growth, usage, and weather normalization	(90)
27	Adjust variable non-fuel O&M expenses for displacement	(142)
28	Adjust inflation adjustment	(9)
29	Adjust uncollectibles for decrease in base fuel rate	(7)
30	Adjust cash working capital under present rates	(76)
31	Adjust cash working capital under proposed rates	(413)
32	Adjustment to reflect kWh change in revenue annualization	49
33	Adjustment for New Office Building	(720)
34	Rounding	(2)
35	Total Settled Issues	<u>(21,671)</u>
36	<u>Unsettled Issues:</u>	
37	Adjust coal combustion residual (CCR) costs	(7,081)
38	Adjust cash working capital for CCR adjustment	(68)
39	Total Unsettled Issues	<u>(7,149)</u>
40	Decrease in non-fuel revenue requirement	<u>\$ (3,941)</u>
41	Decrease in base fuel revenue requirement	<u>\$ (2,155)</u>
42	Annual EDIT Rider for 2 year period	<u>\$ 647</u>

CUSTOMER IMPACT OF 8.75% ROE

	ROE	Annual Revenue	
Revenue Impact of Settled Adjustments	9.75% ROE	\$ (13,517,000)	Note 1
Same Settled adjustments except ROE	8.75% ROE	\$ (21,671,000)	Note 2
Difference		\$ 8,154,000	

Note 1: See Johnson Settlement Exhibit 1 Schedule 1 Line 35

Note 2: See AGO 8.75% ROE Line 35

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
REVENUE IMPACT OF SETTLED AND UNRESOLVED ADJUSTMENTS
AT 9.00% ROE
For the Test Year Ended December 31, 2018
(in Thousands)

9.00% ROE
Schedule 1

DATA RESPONSE TO AGO - ROE of 9.00% NOT PUBLIC STAFF RECOMMENDATION
--

Line No.	Item	Revenue Requirement (a)
1	Non-fuel revenue requirement increase per Company application	\$ 26,958
2	Revenue impact of Company update in first supplemental filing	(2,079)
3	Non-fuel revenue requirement increase per Company after updates	<u>24,879</u>
4	Revenue impact of adjustments:	
5	<u>Settled Issues (To the extent there is an ROE impact, not settled at that amount):</u>	
6	Change in equity ratio from 53.65% to 52.00% equity	(1,903)
7	Change in debt cost rate from 4.442% to 4.442%	-
8	Change in return on equity from 10.75% to 9.00%	(14,111)
9	Change in retention factor - uncollectibles	(17)
10	Adjust uncollectibles	(238)
11	Adjust allocation of state accumulated deferred income taxes	-
12	Remove Mt Storm Impairment costs	(470)
13	Adjust NUG Contract Termination Expense - Regulatory Asset	(34)
14	Adjust outside services	(177)
15	Eliminate certain ADIT balances	-
16	Remove Skiffes Creek mitigation costs	(146)
17	Remove executive compensation costs	(92)
18	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	-
19	Adjustment to remove federal unprotected EDIT treatment as a rider	(270)
20	Adjust lobbying expense	(42)
21	Adjust storm costs	(81)
22	Remove employee severance program costs	(304)
23	Remove advertising costs	(12)
24	Adjust annual incentive plan costs	(358)
25	Adjust employee VRP Backfill costs	-
26	Adjust expenses for customer growth, usage, and weather normalization	(90)
27	Adjust variable non-fuel O&M expenses for displacement	(142)
28	Adjust inflation adjustment	(9)
29	Adjust uncollectibles for decrease in base fuel rate	(7)
30	Adjust cash working capital under present rates	(78)
31	Adjust cash working capital under proposed rates	(382)
32	Adjustment to reflect kWh change in revenue annualization	49
33	Adjustment for New Office Building	(720)
34	Rounding	-
35	Total Settled Issues	<u>(19,634)</u>
36	<u>Unsettled Issues:</u>	
37	Adjust coal combustion residual (CCR) costs	(7,100)
38	Adjust cash working capital for CCR adjustment	(69)
39	Total Unsettled Issues	<u>(7,169)</u>
40	Decrease in non-fuel revenue requirement	<u>\$ (1,924)</u>
41	Decrease in base fuel revenue requirement	<u>\$ (2,155)</u>
42	Annual EDIT Rider for 2 year period	<u>\$ 647</u>

CUSTOMER IMPACT OF 9.0% ROE

	ROE	Annual Revenue	
Revenue Impact of Settled Adjustments	9.75% ROE	\$ (13,517,000)	Note 1
Same Settled adjustments except ROE	9.0% ROE	\$ (19,634,000)	Note 2
Difference		\$ 6,117,000	

Note 1: See Johnson Settlement Exhibit 1 Schedule 1 Line 35

Note 2: See AGO 9.0% ROE Line 35

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
CALCULATION OF LEVELIZED FEDERAL
UNPROTECTED EDIT RIDER CREDIT
For the Test Year Ended December 31, 2018

Johnson Settlement Exhibit II
Schedule 2

II, A

Line No.	Item	Year 1 Revenue Requirement (a)	Year 2 Revenue Requirement (b)	Total Revenue Requirement (c)
	<u>Annuity Factor</u>			
1	Number of years	2 ^{1/}		
2	Payment per period	1		
3	After tax rate of return	6.654% ^{2/}		
4	Present value of 1 dollar over number of years with			
5	with 1 payment per year	1.8167		
6	1 plus (interest rate divided by two)	1.0333		
7	Annuity factor (L4 x L5)	<u>1.8772</u>		
8	Total NC retail regulatory liability to be amortized	(\$1,214,000) ^{3/}	(\$1,214,000) ^{3/}	
9	Annuity factor (L7)	<u>1.8772</u>	<u>1.8772</u>	
10	Levelized rider federal EDIT regulatory liability (L8 / L9)	(646,708)	(646,708)	(1,293,416) ^{6/}
11	One minus composite income tax rate	<u>74.377% ^{4/}</u>	<u>74.377% ^{4/}</u>	<u>74.377% ^{4/}</u>
12	Net operating income effect (L10 x L11)	(481,003)	(481,003)	(962,007)
13	Retention factor	<u>0.740365 ^{5/}</u>	<u>0.740365 ^{5/}</u>	<u>0.740365 ^{5/}</u>
14	Levelized rider federal EDIT credit (L5 / L6)	<u>(\$649,684)</u>	<u>(\$649,684)</u>	<u>(\$1,299,369)</u>

1/ Rider period per Settlement Agreement.

2/ Johnson Settlement Exhibit II, Schedule 2(a), Line 3.

3/ Company Supplemental Exhibit PMM-2, Schedule 1, page 3, lines 86 plus 87, plus one year EDIT Rideer amount originally proposed by the Company.

4/ One minus the composite income tax rate of 25.6228%.

5/ Johnson Settlement Exhibit 1, Schedule 1-2, Column (d), Line 14.

6/ Sum of Columns (a) through Column (e).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
CALCULATION OF ANNUITY FACTOR FOR EDIT
LIABILITY RIDER
For the Test Year Ended December 31, 2018

Johnson Settlement Exhibit II
Schedule 2(a)

Line No.	Item	Amount
	<u>Annuity Factor</u>	
1	Number of years	2 1/
2	Payment per period	1
3	After tax rate of return (L9)	6.654%
4	Present value of 1 dollar over number of years with with 1 payment per year	1.8167
5	1 plus (interest rate divided by two)	1.0333
6	Annuity factor (L4 x L5)	<u>1.8771</u>

	Capital Structure (a)	Cost Rates (b)	Overall Rate of Return (c) 6/	Net of Tax Rate (d)
	<u>After Tax Rate of Return</u>			
7	Long-term debt	48.00% 2/	4.442% 4/	2.13%
8	Common equity	52.00% 3/	9.75% 5/	5.07%
9	Total	<u>100.00%</u>	<u>7.20%</u>	<u>6.654%</u>

- 1/ Rider period per Settlement Agreement.
2/ Johnson Settlement Exhibit 1, Schedule 1-2, Column (a), Line 2.
3/ Johnson Settlement Exhibit 1, Schedule 1-2, Column (a), Line 3.
4/ Johnson Settlement Exhibit 1, Schedule 1-2, Column (b), Line 2.
5/ Johnson Settlement Exhibit 1, Schedule 1-2, Column (b), Line 3.
6/ Column (a) times Column (b).
7/ Column (c) times 1 minus the composite income tax rate of 25.6228%.
8/ Amount from Column (c).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
REVENUE IMPACT OF SETTLED AND UNRESOLVED ADJUSTMENTS
For the Test Year Ended December 31, 2018
(in Thousands)

FIA
Johnson Settlement Exhibit 1
Schedule 1

Line No.	Item	Per Public Staff (a)	Per Company (b)	Difference (c)	9/
1	Non-fuel revenue requirement increase per Company application	\$ 26,958 1/	\$ 26,958	\$ -	
2	Revenue impact of Company update in first supplemental filing	(2,079) 2/	(2,079)	-	
3	Non-fuel revenue requirement increase per Company after updates	<u>24,879</u>	<u>24,879</u>	<u>\$ -</u>	
4	Revenue Impact of Public Staff adjustments: 3/				
5	Settled Issues:				
6	Change in equity ratio from 53.65% to 52.00% equity	(1,903)	(1,903)	-	
7	Change in debt cost rate from 4.442% to 4.442%	-	-	-	
8	Change in return on equity from 10.75% to 9.75%	(8,064)	(8,064)	-	
9	Change in retention factor - uncollectibles	(17)	(17)	-	
10	Adjust uncollectibles	(238)	(238)	-	
11	Adjust allocation of state accumulated deferred income taxes	-	-	-	
12	Remove Mt Storm Impairment costs	(470)	(470)	-	
13	Adjust NUG Contract Termination Expense - Regulatory Asset	(36)	(36)	-	
14	Adjust outside services	(177)	(177)	-	
15	Eliminate certain ADIT balances	-	-	-	
16	Remove Skiffes Creek mitigation costs	(153)	(153)	-	
17	Remove executive compensation costs	(92)	(92)	-	
18	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	-	-	-	
19	Adjustment to remove federal unprotected EDIT treatment as a rider	(287)	(287)	-	
20	Adjust lobbying expense	(42)	(42)	-	
21	Adjust storm costs	(81)	(81)	-	
22	Remove employee severance program costs	(304)	(304)	-	
23	Remove advertising costs	(12)	(12)	-	
24	Adjust annual incentive plan costs	(358)	(358)	-	
25	Adjust employee VRP Backfill costs	-	-	-	
26	Adjust expenses for customer growth, usage, and weather normalization	(90)	(90)	-	
27	Adjust variable non-fuel O&M expenses for displacement	(142)	(142)	-	
28	Adjust inflation adjustment	(9)	(9)	-	
29	Adjust uncollectibles for decrease in base fuel rate	(7)	(7)	-	
30	Adjust cash working capital under present rates	(83) 8/	(83) 8/	-	
31	Adjust cash working capital under proposed rates	(282) 8/	(282) 8/	-	
32	Adjustment to reflect kWh change in revenue annualization	49	49	-	
33	Adjustment for New Office Building	(720)	(720)	-	
34	Rounding	1	1	-	
35	Total Settled Issues	<u>(13,517)</u>	<u>(13,517)</u>	<u>-</u>	
36	Unsettled Issues:				
37	Adjust coal combustion residual (CCR) costs	(7,096) 7/	(2,750) 7/	(4,346)	
38	Adjust cash working capital for CCR adjustment	(74) 8/	(28) 8/	(45)	
39	Total Unsettled Issues	<u>(7,170)</u>	<u>(2,779)</u>	<u>(4,391)</u>	
40	Recommended increase in non-fuel revenue requirement	<u>\$ 4,192 4/</u>	<u>\$ 8,583</u>	<u>\$ (4,391)</u>	
41	Public Staff recommended decrease in base fuel revenue requirement	<u>\$ (2,155) 5/</u>	<u>\$ (2,155)</u>	<u>\$ -</u>	
42	Annual EDIT Rider recommended by Public Staff for 5 year period	<u>\$ 649 6/</u>	<u>\$ 649</u>	<u>\$ -</u>	

1/ Company Exhibit PMM-1, Page 1, Line 6, Column (6).

2/ Company Supplemental Exhibit PMM-1, Page 10.

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

4/ Johnson Settlement Exhibit 1, Schedule 5, Line 7.

5/ Johnson Settlement Exhibit 1, Schedule 5, Line 6.

6/ Johnson Settlement Exhibit 2, Schedule 1, Line 14.

7/ DENC and the Public Staff have agreed on a small portion of this issue involving compounding of financing costs.

8/ Calculated based on including and excluding Public Staff and Company CCR adjustments in spreadsheet calculation.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUPPORT FOR RECONCILIATION SCHEDULE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 1(a)

Line No.	Item	Rate Base Impact (a)	Income Statement Impact (b)	Total Revenue Impact (c)
1	Remove Mt Storm Impairment costs	\$0	(\$470)	(\$470)
2	Remove Skiffes Creek mitigation costs	(108)	(45)	(153)
3	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	-	-	-
4	Adjust CCR costs	(977)	(6,119)	(7,096)

1/ Johnson Settlement Exhibit 1, Schedule 2-1, Line 11.

2/ Johnson Settlement Exhibit 1, Schedule 3-1, Line 20.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF GROSS REVENUE EFFECT FACTORS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 1-2

Line No.	Item	Capital Structure (a)	Cost Rates (b)	Retention Factor (c)	Gross Revenue Effect (d)
1	<u>Rate Base Factor</u>				
2	Long-term debt	48.000% 1/	4.442% 1/	0.9954193 2/	0.0214217 4/
3	Common equity	52.000% 1/	9.75% 1/	0.7403645 3/	0.0684798 4/
4	Total (Sum of Lines 2 and 3)	<u>100.000%</u>			<u>0.0899015</u>
					<u>Amount</u>
5	<u>Net Income Factor</u>				
6	Total revenue				1.0000000
7	Uncollectibles				<u>0.0032850 5/</u>
8	Balance (L6 - L7)				0.9967150
9	Regulatory fee (L8 x 0.130%) 6/				<u>0.0012957</u>
10	Balance (L8 - L9)				0.9954193
11	State income tax (L10 x 5.8517%) 7/				<u>0.0582490</u>
12	Balance (L10 - L11)				0.9371703
13	Federal income tax (L12 x 21%) 8/				<u>0.1968058</u>
14	Retention factor (L12 - L13)				<u>0.7403645</u>

1/ Per Settlement Agreement.

2/ Line 10.

3/ Line 14.

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

5/ Johnson Settlement Exhibit 1, Schedule 3-1(b), Line 5.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF WEIGHTED
STATE INCOME TAX RATE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 1-3

Line No.	Item	Total System (a)	Virginia (b)	North Carolina (c)	Washington DC (d)	West Virginia (e)
1	<u>Weighted state income tax rate</u>					
2	Apportionment factor		93.5230% 2/	3.6873% 4/	0.0000% 2/	2.2788% 2/
3	State income tax rate		6.00% 2/	2.50% 5/	8.25% 2/	6.50% 2/
4	Weighted state income tax rate	<u>5.8517% 1/</u>	<u>5.61138% 3/</u>	<u>0.09218% 3/</u>	<u>0.00000% 3/</u>	<u>0.14812% 3/</u>
5	<u>Composite income tax rate</u>					
6	Weighted state income tax rate (L4)	5.8517%				
7	Federal income tax rate	21% 6/				
8	Composite income tax rate	25.6228% 7/				

1/ Sum of Columns (b) through (e).

2/ NCUC Form E-1, Item No. 13a6(2)va_new.

3/ Line 1 times Line 2.

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 286, Line 3.

5/ Based on North Carolina Department of Revenue Notice dated December 2018.

6/ Statutory rate.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ORIGINAL COST RATE BASE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 2

Line No.	Item	Under Present Rates			After Public Staff Recommended Increase	
		NC Retail Adjusted	Public Staff	After Public Staff	Rate	After Rate
		Per Company 1/	Adjustments 2/	Adjustments 3/	Increase	Increase 5/
		(a)	(b)	(c)	(d)	(e)
1	Electric plant in service	\$2,142,169	(\$1,671)	\$2,140,498	\$0	\$2,140,498
2	Accumulated depreciation and amortization	(777,432)	(352)	(777,784)	-	(777,784)
3	Net electric plant in service (L1 + L2)	1,364,737	(2,024)	1,362,713	-	1,362,713
4	Materials and supplies	40,755	-	40,755	-	40,755
5	Cash working capital	14,451	(547)	13,904	456 4/	14,360
6	Other additions	37,149	(14,607)	22,542	-	22,542
7	Other deductions	(26,130)	-	(26,130)	-	(26,130)
8	Customer deposits	(4,615)	-	(4,615)	-	(4,615)
9	Accumulated deferred income taxes	(278,395)	984	(277,411)	-	(277,411)
10	Total original cost rate base (Sum of L3 thru L9)	<u>\$1,147,952</u>	<u>(\$16,194)</u>	<u>\$1,131,758</u>	<u>\$456</u>	<u>\$1,132,214</u>

1/ Company Supplemental Exhibit PMM-1, Page 2, Column 5.

2/ Johnson Settlement Exhibit 1, Schedule 2-1, Column (h).

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

4/ Johnson Settlement Exhibit 1, Schedule 2-1(g), Line 44, Column (k).

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF RATE BASE
ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit
Schedule 2-1

Line No.	Item	Adjust ADIT for Certain Balances 1/	Remove Mt Storm Impairment Costs 2/	Adjust NUG Contract Terminations Expense 3/	Remove Skiffaw Creek Mitigation Costs 4/	Remove Chesterfield Units 3 & 4 Conversion Costs 5/	Adjustment to Remove Federal Unprotected EDIT	Adjust CCR Costs 10/	Adjust Cash Working Capital 11/	Total Rate Base Adjustments 12/
		(a)	(b)	(c)	(d)	(e)		(f)	(g)	(h)
1	Electric plant in service	\$0	\$0	\$0	\$ (1,671) 4/	\$ -	\$ - 7/	\$0	\$0	(\$1,671)
2	Accumulated depreciation and amortization	-	-	(397)	45 5/	-	- 8/	-	-	(352)
3	Net electric plant in service (L1 + L2)	-	-	(397)	(1,627)	-	-	-	-	(2,024)
4	Materials and supplies	-	-	-	-	-	-	-	-	-
5	Cash working capital	-	-	-	-	-	-	-	(\$547)	(547)
6	Other additions	-	-	-	-	-	-	(14,607) 14/	-	(14,607)
7	Other deductions	-	-	-	-	-	-	-	-	-
8	Customer deposits	-	-	-	-	-	-	-	-	-
9	Accumulated deferred income taxes	-	-	-	428 6/	-	(\$3,187) 9/	3,743 15/	-	984
10	Total original cost rate base (Sum of L3 thru L9)	\$0	\$0	(\$397)	(\$1,199)	\$0	(\$3,187)	(\$10,864)	(\$547)	(\$16,194)
11	Revenue requirement impact 13/	\$0	\$0	(\$36)	(\$108)	\$0	(\$287)	(\$977)	(\$49)	(\$1,456)

1/ Johnson Settlement Exhibit 1, Schedule 2-1(a), Line 1.
2/ Johnson Settlement Exhibit 1, Schedule 2-1(c), Column 1.
3/ Johnson Settlement Exhibit 1, Schedule 2-1(d), Line 11.
4/ Johnson Settlement Exhibit 1, Schedule 2-1(b), Line 3.
5/ Johnson Settlement Exhibit 1, Schedule 2-1(b), Line 5.
6/ Johnson Settlement Exhibit 1, Schedule 2-1(b), Line 4.
7/ Johnson Settlement Exhibit 1, Schedule 2-1(e), Line 3.

8/ Johnson Settlement Exhibit 1, Schedule 2-1(e), Line 5.
9/ Johnson Settlement Exhibit 1, Schedule 2-1(h), Line 4.
10/ Per Public Staff witness Maness.
11/ Johnson Settlement Exhibit 1, Schedule 2-1(f), Line 45.
12/ Sum of Column (a) through Column (g).
13/ Line 10 times rate base retention factor of 0.0899015 from Johnson Settlement Exhibit 1, Schedule 1-2.
14/ Maness Supplemental Exhibit I, Schedule 1, Line 14.
15/ Maness Supplemental Exhibit I, Schedule 1, Line 15.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO ELIMINATE CERTAIN ADIT
BALANCES
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(a)

<u>Line</u> <u>No.</u>	<u>Item</u>	<u>Amount</u>
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<u>ADJUSTMENT NO LONGER REQUIRED</u>		
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DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE SKIFFES CREEK MITIGATION COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(b)

Line No.	Item	Amount
1	Skiffes Creek Mitigation Costs - System	\$ 39,787 ^{1/}
2	NC Power Supply Transmission Factor 2	4.2009% ^{2/}
3	Public Staff adjustment to Skiffes Creek mitigation costs from rate base (L3 x L4)	<u>\$ (1,671)</u>
4	Adjustment to ADIT associated with Skiffes Creek	<u>\$ 428 ^{3/}</u>
5	Accumulated Depreciation associated with Skiffes Creek	<u>\$ 45 ^{4/}</u>
6	Depreciation expense associated with Skiffes Creek	<u>\$ (45) ^{5/}</u>

1/ Per Settlement Agreement.

2/ Factor 2 from NCUC Form E-1, Item No. 45a, Schedule 15, Line 14.

3/ Negative of Line 3 amount times composite income tax rate.

4/ Negative of Line 3 amount per Settlement Agreement.

5/ Per Settlement Agreement.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE IMPAIRMENT COSTS FOR MT
STORM
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(c)

Line No.	Item	Amount
1	Mt Storm Fuel Flexibility Project Impairment - System	\$ 62,364 ^{1/}
2	Adjustment per Public Staff	<u>(31,182) ^{2/}</u>
3	Revised Mt Storm Impairment Expense (L1 - L2)	31,182
4	NC Retail Factor 1	4.9507%
5	NC Retail Regulatory Asset (L3 x L4)	<u>\$ 1,544</u>
6	Amortization Period	<u>2.75 ^{3/}</u>
7	Regulatory Asset Amortization per Public Staff (L5/L6)	561
8	Regulatory Asset Amortization per Company	<u>1,029 ^{1/}</u>
9	Public Staff Adjustment to Mt Storm Impairment Expense (L7 - L8)	<u><u>\$ (468)</u></u>

1/ Company Adjustment SUPP-5.

2/ Per Settlement Agreement.

3/ Per Settlement Agreement.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NUG CONTRACT TERMINATION EXPENSE
REGULATORY ASSET
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(d)

Line No.	Description	Amount (a)
1	NUG Contract Termination Expense - System	\$ 135,000 ^{1/}
2	Less: Net Capacity Revenue/Replacement Cost	<u>21,400 ^{2/}</u>
3	Revised NUG Contract Termination Expense (L1 - L2)	\$ 113,600
4	NC Retail Factor 1	<u>4.9507%</u>
5	NUG Contract Termination Expense per Public Staff (L3 x L4)	\$ 5,624
6	Remaining Months in Contract (April 2019 - November 2021)	32
7	Monthly Amortization	\$ 176
8	Times: Twelve Months	<u>12</u>
9	Annual Amortization per Public Staff (L7 x L8)	\$ 2,109
10	Annual Amortization per Company	<u>2,506 ^{1/}</u>
11	Public Staff Adjustment to NUG Contract Termination Expense Reg Asset	<u><u>\$ (397)</u></u>

1/ Company Adjustment SUPP-2.

2/ Based on information provided by the Company. (Email 8/15/19)

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE COSTS FOR CHESTERFIELD UNITS 3 &
4
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(e)

ADJUSTMENT NO LONGER REQUIRED

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit
Schedule 2-1(f)

Line No.	Item	Per Books Amounts ^{1/}	Company Ratemaking Adjustments ^{5/}	After Company Adjustments ^{7/}	Public Staff Adjustments ^{8/}	After Public Staff Adjustments ^{9/}	(Lead) / Lag Days ^{10/}	Working Capital From Lead/ Lag Study ^{14/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Electric operating revenues:							
2	Rate revenues	\$353,978 ^{2/}	(\$5,393) ^{8/}	\$348,585	(\$48)	\$348,537	43.38 ^{11/}	\$41,404
3	Sales for resale revenues	1,126 ^{2/}	-	1,126	-	1,126	38.91 ^{11/}	120
4	Other operating revenues	5,941 ^{2/}	(823) ^{8/}	5,118	-	5,118	25.19 ^{11/}	353
5	Electric operating revenues	<u>361,045</u>	<u>(6,216)</u>	<u>354,829</u>	<u>(48)</u>	<u>\$354,781</u>	<u>43.08</u>	<u>41,877</u>
6	Account 501 - Fuel	24,682	(3,709)	20,973	(382)	20,591	(33.27) ^{12/}	(1,877)
7	Account 518 - Nuclear Fuel	8,487	(1,275)	7,212	(131)	7,080	(3.21) ^{12/}	(62)
8	Account 547 - Other Fuel	55,934	(8,405)	47,529	(866)	46,664	(33.27) ^{12/}	(4,253)
9	Account 555 - Purchased Power	49,912	(25,884)	24,028	(773)	23,255	(28.21) ^{11/}	(1,797)
10	Account 557 - Deferred Fuel	(27,204)	27,204	-	-	-	- ^{13/}	-
11	Payroll expense	34,032	(2,339)	31,693	(356)	31,337	(26.90) ^{12/}	(2,309)
12	Benefits and pension expense	8,485	(293)	8,192	-	8,191	(31.81) ^{12/}	(714)
13	OPEB expense	(1,721)	-	(1,721)	-	(1,721)	(20.64) ^{12/}	97
14	Uncollectibles expense	1,109	272	1,381	(236)	1,144	(254.79)	(799)
15	Stores expense	9,243	-	9,243	-	9,243	(43.92)	(1,112)
16	Accrued vacation expense	81	-	81	-	81	- ^{13/}	-
17	Worker's compensation expense	73	-	73	-	73	-	-
18	Prepaid insurance amortization expense	412	-	412	-	412	-	-
19	Director's deferred compensation expense	-	-	-	-	-	-	-
20	Miscellaneous prepaid expense	503	-	503	-	503	-	-
21	Other O&M expense	34,997	7,805	42,802	(1,660)	41,142	(43.65) ^{12/}	(4,920)
22	Total O&M expenses	<u>199,025</u>	<u>(6,624)</u>	<u>192,401</u>	<u>(4,404)</u>	<u>187,995</u>		<u>(17,746)</u>
23	Depreciation and amortization expense	<u>60,066</u> ^{3/}	<u>4,521</u>	<u>64,587</u>	<u>(6,602)</u>	<u>57,985</u>	-	-
24	Current state and federal income taxes	(2,846)	723	(2,123)	2,599	476	87.90 ^{12/}	115
25	Deferred state and federal income taxes	13,456	138	13,594	-	13,594	-	-
26	Deferred ITC	(74)	-	(74)	-	(74)	-	-
27	Total income taxes	<u>10,536</u>	<u>861</u>	<u>11,397</u>	<u>2,599</u>	<u>13,996</u>		<u>115</u>
28	North Carolina franchise tax	486	-	486	-	486	(523.00)	(696)
29	Property tax expense	10,642	(84)	10,558	-	10,558	(111.96)	(3,239)
30	West Virginia B&O tax expense	1,045	-	1,045	-	1,045	(39.54)	(113)
31	Payroll taxes	2,307	(179)	2,128	-	2,128	(27.26)	(159)
32	Other taxes	102	-	102	-	102	(31.06)	(9)
33	Total taxes other than income	<u>14,582</u>	<u>(263)</u>	<u>14,319</u>	<u>-</u>	<u>14,319</u>		<u>(4,216)</u>
34	Gain / loss on disposition of property	<u>238</u>	<u>(13)</u>	<u>225</u>	<u>-</u>	<u>225</u>	-	-

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit
Schedule 2-1(f)

Line No.	Item	Per Books Amounts ^{1/} (a)	Company Ratemaking Adjustments ^{5/} (b)	After Company Adjustments ^{7/} (c)	Public Staff Adjustments ^{8/} (d)	After Public Staff Adjustments ^{9/} (e)	(Lead) / Lag Days ^{10/} (f)	Working Capital From Lead/Lag Study ^{14/} (g)
35	Total electric operating expenses	284,447	(1,518)	282,929	(8,408)	274,519		(21,847)
36	AFUDC	235	(235)	-	-	-	-	-
37	Charitable contributions	330	(330)	-	-	-	-	-
38	Interest on customer deposits	72	-	72	-	72	(182.50)	(36)
39	Interest on tax deficiencies	76	-	76	-	76	- ^{13/}	-
40	Interest expense	24,539	(902)	23,637	807	24,444	(90.93)	(6,090)
41	Income available for common equity	51,816 ^{4/}	(3,701) ^{4/}	48,115	7,552	55,667	-	-
42	Total requirement	<u>\$ 361,045</u>	<u>\$ (6,216)</u>	<u>\$ 354,829</u>	<u>\$ (48)</u>	<u>\$ 354,779</u>		<u>\$ (27,973)</u>
43	Cash working capital per Public Staff (L5 + L41)							\$13,904
44	Amount per Company application							14,451 ^{15/}
45	Adjustment to cash working capital							<u>(\$547)</u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (1), unless footnoted otherwise.

2/ NCUC Form E-1, Item No. 45a, Schedule 2.

3/ Company Supplemental Exhibit PMM-1, Page 1, Line 9, Column (3).

4/ Line 5 minus (Sum of Lines 35 through 39).

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (2), unless footnoted otherwise.

6/ Company Supplemental Exhibit PMM-1, Page 1, Lines 2 through 5, Column (4).

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

8/ Johnson Settlement Exhibit 1, Schedule 2-1(f)(1), Column (z).

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

10/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (6), unless footnoted otherwise.

11/ Calculated based on the Company's lead-lag workpapers, and the per books amounts for 2015.

12/ Calculated by Public Staff.

13/ Updated composite revenue lag from Column (f), Line 5.

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

15/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (8).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO BE
REFLECTED IN LEAD LAG CALCULATION
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(f)(1)
Page 1 of 3

Line No.	Item	Adjust ADIT for Certain Balances 1/	Reflect Decrease in State Income Tax Rate 1/	Adjust Uncollectibles 1/	Adjust Storm Costs 1/	Adjust Nuclear Outage Costs 1/	Remove Mt Storm Impairment Costs 1/	Adjust Allocation of Revenues from Sale of RECs 1/	Remove Employee Severance Costs 1/	Remove Skiffes Creek Mitigation Costs 1/
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Electric operating revenues:									
2	Rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Sales for resale revenues	-	-	-	-	-	-	-	-	-
4	Other operating revenues	-	-	-	-	-	-	-	-	-
5	Electric operating revenues	-	-	-	-	-	-	-	-	-
8	Account 501 - Fuel	-	-	-	-	-	-	-	-	-
7	Account 516 - Nuclear Fuel	-	-	-	-	-	-	-	-	-
8	Account 547 - Other Fuel	-	-	-	-	-	-	-	-	-
9	Account 555 - Purchased Power	-	-	-	-	-	-	-	-	-
10	Account 557 - Deferred Fuel	-	-	-	-	-	-	-	-	-
11	Payroll expense	-	-	-	-	-	-	-	-	-
12	Benefits and pension expense	-	-	-	-	-	-	-	-	-
13	OPEB expense	-	-	-	-	-	-	-	-	-
14	Uncollectibles expense	-	-	(236)	-	-	-	-	-	-
15	Stores expense	-	-	-	-	-	-	-	-	-
16	Accrued vacation expense	-	-	-	-	-	-	-	-	-
17	Worker's compensation expense	-	-	-	-	-	-	-	-	-
18	Prepaid insurance amortization expense	-	-	-	-	-	-	-	-	-
19	Director's deferred compensation expense	-	-	-	-	-	-	-	-	-
20	Miscellaneous prepaid expense	-	-	-	-	-	-	-	-	-
21	Other O&M expense	(42)	-	-	(81)	-	-	-	(302)	-
22	Total O&M expenses	(42)	-	(236)	(81)	-	-	-	(302)	-
23	Depreciation and amortization expense	-	-	-	-	-	(458)	-	-	(45)
24	Current state and federal income taxes	11	-	60	21	-	120	-	77	11
25	Deferred state and federal income taxes	-	-	-	-	-	-	-	-	-
26	Deferred ITC	-	-	-	-	-	-	-	-	-
27	Total income taxes	11	-	60	21	-	120	-	77	11
28	North Carolina franchise tax	-	-	-	-	-	-	-	-	-
29	Property tax expense	-	-	-	-	-	-	-	-	-
30	West Virginia B&O tax expense	-	-	-	-	-	-	-	-	-
31	Payroll taxes	-	-	-	-	-	-	-	-	-
32	Other taxes	-	-	-	-	-	-	-	-	-
33	Total taxes other than income	-	-	-	-	-	-	-	-	-
34	Gain / loss on disposition of property	-	-	-	-	-	-	-	-	-
35	Total electric operating expenses	(31)	-	(176)	(60)	-	(348)	-	(225)	(34)
36	Charitable contributions	-	-	-	-	-	-	-	-	-
37	Interest on customer deposits	-	-	-	-	-	-	-	-	-
38	Interest on tax deficiencies	-	-	-	-	-	-	-	-	-
39	Interest expense	-	-	-	-	-	-	-	-	-
40	Income available for common equity	31	-	176	60	-	348	-	225	34
41	Total requirement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

Johnson Settlement Exhibit 1
Schedule 2-1(f)(1)
Page 2 of 3

[illegible]

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
PUBLIC STAFF ADJUSTMENTS TO BE
REFLECTED IN LEAD LAG CALCULATION
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1(f)(1)
Page 3 of 3

Line No.	Item	Adjust for Customer Growth, Usage and Weather Normalization 1/ (s)	Non-Fuel Variable O&M Expense Displacement Adjustment 1/ (t)	Annualize Fuel Revenue and Expense at Current Fuel Revenue Rate 1/ (u)	Set Expense to Reflect Recommended Base Fuel Factor (v)	Set Revenue to Reflect Recommended Base Fuel Factor 1/ (w)	Adjust New Office Building	Adjust PJM Capacity Rate 1/ (x)	Adjust Marketer Percentage 1/ (y)	Interest Synchronization 1/ (z)	Total Public Staff Adjustments 1/ (z)
1	Electric operating revenues:										
2	Rate revenues	\$0	\$0	\$0	\$0	(\$48)	\$0	\$0	\$0	\$0	(\$48)
3	Sales for resale revenues	-	-	-	-	-	-	-	-	-	-
4	Other operating revenues	-	-	-	-	-	-	-	-	-	-
5	Electric operating revenues	-	-	\$0	-	(48)	-	-	-	-	(48)
6	Account 501 - Fuel	-	-	-	(382)	-	-	-	-	-	(382)
7	Account 518 - Nuclear Fuel	-	-	-	(131)	-	-	-	-	-	(131)
8	Account 547 - Other Fuel	-	-	-	(866)	-	-	-	-	-	(866)
9	Account 555 - Purchased Power	-	-	-	(773)	-	-	-	-	-	(773)
10	Account 557 - Deferred Fuel	-	-	-	-	-	-	-	-	-	-
11	Payroll expense	-	-	-	-	-	-	-	-	-	(356)
12	Benefits and pension expense	-	-	-	-	-	-	-	-	-	-
13	OPEB expense	-	-	-	-	-	-	-	-	-	-
14	Uncollectibles expense	-	-	-	-	-	-	-	-	-	(236)
15	Stores expense	-	-	-	-	-	-	-	-	-	-
16	Accrued vacation expense	-	-	-	-	-	-	-	-	-	-
17	Worker's compensation expense	-	-	-	-	-	-	-	-	-	-
18	Prepaid insurance amortization expense	-	-	-	-	-	-	-	-	-	-
19	Director's deferred compensation expense	-	-	-	-	-	-	-	-	-	-
20	Miscellaneous prepaid expense	-	-	-	-	-	-	-	-	-	-
21	Other O&M expense	(89)	(141)	-	-	-	(716)	-	-	-	(1,660)
22	Total O&M expenses	(89)	(141)	-	(2,152)	-	(716)	-	-	-	(4,404)
23	Depreciation and amortization expense	-	-	-	-	-	-	-	-	-	(6,602)
24	Current state and federal income taxes	23	36	-	551	(12)	183	-	-	(207)	2,599
25	Deferred state and federal income taxes	-	-	-	-	-	-	-	-	-	-
26	Deferred ITC	-	-	-	-	-	-	-	-	-	-
27	Total income taxes	23	36	-	551	(12)	183	-	-	(207)	2,599
28	North Carolina franchise tax	-	-	-	-	-	-	-	-	-	-
29	Property tax expense	-	-	-	-	-	-	-	-	-	-
30	West Virginia B&O tax expense	-	-	-	-	-	-	-	-	-	-
31	Payroll taxes	-	-	-	-	-	-	-	-	-	-
32	Other taxes	-	-	-	-	-	-	-	-	-	-
33	Total taxes other than income	-	-	-	-	-	-	-	-	-	-
34	Gain / loss on disposition of property	-	-	-	-	-	-	-	-	-	-
35	Total electric operating expenses	(66)	(105)	-	(1,601)	(12)	(533)	-	-	(207)	(6,408)
36	Charitable contributions	-	-	-	-	-	-	-	-	-	-
37	Interest on customer deposits	-	-	-	-	-	-	-	-	-	-
38	Interest on tax deficiencies	-	-	-	-	-	-	-	-	-	-
39	Interest expense	-	-	-	-	-	-	-	-	807	807
40	Income available for common equity	69	105	-	1,601	(38)	533	-	-	(601)	7,552
41	Total requirement	\$0	\$0	\$0	\$0	(\$48)	\$0	\$0	\$0	\$0	(\$48)

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 662
North Carolina Retail Operations

Johnson Settlement Exhibit 1
Schedule 2-1(g)
Page 1 of 2

CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY AFTER RATE INCREASE
For the Test Year Ended December 31, 2018
(In Thousands)

Line No.	Item	Under Present Rates	(Lead) Lag Days	Iteration 1		CWC Change
		After Adjustments	1/	Increase	With Increase	
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Rate revenues	\$349,537	43.36	\$2,307	\$350,844	\$274
3	Sales for resale revenues	1,126	38.91	-	1,126	-
4	Other operating revenues	5,119	25.19	7	5,125	-
5	Electric operating revenues	<u>354,781</u>	43.08	<u>2,314</u>	<u>357,095</u>	<u>274</u>
6	Account 501 - Fuel	20,591	(33.27)	-	20,591	-
7	Account 518 - Nuclear Fuel	7,080	(3.21)	-	7,080	-
8	Account 547 - Other Fuel	46,664	(33.27)	-	46,664	-
9	Account 555 - Purchased Power	23,255	(29.21)	-	23,255	-
10	Account 557 - Deferred Fuel	-	-	-	-	-
11	Payroll expense	31,337	(26.90)	-	31,337	-
12	Benefits and pension expense	8,191	(31.81)	-	8,191	-
13	OPEB expense	(1,721)	(20.64)	-	(1,721)	-
14	Uncollectibles expense	1,144	(254.79)	8	1,152	(5)
15	Stores expense	9,243	(43.92)	-	9,243	-
16	Accrued vacation expense	81	-	-	81	-
17	Worker's compensation expense	73	-	-	73	-
18	Prepaid insurance amortization exp.	412	-	-	412	-
19	Director's deferred compensation exp.	-	-	-	-	-
20	Miscellaneous prepaid expense	503	-	-	503	-
21	Other O&M expense	41,142	(43.65)	3	41,145	-
22	Total O&M expenses	<u>187,995</u>		<u>11</u>	<u>188,006</u>	<u>(5)</u>
23	Depreciation and amortization exp.	<u>57,985</u>	-	-	<u>57,985</u>	-
24	Net current income taxes	476	87.90	590	1,066	142
25	Deferred state and federal income taxes	13,594	-	-	13,594	-
26	Deferred ITC	(74)	-	-	(74)	-
27	Total income taxes	<u>13,990</u>		<u>590</u>	<u>14,585</u>	<u>142</u>
28	North Carolina franchise tax	486	(523.00)	-	486	-
29	Property tax expense	10,558	(111.96)	-	10,558	-
30	West Virginia B&O tax expense	1,045	(39.54)	-	1,045	-
31	Payroll taxes	2,129	(27.26)	-	2,129	-
32	Other taxes	102	(31.06)	-	102	-
33	Total taxes other than income	<u>14,319</u>		-	<u>14,319</u>	-
34	Gain / loss on disposition of property	<u>225</u>	-	-	<u>225</u>	-
35	Total electric operating expenses	<u>274,519</u>		<u>601</u>	<u>275,120</u>	<u>137</u>
36	Charitable contributions	-	-	-	-	-
37	Interest on customer deposits	72	(182.50)	-	72	-
38	Interest on tax deficiencies	75	-	-	75	-
39	Other expenses / (income)	<u>149</u>		-	<u>149</u>	-
40	Interest expense	24,444	(90.93)	-	24,444	-
41	Income available for common equity	<u>55,667</u>		<u>1,713</u>	<u>57,380</u>	<u>12/</u>
42	Net operating income for return	<u>80,112</u>		<u>1,713</u>	<u>81,824</u>	-
43	Total requirement	<u>\$354,779</u>		<u>\$2,314</u>	<u>\$357,093</u>	<u>\$137</u>
44	Cumulative change in working capital					\$411
45	Rate base under present rates					1,131,758
46	Rate base after rate increase	<u>\$1,131,758</u>	2/			<u>\$1,132,169</u>
47	Overall rate of return (L42 / L46)	7.08%				7.23%
48	Target rate of return	7.20%	3/			7.20%

1/ Johnson Settlement Exhibit 1, Schedule 2-1(f), Column (e).

2/ Johnson Settlement Exhibit 1, Schedule 2, Line 10, Column (c).

3/ Johnson Settlement Exhibit 1, Schedule 4, Line 3, Column (h).

4/ Johnson Settlement Exhibit 1, Schedule 2-1(f), Column (f).

5/ Line 5 minus Line 4 minus Line 3.

6/ ((Line 5 minus \$330,000) divided by (1 minus 0.00319951911162212))

minus (Line 5 minus \$330,000) plus \$330,000.

7/ Line 5 times 0.3285%.

8/ Line 5 times 0.130%.

9/ (Line 41 divided by (1 minus 25.6228%)) minus Line 41.

10/ Column (c) minus Column (a).

11/ Column (c) plus Column (c), unless footnoted otherwise.

12/ Line 46, Column (a) times 52.000% times 9.750%.

13/ Column (c) divided by 365 days times Column (b).

14/	(Line 5 divided by (1 minus 0.0001935191) (1.622122) minus Line 6.
15/	Column (d) minus Column (c).
16/	Column (d) minus Column (c).
17/	Line 45, Column (c) times 48,000% (4.442%).
18/	Line 45, Column (c) times 48,000% (4.442%).
19/	Line 45, Column (c) times 48,000% (4.442%).
20/	Line 45, Column (c) times 48,000% (4.442%).
21/	Column (b) plus Column (c), unless allocated otherwise.
22/	Line 45, Column (c) times 52,000% (5.750%).
23/	Line 45, Column (c) times 52,000% (5.750%).
24/	Column (c) divided by 365 days times Column (a).
25/	Line 45, Column (c) times 62,000% (6.750%).
26/	Column (c) divided by 365 days times Column (b).
27/	Column (c) minus Column (b).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE FEDERAL
UNPROTECTED EDIT FOR TREATMENT AS A
RIDER
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-1 (h)

<u>Line No.</u>	<u>Item</u>	<u>Amount</u>
1	Federal unprotected EDIT to be flowed back to customers through a rider	\$3,187 ^{1/}
2	Adjustment to remove federal unprotected EDIT from rate base (-L1 minus L2)	<u>(\$3,187)</u>

1/ Company Supplemental Exhibit PMM-2, Schedule 1, page 3, Lines 86 plus 87.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF OTHER ADDITIONS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-2

Line No.	Item	NC Retail Adjusted Per Company 1/ (a)	Public Staff Adjustments 2/ (b)	NC Retail Adjusted Per Public Staff 3/ (c)	
1	1132030 - SAP A/R EE Purchase Program	\$0	\$0	\$0	Total Plant
2	1134010 - Joint Owner Receivable	-	-	-	Total Plant
3	1137050 - Account Receivable - ARM-Public	-	-	-	Total Plant
4	1137055 - Accounts Receivable - Other	-	-	-	Total Plant
5	1191210 - Prepaid Insurance - Executive Protection	-	-	-	Tot sal&wages
6	1191220 - Prepaid Insurance - Excess Liability	-	-	-	Tot sal&wages
7	1191240 - Prepaid Insurance - Nuclear Property	-	-	-	Tot sal&wages
8	1191250 - Prepaid Insurance - NEIL	-	-	-	Tot sal&wages
9	1191260 - Prepaid Insurance - General Property	-	-	-	Tot sal&wages
10	1191270 - Prepaid Insurance - Executive Life	-	-	-	Tot sal&wages
11	1191290 - Prepaid Insurance - Workers Comp.	-	-	-	Tot sal&wages
12	1191310 - Prepaid Auto Licenses	-	-	-	Tot sal&wages
13	1191330 - Prepaid Fees & Assessments	-	-	-	Tot sal&wages
14	1191900 - Prepaid - Miscellaneous	-	-	-	Tot sal&wages
15	1199010 - Temporary Facilities	-	-	-	Tot Dist Plant
16	1220910 - Other Non-Current Receivables	-	-	-	Factor 3
17	1242020 - Unamort. Loss on Reacquired Debt - Mrtg Bnd	-	-	-	Total net plant
18	1242022 - Reg Asset - Unamort. Loss - Reacquired Debt	-	-	-	
19	1242030 - Unamort. Loss on Reacquired Debt - Poll Cntrl	-	-	-	
20	1242045 - Unamort. Loss on Reacquired Debt - Write Off	-	-	-	
21	1242062 - Reg Asset - NRC Requirements - North Anna	-	-	-	Total net plant
22	1242063 - Reg Asset - NRC Requirements - Surry	-	-	-	Factor1
23	1250010 - Preliminary Survey and Investigations	-	-	-	Factor1
24	1251010 - Other Work in Progress	-	-	-	Total Dist Plant
25	1251020 - Other Work in Progress - Direct Post	-	-	-	Total Dist Plant
26	1292860 - Misc. Prepayments - Non Current	-	-	-	Total Sal&Wage
27	2220120 - Reg Liab - Deferred Gain on Reacquired Debt	-	-	-	
28	1242060 - Reg Asset - Unrecov. Design Basis Costs - NA	-	-	-	Factor 1D
29	1242061 - Reg Asset - Unrecov. Design Basis Costs - Surry	-	-	-	Factor 1D
30	1242070 - Reg Asset - Unrecov. Tech. Spec. Update	-	-	-	Factor 1D
31	1242205 & 1171205 - Reg Asset - NUG Buyout Costs	-	-	-	Factor 1D
32	1242265 & 1171265 - Reg Asset - Bear Garden Sub 479	-	-	-	Factor 1D
33	1242270 - Reg Asset - Emission Allowances - Non Current	-	-	-	
34	1171270 - Reg Asset - Emission Allowances - Current	-	-	-	
35	1171245 - Reg Asset - Nuclear Outage Deferral	-	-	-	Factor 1NUC
36	Reg Asset - Chesapeake Closure Costs	-	-	-	
37	1171280&1242280&1242285 Reg Asset - CCR Rule Expenditu	-	(14,607)	(14,607)	Factor3D
38	Reg Asset - Warren County Deferral	-	-	-	
39	Reg Asset - Brunswick County Deferral	-	-	-	
40	1171255 & 1242255 Reg Asset - North Branch Net Proceeds	-	-	-	
41	Rounding	37,149	-	37,149	
42	Total Other Additions	<u>\$37,149</u>	<u>(\$14,607)</u>	<u>\$22,542</u>	

1/ Based on review of Company Item 10 workpapers.

2/ Based on adjustments recommended by Public Staff.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF OTHER DEDUCTIONS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 2-3

Line No.	Item	NC Retail Adjusted Per Company ^{1/} (a)	Public Staff Adjustments ^{2/} (b)	NC Retail Adjusted Per Public Staff ^{3/} (c)
1	2171138 - Reg. Liab. - Other - NCUC Order (DOE Settlement)	\$0	\$0	\$0
2	2141100 - Accrued Vacation	-	-	-
3	2190010 - Capital Lease Obligation - Current	-	-	-
4	2290010 - Capital Lease Obligation - Noncurrent	-	-	-
5	2191000 - Appropriated Funds - Customer Accounts	-	-	-
6	2191800 - Centralized Appropriations	-	-	-
7	2192030 - Supplemental Pensions - Current	-	-	-
8	2192060 - Reserve for IBNR/FBNP Hospitalization	-	-	-
9	2192070 - Reserve for IBNR/FBNP Dental/Vision	-	-	-
10	2299025 - Accum. Provisions for Injuries and Damages	-	-	-
11	2141400 - Accr. Severance Pay	-	-	-
12	2199040 - Customer Advances for Construction	-	-	-
13	1292840 - FAS 112 - Deferred Post Employment Benefit	-	-	-
14	1292870 - ME Pension Asset / Oblig. - FAS 158 - Non Current	-	-	-
15	1291810 - Non Current Asset - Worker's Compensation	-	-	-
16	2291010 - Non Current Liability - Workers Compensation	-	-	-
17	2291030 - Non Current Liability - Long Term Disability	-	-	-
18	2291510 - OPEB ME 158 Benefit Obligation - Non Cur.	-	-	-
19	2291050 - Non Current Liability - Supplemental Post Empl	-	-	-
20	2291080 - Deferred Compensation - Executives	-	-	-
21	2299910 - Other Non Current Liabilities	-	-	-
22	6199010 - Other Income CIAC Tax Recovery	-	-	-
23	Company adjustment to eliminate nuclear outage deferral balance	(26,130)	-	(26,130)
24	Total Other Deductions	<u>(\$26,130)</u>	<u>\$0</u>	<u>(\$26,130)</u>

1/ Based on review of Company Item 10 workpapers.

2/ Based on adjustments recommended by Public Staff.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
NET OPERATING INCOME FOR RETURN
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 3

Line No.	Item	Under Present Rates			After Public Staff Recommended Increase		Base Fuel Only
		NC Retail Adjusted Per Company ^{1/}	Public Staff Adjustments ^{2/}	After Public Staff Adjustments ^{3/}	Rate Increase	After Rate Increase ^{10/}	
		(a)	(b)	(c)	(d)	(e)	
1	Electric operating revenues:						
2	Base non-fuel rate revenues	\$256,741	(\$48)	\$256,693	\$4,185 ^{4/}	\$260,878	
3	Base fuel revenues	91,845	-	91,845	(2,155) ^{5/}	89,690	89,690
4	Late payment fees	1,187	-	1,187	7 ^{6/}	1,194	
5	Other revenues	5,057	-	5,057	- ^{7/}	5,057	
6	Electric operating revenues (Sum of L2 thru L5)	354,830	(48)	354,782	\$2,037	356,819	89,690
7	Electric operating expenses:						
8	Operations and maintenance:						
9	Fuel clause expenses	91,725	(2,153)	89,572	-	89,572	89,572
10	Other operations and maintenance expenses	100,674	(2,252)	98,422	9 ^{8/}	98,431	117
11	Depreciation and amortization	64,586	(6,602)	57,984	-	57,984	
12	Gain / loss on disposition of property	225	-	225	-	225	
13	Taxes other than income taxes	14,319	-	14,319	-	14,319	
14	Income taxes	11,397	2,680	14,077	517 ^{9/}	14,594	
15	Total electric operating expenses (Sum of L8 thru L14)	282,926	(8,328)	274,598	526	275,125	89,689
16	Net operating income before adjustments (L6 - L15)	71,904	8,280	80,184	1,511	81,694	1
17	Interest on customer deposits	(72)	-	(72)	-	(72)	
18	Interest on tax deficiencies	(76)	-	(76)	-	(76)	
19	Net operating income for return (Sum of L16 thru L18)	\$71,756	\$8,280	\$80,036	\$1,511	\$81,546	\$1

1/ Company Supplemental Exhibit PMM-1, Page 1, Column 5, unless footnoted otherwise.

2/ Johnson Settlement Exhibit 1, Schedule 3-1, Column (u).

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

4/ Johnson Settlement Exhibit 1, Schedule 5, Line 7 minus other revenues on Line 5 minus late payment fees on Line 4.

5/ Johnson Settlement Exhibit 1, Schedule 5, Line 6.

6/ ((Line 6 minus Line 5) divided by (1 minus late payment fee rate of 0.320%)) minus (Line 6 minus Line 5).

7/ Based on testimony of Company witness Paul Haynes.

8/ Line 6 times (1 minus retention factor after uncollectibles and regulatory fee from Johnson Settlement Exhibit 1, Schedule 1-2, Line 10).

9/ Line 6 minus sum of Lines 8 thru 13 minus Johnson Settlement Exhibit 1, Schedule 5, Line 3, Column (a), times composite income tax rate of 25.6228%.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1
Page 1 of 3

Line No.	Item	Adjust Lobbying Expense (a)	Adjust Uncollectibles (b)	Adjust Storm Costs (c)	Remove Executive Compensation Costs (d)	Remove Employee Severance Costs (e)	Adjust Incentive Plan Costs (f)	Adjust O&M VRRP Costs (g)
1	Electric operating revenues:							
2	Base non-fuel rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Base fuel revenues	-	-	-	-	-	-	-
4	Late payment fees	-	-	-	-	-	-	-
5	Other revenues	-	-	-	-	- 10/	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-	-	-	-	-
7	Electric operating expenses:							
8	Operations and maintenance:							
9	Fuel clause expenses	-	-	-	-	-	-	-
10	Other operations and maintenance expenses	(42) 1/	(236) 2/	(81) 4/	(\$91) 5/	(\$302) 6/	(356) 7/	\$0 9/
11	Depreciation and amortization	-	-	-	-	-	-	-
12	Gain / loss on disposition of property	-	-	-	-	-	-	-
13	Taxes other than income taxes	-	-	-	-	-	-	-
14	Income taxes	11 3/	60 3/	21 3/	23 3/	77 3/	91 3/	- 3/
15	Total electric operating expenses (Sum of L8 thru L14)	(31)	(176)	(60)	(68)	(225)	(265)	-
16	Net operating income before adjustments (L6 - L15)	31	176	60	68	225	265	-
17	Interest on customer deposits	-	-	-	-	-	-	-
18	Interest on tax deficiencies	-	-	-	-	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$31	\$176	\$60	\$68	\$225	\$265	\$0
20	Calculated revenue requirement impact	8/ (\$42)	(\$236)	(\$81)	(\$92)	(\$304)	(\$358)	\$0

1/ Johnson Settlement Exhibit 1, Schedule 3-1(a), Line 5.

2/ Johnson Settlement Exhibit 1, Schedule 3-1(b), Line 9.

3/ Line 6 minus Sum of Lines 9 through 13 times composite income tax rate of 25.0228%.

4/ Johnson Settlement Exhibit 1, Schedule 3-1(c), Line 19.

5/ Johnson Settlement Exhibit 1, Schedule 3-1(d), Line 7.

6/ Johnson Exhibit 1, Schedule 3-1(e), Line 9.

7/ Johnson Exhibit 1, Schedule 3-1(f), Line 10.

8/ Negative of Line 19 divided by net income retention factor from Johnson Settlement Exhibit 1, Schedule 1-2, Line 14.

9/ Johnson Settlement Exhibit 1, Schedule 3-1(g), Line .

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1
Page 2 of 3

Line No.	Item	Remove Advertising Expense (h)	Customer Growth, Usage and Weather Normalization (i)	Non-Fuel Variable O&M Expense Displacement Adjustment (j)	Adjust Outside Service (k)	Remove Skiffes Creek Mitigation Costs (l)	Remove Chesterfield Units 3 & 4 Conversion Costs (m)	Remove Mt Storm Impairment Costs (n)
1	Electric operating revenues:							
2	Base non-fuel rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Base fuel revenues	-	-	-	-	-	-	-
4	Late payment fees	-	-	-	-	-	-	-
5	Other revenues	-	-	-	-	-	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-	-	-	-	-
7	Electric operating expenses:							
8	Operations and maintenance:							
9	Fuel clause expenses	-	-	-	-	-	-	-
10	Other operations and maintenance expenses	\$ (12) ^{10/}	(89) ^{11/}	(141) ^{12/}	(176) ^{13/}	(45) ^{14/}	- ^{15/}	(468) ^{16/}
11	Depreciation and amortization	-	-	-	-	-	-	-
12	Gain / loss on disposition of property	-	-	-	-	-	-	-
13	Taxes other than income taxes	-	-	-	-	-	-	-
14	Income taxes	3 ^{3/}	23 ^{3/}	36 ^{3/}	45 ^{3/}	11 ^{3/}	- ^{3/}	120 ^{3/}
15	Total electric operating expenses (Sum of L8 thru L14)	(9)	(66)	(105)	(131)	(34)	-	(348)
16	Net operating income before adjustments (L6 - L15)	9	66	105	131	34	-	348
17	Interest on customer deposits	-	-	-	-	-	-	-
18	Interest on tax deficiencies	-	-	-	-	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$9	\$66	\$105	\$131	\$34	\$0	\$348
20	Calculated revenue requirement impact	^{8/} (\$12)	(\$90)	(\$142)	(\$177)	(\$45)	\$0	(\$470)

10/ Johnson Settlement Exhibit 1, Schedule 3-1(h), Line 5.

11/ Johnson Settlement Exhibit 1, Schedule 3-1(i), Line 11.

12/ Johnson Settlement Exhibit 1, Schedule 3-1(j), Line 10.

13/ Johnson Settlement Exhibit 1, Schedule 3-1(m), Line 6.

14/ Johnson Settlement Exhibit 1, Schedule 2-1(b), Line 6.

15/ Johnson Settlement Exhibit 1, Schedule 2-1(e), Line 6.

16/ Johnson Settlement Exhibit 1, Schedule 2-1(c), Line 9.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1
Page 3 of 3

Line No.	Item	Inflation Adjustment (a)	Adjust CCR Costs (b)	Set Expense to Reflect Recommended Base Fuel Factor (c)	Set Revenue to Reflect Recommended Base Fuel Factor (d)	Adjust New Office Building (e)	Interest Synchronization Adjustment (f)	Total NOI Adjustments (g)
1	Electric operating revenues:							
2	Base non-fuel rate revenues	\$0	\$0	\$0	(\$48) 19/	\$0	\$0	(\$48)
3	Base fuel revenues	-	-	-	-	-	-	-
4	Late payment fees	-	-	-	-	-	-	-
5	Other revenues	-	-	-	-	-	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-	(48)	-	-	(48)
7	Electric operating expenses:							
8	Operations and maintenance:							
9	Fuel clause expenses	-	-	(2,153) 18/	-	-	-	(2,153)
10	Other operations and maintenance expenses	(10) 17/	-	-	-	(716) 20/	-	(2,252)
11	Depreciation and amortization	-	(6,090) 18/	-	-	-	-	(6,602)
12	Gain / loss on disposition of property	-	-	-	-	-	-	-
13	Taxes other than income taxes	-	-	-	-	-	-	-
14	Income taxes	3 3/	1,560 3/	552 3/	(12) 3/	183 3/	(127) 21/	2,680
15	Total electric operating expenses (Sum of L8 thru L14)	(7)	(4,530)	(1,601)	(12)	(533)	(127)	(8,328)
16	Net operating income before adjustments (L6 - L15)	7	4,530	1,601	(36)	533	127	8,280
17	Interest on customer deposits	-	-	-	-	-	-	-
18	Interest on tax deficiencies	-	-	-	-	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$7	\$4,530	\$1,601	(\$36)	\$533	\$127	\$8,280
20	Calculated revenue requirement impact 22/	(\$9)	(\$6,119)	(\$2,162)	\$49	(\$720)	(\$172)	(\$11,183)

17/ Johnson Settlement Exhibit 1, Schedule 3-1(k), Line 12.
18/ Manass Supplemental Exhibit I, Schedule 1, Line 5.
19/ Per Settlement Agreement
20/ Per Settlement Agreement
21/ Johnson Settlement Exhibit 1 Schedule 3-1(n), Line 8.
22/ Sum of Column (a) through Column (f).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO LOBBYING EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(a)

Line No.	Item	Amount
1	Internal Lobbying Costs to be removed per Public Staff	\$844 1/
2	External Lobbying Costs to be removed per Public Staff	<u>- 2/</u>
3	Total Lobbying Costs to be Excluded (L1 + L2)	844
4	NC Retail Allocation Factor	<u>4.9507% 3/</u>
5	NC Retail Lobbying Costs to be Excluded per Public Staff (-L3 x L4)	<u><u>(\$42)</u></u>

1/ E-1, Item 18(a) & Company responses to DR49 and DR119.

2/ Corrected amount per Settlement Agreement.

3/ NC Jurisdictional Factor 1.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Settlement Exhibit 1
Schedule 3-1(b)

ADJUSTMENT TO UNCOLLECTIBLES EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Amount
1	Average bad debt expense attributed to retail customers	\$24,084 ^{1/}
2	Percentage to North Carolina retail	4.8779% ^{2/}
3	Average bad debt expense for North Carolina retail (L1 x L2)	1,175
4	Average North Carolina retail revenues	357,717 ^{3/}
5	Uncollectibles percentage per Public Staff (L3 / L4)	0.3285%
6	North Carolina retail revenues (including fuel) adjusted for weather and customer growth per Company	348,586 ^{4/}
7	Uncollectibles expense per Public Staff (L5 x L6)	1,145
8	Amount per Company	1,381 ^{5/}
9	Adjustment to uncollectibles expense (L7 - L8)	(<u>\$236</u>)

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 151, Line 3 thru Line 6, divided by 4.

2/ NCUC Form E-1, Item No. 45a, Schedule 15, Line 399.

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 155. The average for the last 4 years; not 5.

4/ Company Exhibit PMM-1, Schedule 1, Col. 5, Line 2 + Line 3.

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 150, Line 3.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZED LEVEL OF
STORM O&M EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(c)

Line No.	Item	Amount
	<u>Overtime hours</u>	
1	2009	105,084 1/
2	2010	128,942 2/
3	2011	263,752 2/
4	2012	190,679 2/
5	2013	85,741 2/
6	2014	13,865 2/
7	2015	30,692 2/
8	2016	134,616 2/
9	2017	35,720 2/
10	2018	184,801 2/
11	Ten year average overtime wages ((Sum of L1 thru L10) / 10)	117,389
12	Hourly rate (in thousands)	0.0659 3/
13	Average overtime wages per Public Staff (L11 x L12)	7,736
14	Average overtime wages per Company	7,828 4/
15	Adjustment to overtime wages (L13 - L14)	(92)
16	NC retail percentage	4.9841% 5/
17	Adjustment to overtime wages - NC retail (L15 x L16)	(5)
18	Adjustment to other storm expenses - NC retail	(157) 6/
19	Public Staff adjustment - NC retail (L17 + L18)	(162)
20		50%
21	Public Staff adjustment - NC retail (L17 + L18)	\$ (81)

1/ DNCP Sub 532 Fernald Exhibit 1, Schedule 3-1 Storm Adj, Line 4.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 128, Lines 10 thru 18.

3/ divided by Line 18, Column (2), times (1 plus Line 4). - Zero placement corrected as part of Settlement Agreement.

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 128, Line 5.

5/ Salaries and wages factor from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 73.

6/ Johnson Settlement Exhibit 1, Schedule 3-1(c)(1), Line 17, Column (e).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZED LEVEL OF
STORM O&M EXPENSE EXCLUDING LABOR
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(c)(1)

Line No.	Item	Normalized Amount per Public Staff (a)	Normalized Amount per Company (b)	Public Staff Adjustment (c)	NC Retail Allocation Factor (d)	Public Staff Adjustment - NC Retail (e)
1	Acct 562 - Trans Op - Station Exp	\$0	\$0	\$0	4.2841%	\$0
2	Acct 563 - Trans Op - Ovrhd Lines	0	-	-	4.2071%	-
3	Acct 566 - Trans Op - Misc Exp	87	96	(9)	4.4492%	-
4	Acct 582 - Dist Op - Station Exp	7	8	(1)	5.7804%	-
5	Acct 583 - Dist Op - Ovhd Lines	2,332	2,354	(22)	7.5771%	(2)
6	Acct 584 - Dist Op - Ungrd Lines	272	297	(25)	3.7154%	(1)
7	Acct 585 - Dist Op - St Lt/Sig Lines	0	-	-	5.4307%	-
8	Acct 586 - Dist Op - Meters	24	25	(1)	2.5127%	-
9	Acct 587 - Dist Op - Cust Install	130	137	(7)	5.4413%	-
10	Acct 588 - Dist Op - Misc Exp	4,832	5,253	(421)	6.1822%	(26)
11	Acct 593 - Dist Maint - Ovrhd Ln	25,738	27,355	(1,617)	7.5771%	(123)
12	Acct 594 - Dist Maint - Ungrd Ln	1,061	1,139	(78)	3.7154%	(3)
13	Acct 595 - Dist Maint - Ln Trnsfm	727	783	(56)	4.4475%	(2)
14	Acct 596 - Dist Maint - St Lt/Sig	17	19	(2)	5.4307%	-
15	Acct 597 - Dist Maint - Meters	54	55	(1)	2.5127%	-
16	Acct 935 - Admin & Gen - Electric	15	17	(2)	6.1618%	-
17	Total	<u>\$35,296</u>	<u>\$37,538</u>	<u>(\$2,242)</u>		<u>(\$157)</u>

1/ Johnson Settlement Exhibit 1, Schedule 3-1(c)(2), Line 20, Column (k) divided by ten times distribution percentage for account from

Johnson Settlement Exhibit 1, Schedule 3-1(c)(2), Column (l).

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 129, Column (4).

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

4/ NCUC Form E-1, Item No. 45a - Supplemental Filing, Schedule 3.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
STORM O&M EXPENSES
EXCLUDING LABOR ADJUSTED
FOR INFLATION
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(c)(2)

Line No.	Item	2009 ^{1/}	2010 ^{1/}	2011 ^{1/}	2012 ^{1/}	2013 ^{1/}	2014 ^{2/}	2015 ^{3/}	2016 ^{4/}	2017 ^{5/}	2018 ^{6/}	Total for Ten Years ^{7/}	Distribution Percent ^{8/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	Acct 184 - Clearing Accounts	\$0	\$0	\$84	\$0	\$0	\$0	\$0	\$0	\$0	\$0	84	
2	Acct 562 - Trans Op - Station Exp	-	-	1	-	-	-	-	-	-	-	1	0.000%
3	Acct 563 - Trans Op - Ovrd Lines	-	-	-	-	-	-	-	-	-	-	-	0.000%
4	Acct 566 - Trans Op - Misc Exp	-	-	808	-	-	-	-	-	-	-	808	0.246%
5	Acct 582 - Dist Op - Station Exp	-	7	25	15	5	1	1	6	1	5	66	0.020%
6	Acct 583 - Dist Op - Ovrd Lines	1,911	2,195	7,603	2,094	809	173	229	2,117	570	4,025	21,727	6.607%
7	Acct 584 - Dist Op - Ungrd Lines	35	205	799	378	110	23	30	302	82	578	2,540	0.772%
8	Acct 585 - Dist Op - St LV/Sig Lines	-	-	-	-	-	-	-	-	-	-	-	0.000%
9	Acct 586 - Dist Op - Meters	11	10	40	88	15	3	4	21	3	25	220	0.087%
10	Acct 587 - Dist Op - Cust Install	55	86	299	93	23	5	6	163	59	420	1,209	0.368%
11	Acct 588 - Dist Op - Misc Exp	804	2,752	13,197	18,180	2,789	528	694	3,162	352	2,580	45,018	13.690%
12	Acct 593 - Dist Maint - Ovrd Ln	9,548	14,138	49,717	41,772	17,348	4,113	5,967	34,872	9,547	52,776	239,798	72.922%
13	Acct 594 - Dist Maint - Ungrd Ln	303	616	2,221	1,349	424	89	118	1,394	418	2,953	9,885	3.006%
14	Acct 595 - Dist Maint - Ln Trnsfm	180	545	1,885	1,545	212	42	56	670	203	1,432	6,770	2.059%
15	Acct 596 - Dist Maint - St LV/Sig	-	-	11	95	20	4	5	19	1	5	161	0.049%
16	Acct 597 - Dist Maint - Meters	38	28	98	1	20	4	6	84	27	193	499	0.152%
17	Acct 935 - Admin & Gen - Electric	-	10	29	60	1	-	-	5	-	35	140	0.043%
18	Total historical cost	12,885	20,593	76,817	65,689	21,776	4,985	7,116	42,815	11,283	65,007	328,926	100.001%
19	Inflation factor for year ^{9/}	1.1725	1.1473	1.1059	1.0870	1.0735	1.0580	1.0603	1.0531	1.0286	1.0000		
20	Total adjusted for inflation (L18 x L19)	\$ 15,108	\$ 23,626	\$ 84,952	\$ 71,382	\$ 23,379	\$ 5,274	\$ 7,545	\$ 45,088	\$ 11,585	\$ 65,007	\$ 352,947	

1/ Based on Company response to Public Staff Data Request No. 54, Item 4.

2/ Amounts from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 139 adjusted to remove labor component of service company charges based on Public Staff Data Request No. 113, Item 1.

3/ Amounts from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 139 adjusted to remove labor component of service company charges based on Public Staff Data Request No. 113, Item 1.

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 137.

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 136.

6/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 135.

7/ Sum of Columns (a) thru (j).

8/ Amount for account in Column (k) divided by total excluding clearing account from Column (k).

9/ One plus amount for year from Johnson Settlement Exhibit 1, Schedule 3-1(c)(3) Column (g).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Settlement Exhibit 1
Schedule 3-1(c)(3)

CALCULATION OF INFLATION
FACTORS TO BE APPLIED TO
HISTORICAL STORM COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Year	Consumer Price Index (CPI)		Finished Goods less Food & Energy		Intermediate Materials less Food & Energy		Average PPI	Average PPI %	Average CPI / PPI %
		CPI	CPI %							
		(a)	(b)	(c)	(d)	(e)	(f)	(g)		
1	2009	214.56	17.03%	171.48	173.38	172.43	17.47%	17.25%		
2	2010	218.08	15.14%	173.58	180.80	177.19	14.31%	14.73%		
3	2011	224.93	11.63%	177.79	191.99	184.89	9.55%	10.59%		
4	2012	229.60	9.36%	182.38	192.61	187.50	8.03%	8.70%		
5	2013	232.96	7.79%	185.10	193.78	189.44	6.92%	7.36%		
6	2014	236.71	6.08%	188.64	195.25	191.95	5.52%	5.80%		
7	2015	237.00	5.95%	192.36	189.46	190.91	6.10%	6.03%		
8	2016	240.01	4.62%	195.28	186.89	191.09	6.00%	5.31%		
9	2017	245.13	2.44%	198.88	193.34	196.11	3.28%	2.86%		
10	2018	251.10		203.33	201.77	202.55				

1/ Based on Company response to Public Staff Data Request No. 54, Item 10.

2/ Percentage of increase / (decrease) in average index in Column (a) from base year through test year.

3/ Average of index amounts in Columns (c) and (d).

4/ Percentage of increase / (decrease) in average index in Column (e) from base year through test year.

5/ Average of percentages in Columns (b) and (f).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE EXECUTIVE COMPENSATION AND
BENEFITS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(d)

Line No.	Item	Amount
1	System Amount of Total Compensation of Top 4 Executive Positions Per Public Staff	\$ 9,168 ^{1/}
2	Eliminate 50%	<u>(4,584) ^{2/}</u>
3	Amount of Executive Compensation to be Allocated to DENC	\$ 4,584
4	NC Retail Allocation Factor	<u>4.9841%</u>
5	NC Retail Amount of Executive Compensation to be Eliminated per Public Staff	(228)
6	NC retail amount of Executive Compensation to be Eliminated per Company	<u>(137) ^{3/}</u>
7	Public Staff Adjustment to Executive Compensation	<u>\$ (91)</u>

1/ Based on Company response to Public Staff Data Request No. 23.

2/ Public Staff position.

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 117.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE EMPLOYEE SEVERANCE PROGRAM
COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(e)

Line No.	Item	Amount
1	Average Major Corporate-Wide Employee Severance Program Costs	\$ 120,376 ^{1/}
2	Normalization Period	<u>4.17</u> ^{2/}
3	Normalized Severance Expense - System (Line 1/Line 2)	\$28,890
4	Test Year Major Corporate-Wide Severance Program Costs	<u>(1,078)</u> ^{3/}
5	System Adjustment (Line 3 - Line 4)	\$29,968
6	North Carolina Jurisdictional Allocation Factor	<u>4.9841%</u> ^{4/}
7	North Carolina Jurisdictional Adjustment Per Company (Line 3 x Line 6)	1,440
8	Normalized level per Public Staff	<u>\$1,138</u> ^{5/}
9	Public Staff Adjustment to Employee Severance Program Costs	<u>\$ (302)</u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 107, Line 7.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 107, Line 11.

3/ Based on response to Public Staff Data Request No. 51, Item 3.

4/ Salaries and wages factor from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 73.

5/ Based on 50% of the 2019 VRP costs normalized over 4.5 years per Settlement Agreement.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO ANNUAL INCENTIVE PLAN
EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(f)

Line No.	Item	Amount
	Annual Incentive Plan (AIP)	
1	VA Power Executive AIP expense associated with earnings	\$ 2,560 ^{1/}
2	NC jurisdictional allocation	<u>4.9841% ^{2/}</u>
3	Adjustment to remove AIP related to EPS outcomes - NC (-L1 x L2)	(128)
4	Executive AIP already removed in executive compensation adjustment	<u>83 ^{3/}</u>
5	Adjustment to AIP (L3 + L4)	<u>\$ (45)</u>
	Long Term Incentive Plan (LTI)	
6	LTI associated with ROIC and TSR at target	\$ 401 ^{4/}
7	Adjustment to remove LTI associated with ROIC and TSR - NC jurisdictional (-L6)	(401)
8	Executive LTI already removed in executive compensation adjustment	<u>90 ^{3/}</u>
9	Adjustment to LTI (L7 + L8)	<u>\$ (311)</u>
10	Adjustment to incentive plan expense (L5 + L9)	<u><u>\$ (356)</u></u>

1/ Per Settlement Agreement

2/ NC S&W Allocation factor.

3/ Based on executive compensation adjustment.

4/ Per Settlement Agreement

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO O&M VOLUNTARY
RETIREMENT PLAN (VRP) BACKFILL
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(g)

ADJUSTMENT NO LONGER REQUIRED

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE ADVERTISING EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(h)

Line No.	Item	Amount
1	Advertising Expense included per Company	\$ 1,293 ^{1/}
2	Less: Advertising not related to NC Jurisdiction	<u>(610) ^{2/}</u>
3	Advertising Expense related to VA Jurisdiction to be removed (L1 + L2)	683
4	NC Jurisdictional Allocation Factor	<u>5.0484%</u>
5	Adjustment to remove advertising before direct adjustment	(34)
6	NC direct advertising	<u>11 ^{3/}</u>
7	Adjustment to Remove Advertising Expense Per Public Staff (L5 + L6)	(23)
8		50%
9		<u><u>\$ (12)</u></u>

1/ NCUC Form E-1 Supplemental Item No. 10, page 149, Line 5.

2/ PS DR21-2(a).

3/ Per Settlement Agreement.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO EXPENSES FOR WEATHER
NORMALIZATION, CUSTOMER USAGE, AND
GROWTH IN CUSTOMERS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(i)

Line No.	Item	Amount
1	Total energy-related expenses not adjusted elsewhere for growth	\$3,587 1/
2	Test year per books MWH sales	4,400,784 2/
3	Rate per MWH (L1 / L2)	0.000815
4	Change in MWH sales related to normalization, usage and growth	(113,669) 3/
5	Adjustment to energy-related expenses (L3 x L4)	(93)
6	Total customer-related expenses not adjusted elsewhere for growth	1,271 4/
7	Test year billings, excluding duplicate bills	121,436 5/
8	Expense per bill (L6 / L7)	0.010466
9	Increase in billings due to customer growth	341 6/
10	Adjustment to customer related expenses (L8 x L9)	4
11	Total adjustment to O&M expenses (L5 + L10)	(\$89)

1/ Calculated by Public Staff utilizing cost of service study and other data provided by Company.

2/ Based on review of Company workpapers - Corrected from original filing.

3/ Company Supplemental Exhibit PBH-1, Schedule 2, Column (2), Line 54 less
test year amount on Line 2.

4/ Calculated by Public Staff utilizing cost of service study and other data provided by Company.

5/ Based on review of Company workpapers.

6/ Company Supplemental Exhibit PBH-1, Schedule 2, Column (1), Line 54 less
test year amount on Line 7.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT FOR NON-FUEL VARIABLE O&M EXPENSE
DISPLACEMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(j)

Line No.	Item	Amount
1	Greenville County CC commercial MWH generation monthly average	371,000 ^{1/}
2	Number of months	12
3	Annualized Greenville County CC generation (L1 x L2)	4,452,000
4	Actual for twelve months ended December 31, 2018	917,306 ^{2/}
5	Implicit adjustment to MWH generation	3,534,694
6	NC retail allocation factor	5.0924% ^{3/}
7	Line loss factor	95.8229% ^{4/}
8	Additional MWH generation added (L5 x L6 x L7)	172,482
9	Non-fuel energy-related expense factor used by Public Staff	0.000815 ^{5/}
10	NC retail displacement adjustment (L8 x -L9)	(\$141)

1/ Per Settlement Agreement.

2/ Per Settlement Agreement.

3/ Factor 3 from NCUC Form E-1, Item No. 45a, Schedule 15, Line 95.

4/ Annual MWH sales of 4,377,561 divided by Annual MWH at transmission level of 4,568,385 based on North Carolina jurisdictional amounts on NCUC Form E-1, Item No. 45f, Page 117.

5/ Johnson Settlement Exhibit 1, Schedule 3-1(i), Line 3.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Settlement Exhibit 1
Schedule 3-1(k)

ADJUSTMENT TO COMPANY'S INFLATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Amount
1	Remove Chesapeake closure costs from test year O&M expenses	\$0 1/
2	Remove Brunswick CC O&M expenses already at 2018 level	- 2/
3	Remove portion of Company storm adjustment already at 2018 level	- 3/
4	Reflect Public Staff adjustment for outside services	(209) 4/
5	Reflect Public Staff adjustment to storm costs	(157) 5/
6	Reflect Public Staff adjustment to remove Mt. Storm costs	- 6/
7	Reflect Public Staff adjustment to O&M expenses for changes in customer growth and usage	(89) 7/
8	Reflect Public Staff adjustment for O&M expense displacement	- 8/
9	Reflect Public Staff adjustment to remove Chesterfield Units 3 & 4 costs	- 9/
10	Total adjustment to O&M subject to inflation (Sum of L1 thru L9)	(455)
11	Inflation percentage	2.264% 10/
12	Public Staff adjustment (L10 x L11)	(\$10)

- 1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 111, Line 12.
2/ Corrected amount per Settlement Agreement.
Item No. 10 - Supplemental Filing, Page 143, Line 2 times Line 4.
3/ Corrected amount per Settlement Agreement.
4/ Johnson Settlement Exhibit 1, Schedule 3-1(m), Line 6.
5/ Johnson Settlement Exhibit 1, Schedule 3-1(c), Line 18.
6/ Corrected amount per Settlement Agreement.
7/ Johnson Settlement Exhibit 1, Schedule 3-1(i), Line 11.
8/ Johnson Settlement Exhibit 1, Schedule 3-1(j), Line 10 times Johnson Settlement Exhibit 1, Schedule 3-1(i)(1), Line 2
divided by Line 3.
9/ Corrected amount per Settlement Agreement.
10/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 166, Line 17.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Settlement Exhibit 1
Schedule 3-1(l)

ADJUSTMENT TO FUEL EXPENSE TO REFLECT
RECOMMENDED JURISDICTIONAL BASE FUEL FACTOR
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Amount
1	Annualized and normalized NC retail kWh sales	4,287,115,148 ^{1/}
2	Base fuel rate, excluding regulatory fee	<u>\$0.02089 ^{2/}</u>
3	Adjusted fuel clause expense (L1 x L2 / 1000)	89,558
4	Annualized pro forma fuel expense under present rates, per Company	<u>91,711 ^{3/}</u>
5	Public Staff adjustment to fuel clause expense (L3 - L4)	<u><u>(\$2,153)</u></u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 15, Line 3.

2/ Haynes Second Supplemental

3/ Company Second Supplemental Exhibit PMM-1, Schedule 7, Line 4.

Dominion Energy North Carolina
Docket No. E-22, Sub 562
ADJUSTMENT TO OUTSIDES SERVICES
For the Test Year Ended December 31, 2018

Johnson Exhibit 1
Schedule 3-1(m)

Line No.	Item	Amount
1	Legal invoices allocated from DES to be excluded	\$ 505 1/
2	Other allocations from DES to DENC to be excluded	758 1/
3	Legal Invoices - Direct DENC	<u>2,949 2/</u>
4	Total Outside Services to be excluded	(4,212)
5	NC Retail Allocation Factor	<u>4.9507%</u>
6	Public Staff Adjustment to Outside Services	<u>(209)</u>
		0.158
		<u><u>\$ (176)</u></u>

1/ Company response to DR14-2(b).

2/ Per Settlement Agreement.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
INTEREST SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(n)

Line No.	Item	Amount
1	Public Staff original cost rate base	\$1,131,758 ^{1/}
2	Public Staff long term debt ratio	48.000% ^{2/}
3	Public Staff embedded cost of debt	<u>4.442% ^{3/}</u>
4	Public Staff interest expense income tax deduction (L1 x L2 x L3)	24,133
5	Company interest expense income tax deduction	<u>23,638 ^{4/}</u>
6	Adjustment to interest expense (L4 - L5)	495
7	Composite tax rate	<u>25.6228% ^{5/}</u>
8	Adjustment to income taxes (-L6 x L7)	<u><u>(\$127)</u></u>

1/ Johnson Settlement Exhibit 1, Schedule 2, Line 10, Column (c).

2/ Johnson Settlement Exhibit 1, Schedule 4, Line 1, Column (a).

3/ Johnson Settlement Exhibit 1, Schedule 4, Line 1, Column (c).

4/ Johnson Settlement Exhibit 1, Schedule 3-1(n)(1), Line 4.

5/ Johnson Settlement Exhibit 1, Schedule 1-3, Line 8.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF COMPANY'S INTEREST
SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Settlement Exhibit 1
Schedule 3-1(n)(1)

Line No.	Item	Amount
1	NC retail rate base per Company	\$1,147,952 1/
2	Long term debt ratio per Company	46.351% 2/
3	Long term debt cost rate per Company	<u>4.442% 3/</u>
4	Interest tax deduction per Company (L1 x L2 x L3)	<u><u>\$23,638</u></u>

1/ Johnson Settlement Exhibit 1, Schedule 2, Line 10, Column (a).

2/ Company Supplemental Exhibit PMM-2, Page 8, Line 1, Column (1).

3/ Company Supplemental Exhibit PMM-2, Page 8, Line 1, Column (2).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
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
(In Thousands)

Johnson Settlement Exhibit 1
Schedule 4

Line No.	Item	Capitalization Ratio	Before Public Staff Proposed Increase				After Public Staff Proposed Increase			
			NC Retail Rate Base	Embedded Cost or Return	Weighted Cost or Return	Net Operating Income	NC Retail Rate Base	Embedded Cost or Return	Weighted Cost or Return	Net Operating Income
			(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Long-term debt	48,000% ^{1/}	\$543,244 ^{2/}	4.442% ^{1/}	2.13% ^{5/}	\$24,133 ^{6/}	\$543,463 ^{9/}	4.442% ^{1/}	2.13% ^{11/}	\$24,143 ^{12/}
2	Common equity	52,000% ^{1/}	588,514 ^{2/}	9.50% ^{4/}	4.94% ^{5/}	55,903 ^{7/}	588,751 ^{9/}	9.75% ^{1/}	5.07% ^{11/}	57,403 ^{12/}
3	Total (L1 + L2)	100,000%	\$1,131,758 ^{3/}		7.07%	\$80,036 ^{8/}	\$1,132,214 ^{10/}		7.200%	\$81,546

1/ Per Public Staff witness Woolridge.

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

3/ Johnson Settlement Exhibit 1, Schedule 2, Line 10, Column (c).

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

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

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

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

8/ Johnson Settlement Exhibit 1, Schedule 3, Line 19, Column (c).

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

10/ Johnson Settlement Exhibit 1, Schedule 2, Line 10, Column (e).

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

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF PUBLIC STAFF'S ADDITIONAL GROSS REVENUE
REQUIREMENT
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Settlement 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	\$24,143 ^{1/}	\$57,403 ^{4/}	\$81,546
2	Net operating income before proposed increase	<u>24,133 ^{2/}</u>	<u>55,903 ^{5/}</u>	<u>80,036</u>
3	Additional net operating income requirement (L1 - L2)	10	1,500	1,510
4	Retention factor	<u>0.9954193 ^{3/}</u>	<u>0.7403645 ^{6/}</u>	
5	Additional revenue requirement (L3 / L4)	<u>\$10</u>	<u>\$2,027</u>	<u>\$2,037</u>
	<u>Breakdown of additional revenue requirement</u>			
6	Public Staff recommended decrease in base fuel revenue requirement			<u>(\$2,155)</u>
7	Additional gross base non-fuel revenue requirement (L5 - L6)			<u>\$4,192</u>

- ^{1/} Johnson Settlement Exhibit 1, Schedule 4, Line 1, Column (i).
^{2/} Johnson Settlement Exhibit 1, Schedule 4, Line 1, Column (e).
^{3/} Johnson Settlement Exhibit 1, Schedule 1-2, Line 10.
^{4/} Johnson Settlement Exhibit 1, Schedule 4, Line 2, Column (i).
^{5/} Johnson Settlement Exhibit 1, Schedule 4, Line 2, Column (e).
^{6/} Johnson Settlement Exhibit 1, Schedule 1-2, Line 14.
^{7/} Column (a) plus Column (b).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF GROSS REVENUE EFFECT FACTORS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 1-2

Line No.	Item	Capital Structure (a)	Cost Rates (b)	Retention Factor (c)	Gross Revenue Effect (d)
1	<u>Rete Base Factor</u>				
2	Long-term debt	50.000% ^{1/}	4.442% ^{1/}	0.9954193 ^{2/}	0.0223143 ^{4/}
3	Common equity	50.000% ^{1/}	9.00% ^{1/}	0.7403645 ^{3/}	0.0607809 ^{4/}
4	Total (Sum of Lines 2 and 3)	<u>100.000%</u>			<u>0.0830952</u>
					<u>Amount</u>
5	<u>Net Income Factor</u>				
6	Total revenue				1.0000000
7	Uncollectibles				0.0032850 ^{5/}
8	Balance (L6 - L7)				0.9967150
9	Regulatory fee (L8 x 0.130%)	^{6/}			0.0012957
10	Balance (L8 - L9)				0.9954193
11	State income tax (L10 x 5.8517%)	^{7/}			0.0582490
12	Balance (L10 - L11)				0.9371703
13	Federal income tax (L12 x 21%)	^{8/}			0.1968058
14	Retention factor (L12 - L13)				<u>0.7403645</u>

1/ Per Public Staff witness Woolridge.

2/ Line 10.

3/ Line 14.

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

5/ Johnson Exhibit 1, Schedule 3-1(b), Line 5.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
**CALCULATION OF WEIGHTED
STATE INCOME TAX RATE**
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 1-3

Line No.	Item	Total System (a)	Virginia (b)	North Carolina (c)	Washington DC (d)	West Virginia (e)
1	<u>Weighted state income tax rate</u>					
2	Apportionment factor		93.5230% 2/	3.6873% 4/	0.0000% 2/	2.2788% 2/
3	State income tax rate		6.00% 2/	2.50% 5/	8.25% 2/	6.50% 2/
4	Weighted state income tax rate	5.8517% 1/	5.61138% 3/	0.09218% 3/	0.00000% 3/	0.14812% 3/
5	<u>Composite income tax rate</u>					
6	Weighted state income tax rate (L4)	5.8517%				
7	Federal income tax rate	21% 6/				
8	Composite income tax rate	25.6228% 7/				

1/ Sum of Columns (b) through (e).

2/ NCUC Form E-1, Item No. 13a6(2)va_new.

3/ Line 1 times Line 2.

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 286, Line 3.

5/ Based on North Carolina Department of Revenue Notice dated December 2018.

6/ Statutory rate.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ORIGINAL COST RATE BASE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2

Line No.	Item	Under Present Rates			After Public Staff Recommended Increase	
		NC Retail Adjusted Per Company 1/	Public Staff Adjustments 2/	After Public Staff Adjustments 3/	Rate Increase	After Rate Increase 5/
		(a)	(b)	(c)	(d)	(e)
1	Electric plant in service	\$2,142,169	(\$5,709)	\$2,136,460	\$0	\$2,136,460
2	Accumulated depreciation and amortization	(777,432)	(1,223)	(778,655)	-	(778,655)
3	Net electric plant in service (L1 + L2)	1,364,737	(6,932)	1,357,805	-	1,357,805
4	Materials and supplies	40,755	-	40,755	-	40,755
5	Cash working capital	14,451	(169)	14,282	(1,728) 4/	12,554
6	Other additions	37,149	(14,607)	22,542	-	22,542
7	Other deductions	(26,130)	-	(26,130)	-	(26,130)
8	Customer deposits	(4,615)	-	(4,615)	-	(4,615)
9	Accumulated deferred income taxes	(278,395)	5,214	(273,181)	-	(273,181)
10	Total original cost rate base (Sum of L3 thru L9)	\$1,147,952	(\$16,494)	\$1,131,458	(\$1,728)	\$1,129,730

- 1/ Company Supplemental Exhibit PMM-1, Page 2, Column 5.
2/ Johnson Exhibit 1, Schedule 2-1, Column (h).
3/ Column (a) plus Column (b).
4/ Johnson Exhibit 1, Schedule 2-1(g), Line 44, Column (k).
5/ Column (c) plus Column (d).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 582
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF RATE BASE
ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-1

Line No.	Item	Adjust ADAT for Certain Balances (a)	Remove Mt Storm Impairment Costs (b)	Adjust NUG Contract Terminations Expense (c)	Remove Skiffes Creek Mitigation Costs (d)	Remove Chesterfield Units 3 & 4 Conversion Costs (e)	Adjust CCR Costs (f)	Adjust Cash Working Capital (g)	Total Rate Base Adjustments (h)
1	Electric plant in service	\$0	\$0	\$0	\$ (4,437) 4/	\$ (1,272) 7/	\$0	\$0	(\$5,709)
2	Accumulated depreciation and amortization	-	(993)	(397)	118 5/	48 6/	-	-	(1,223)
3	Net electric plant in service (L1 + L2)	-	(993)	(397)	(4,318)	(1,224)	-	-	(6,932)
4	Materials and supplies	-	-	-	-	-	-	-	-
5	Cash working capital	-	-	-	-	-	-	(\$169)	(169)
6	Other additions	-	-	-	-	-	(14,607)	-	(14,607)
7	Other deductions	-	-	-	-	-	-	-	-
8	Customer deposits	-	-	-	-	-	-	-	-
9	Accumulated deferred income taxes	8	-	-	1,137 6/	326 6/	3,743	-	5,214
10	Total original cost rate base (Sum of L3 thru L9)	\$8	(\$993)	(\$397)	(\$3,181)	(\$968)	(\$10,864)	(\$169)	(\$16,494)
11	Revenue requirement impact	13/ \$1	(\$89)	(\$33)	(\$264)	(\$75)	(\$903)	(\$14)	(\$1,371)

1/ Johnson Exhibit 1, Schedule 2-1(a), Line 10.
2/ Johnson Exhibit 1, Schedule 2-1(c), Column .
3/ Johnson Exhibit 1, Schedule 2-1(d), Line 11.
4/ Johnson Exhibit 1, Schedule 2-1(b), Line 3.
5/ Johnson Exhibit 1, Schedule 2-1(b), Line 5.
6/ Johnson Exhibit 1, Schedule 2-1(b), Line 4.
7/ Johnson Exhibit 1, Schedule 2-1(a), Line 3.

8/ Johnson Exhibit 1, Schedule 2-1(e), Line 5.
9/ Johnson Exhibit 1, Schedule 2-1(e), Line 4.
10/ Per Public Staff witness Maness.
11/ Johnson Exhibit 1, Schedule 2-1(f), Line 45.
12/ Sum of Column (a) through Column (g).
13/ Line 10 times rate base retention factor of 0.0830952 from Johnson Exhibit 1, Schedule 1-2.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO ELIMINATE CERTAIN ADIT
BALANCES
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 2-1(a)

Line No.	Item	Amount
	Eliminate ADIT related to TCJA Regulatory Liabilities	
1	Reg Liability - COS Tax Gross Up	\$ (8,196) ^{1/}
2	Reg Liability - COS Tax Gross Up Current	(20,029) ^{1/}
3	Reg Liability - EDIT Amort - Fed Tax Reform	(12,856) ^{1/}
4	Deferred State Taxes	(11,447) ^{2/}
5	Federal Effect of State	2,404 ^{1/}
6	Total System Tax Reform Reserves ADIT (sum of L 1 thru 5)	<u>\$ 50,124</u>
7	NC Retail allocation factor	5.0484% ^{3/}
8	Total NC Tax Reform Reserves ADIT per the Public Staff (L6 x L7)	<u>\$ 2,530</u>
9	Tax NC Reform Reserves Balance ADIT per Company	<u>2,522 ^{4/}</u>
10	Adjustment Eliminate ADIT related to TCJA Regulatory Liabilities (L8 - L9)	<u><u>\$ 8</u></u>

1/ NCUC Form E-1, Item No. 10, page 284, lines 16 through 20.

2/ Company response to Public Staff data request 27-2.

3/ NCUC Form E-1, Item No. 45a, Schedule 15, Line 393.

4/ NCUC Form E-1, Item No. 10, page 283, line 8.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE SKIFFES CREEK MITIGATION COSTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 2-1(b)

Line No.	Item	Amount
1	Skiffes Creek Mitigation Costs - System	\$ 105,612 ^{1/}
2	NC Power Supply Transmission Factor 2	4.2009% ^{2/}
3	Public Staff adjustment to remove Skiffes Creek mitigation costs from rate base (L3 x L4)	<u>\$ (4,437)</u>
4	Adjustment to remove ADIT associated with Skiffes Creek	<u>\$ 1,137</u> ^{3/}
5	Accumulated Depreciation associated with Skiffes Creek	<u>\$ 118</u> ^{4/}
6	Depreciation expense associated with Skiffes Creek	<u>\$ (118)</u> ^{5/}

1/ Based on recommendation of Public Staff witness David Williamson.

2/ Factor 2 from NCUC Form E-1, Item No. 45a, Schedule 15, Line 14.

3/ Negative of Line 3 amount times composite income tax rate.

4/ Negative of Line 3 amount times depreciation rate recommended by Public Staff witness Lucas.

5/ Line 3 amount times depreciation rate recommended by Public Staff witness Lucas.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
**ADJUSTMENT TO REMOVE IMPAIRMENT COSTS FOR MT
STORM**
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-1(c)

Line No.	Item	Amount
1	Mt Storm Fuel Flexibility Project Impairment - System	\$ 62,364 ^{1/}
2	Disallowance per Public Staff	<u>(60,179) ^{2/}</u>
3	Revised Mt Storm Impairment Expense (L1 - L2)	2,185
4	NC Retail Factor 1	4.9507%
5	NC Retail Regulatory Asset (L3 x L4)	<u>\$ 108</u>
6	Amortization Period (3 Years)	<u>3</u>
7	Regulatory Asset Amortization per Public Staff (L5/L6)	36
8	Regulatory Asset Amortization per Company	<u>1,029 ^{1/}</u>
9	Public Staff Adjustment to remove Mt Storm Impairment Expense (L7 - L8)	<u><u>\$ (993)</u></u>

1/ Company Adjustment SUPP-5.

2/ Based on recommendation of Public Staff witness Thomas.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NUG CONTRACT TERMINATION EXPENSE
REGULATORY ASSET
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
 Schedule 2-1(d)

Line No.	Description	Amount (a)
1	NUG Contract Termination Expense - System	\$ 135,000 ^{1/}
2	Less: Net Capacity Revenue/Replacement Cost	<u>21,400 ^{2/}</u>
3	Revised NUG Contract Termination Expense (L1 - L2)	\$ 113,600
4	NC Retail Factor 1	<u>4.9507%</u>
5	NUG Contract Termination Expense per Public Staff (L3 x L4)	\$ 5,624
6	Remaining Months in Contract (April 2019 - November 2021)	32
7	Monthly Amortization	\$ 176
8	Times: Twelve Months	<u>12</u>
9	Annual Amortization per Public Staff (L7 x L8)	\$ 2,109
10	Annual Amortization per Company	<u>2,506 ^{1/}</u>
11	Public Staff Adjustment to NUG Contract Termination Expense Reg Asset	<u>\$ (397)</u>

1/ Company Adjustment SUPP-2.

2/ Based on information provided by the Company. (Email 8/15/19)

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE COSTS FOR CHESTERFIELD UNITS 3 &
4
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 2-1(e)

Line No.	Item	Amount
1	Chesterfield Units 3 & 4 Total System Common Costs	\$ 25,700 ^{1/}
2	NC Retail Factor	4.9507% ^{2/}
3	Public Staff adjustment to remove Chesterfield Units 3 & 4 conversion costs (L1 x L2)	<u>\$ (1,272)</u>
4	Adjustment to remove ADIT associated with Chesterfield Units 3 & 4	<u>\$ 326 ^{3/}</u>
5	Accumulated Depreciation associated with Chesterfield Units 3 & 4	<u>\$ 48 ^{4/}</u>
6	Depreciation expense associated with Chesterfield Units 3 & 4	<u>\$ (48) ^{5/}</u>

1/ Based on recommendation of Public Staff witness Lucas

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 310, Account 1242063.

3/ Negative of Line 3 amount times composite income tax rate.

4/ Negative of Line 3 amount times depreciation rate recommended by Public Staff witness Lucas.

5/ Line 3 amount times depreciation rate recommended by Public Staff witness Lucas.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-1(f)

Line No.	Item	Per Books Amounts 1/	Company Rate-making Adjustments 5/	After Company Adjustments 7/	Public Staff Adjustments 6/	After Public Staff Adjustments 8/	(Lead) / Lag Days 10/	Working Capital From Lead/Lag Study 14/
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Electric operating revenues:							
2	Rate revenues	\$353,978 2/	(\$5,393) 8/	\$348,585	\$0	\$348,585	43.38 11/	\$41,410
3	Sales for resale revenues	1,126 2/	-	1,126	-	1,126	38.01 11/	120
4	Other operating revenues	5,641 2/	(823) 8/	5,118	-	5,118	25.19 11/	353
5	Electric operating revenues	361,045	(8,216)	354,829	-	354,829	43.08	41,883
6	Account 601 - Fuel	24,682	(3,709)	20,973	(382)	20,591	(33.27) 12/	(1,877)
7	Account 518 - Nuclear Fuel	8,487	(1,275)	7,212	(131)	7,080	(3.21) 12/	(82)
8	Account 547 - Other Fuel	55,934	(8,405)	47,529	(888)	46,641	(33.27) 12/	(4,253)
9	Account 555 - Purchased Power	49,912	(25,884)	24,028	(773)	23,255	(28.21)	(1,797)
10	Account 557 - Deferred Fuel	(27,204)	27,204	-	-	-	- 13/	-
11	Payroll expense	34,032	(2,336)	31,693	(1,064)	30,629	(28.90) 12/	(2,257)
12	Benefits and pension expense	8,485	(263)	8,192	-	8,191	(31.81) 12/	(714)
13	OPEX expense	(1,721)	-	(1,721)	-	(1,721)	(20.64) 12/	97
14	Uncollectibles expense	1,109	272	1,381	(236)	1,144	(254.79)	(799)
15	Stores expense	9,243	-	9,243	-	9,243	(43.92)	(1,112)
16	Accrued vacation expense	81	-	81	-	81	- 13/	-
17	Worker's compensation expense	73	-	73	-	73	-	-
18	Prepaid insurance amortization expense	412	-	412	-	412	-	-
19	Director's deferred compensation expense	-	-	-	-	-	-	-
20	Miscellaneous prepaid expense	503	-	503	-	503	-	-
21	Other O&M expense	34,997	7,805	42,802	(4,563)	38,239	(43.65) 12/	(4,573)
22	Total O&M expenses	199,025	(8,624)	162,401	(8,015)	184,384		(17,347)
23	Depreciation and amortization expense	60,088 3/	4,621	64,587	(7,312)	57,275	-	-
24	Current state and federal income taxes	(2,846)	723	(2,123)	-	(2,123)	1,350	325
25	Deferred state and federal income taxes	13,456	138	13,594	3,473	13,594	87.00 12/	-
26	Deferred ITC	(74)	-	(74)	-	(74)	-	-
27	Total income taxes	10,536	881	11,397	3,473	14,670		325
28	North Carolina franchise tax	486	-	486	-	486	(523.00)	(606)
29	Property tax expense	10,842	(84)	10,558	-	10,558	(111.96)	(3,239)
30	West Virginia B&O tax expense	1,045	-	1,045	-	1,045	(39.54)	(113)
31	Payroll taxes	2,307	(179)	2,128	-	2,128	(27.26)	(159)
32	Other taxes	102	-	102	-	102	(31.06)	(9)
33	Total taxes other than income	14,582	(263)	14,319	-	14,319		(4,216)
34	Gain / loss on disposition of property	238	(13)	225	-	225	-	-

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY UNDER PRESENT RATES
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson 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 ^{14/}
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
35	Total electric operating expenses	284,447	(1,518)	282,929	(11,855)	271,072	-	(21,238)
38	AFUDC	235	(235)	-	-	-	-	-
37	Charitable contributions	330	(330)	-	-	-	-	-
38	Interest on customer deposits	72	-	72	-	72	(182.50)	(36)
39	Interest on tax deficiencies	76	-	76	-	76	- 13 ^{7/}	-
40	Interest expense	24,539	(902)	23,637	1,760	25,397	(90.93)	(6,327)
41	Income available for common equity	51,816 ^{4/}	(3,701) ^{4/}	48,115	10,095	58,210	-	-
42	Total requirement	\$ 361,045	\$ (6,218)	\$ 354,829	\$ -	\$ 354,827	-	\$ (27,601)
43	Cash working capital per Public Staff (L6 + L41)							\$14,282
44	Amount per Company application							14,451 ^{15/}
45	Adjustment to cash working capital							(\$169)

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (1), unless footnoted otherwise.

2/ NCUC Form E-1, Item No. 45a, Schedule 2.

3/ Company Supplemental Exhibit PMM-1, Page 1, Line 9, Column (3).

4/ Line 5 minus (Sum of Lines 35 through 39).

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (2), unless footnoted otherwise.

6/ Company Supplemental Exhibit PMM-1, Page 1, Lines 2 through 5, Column (4).

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

8/ Johnson Exhibit 1, Schedule 2-1(f)(1), Column (z).

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

10/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (6), unless footnoted otherwise.

11/ Calculated based on the Company's lead-lag worksheets, and the per books amounts for 2015.

12/ Calculated by Public Staff.

13/ Updated composite revenue lag from Column (f), Line 5.

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

15/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 308, Column (8).

Jefferson Exhibit 1
 Schedule 3-7-07
 Page 1 of 2

Line	Item	Actual ADT for Current Period	Percent of Income In State Income	Actual Liabilities	Actual Assets	Actual Major Debt	Reason for Change in Assets	Actual Allocation of Assets to Liabilities	Reason for Change in Assets	Reason for Change in Assets
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
1	Operating expenses	100	100	100	100	100	100	100	100	100
2	Salaries	100	100	100	100	100	100	100	100	100
3	Salaries for management	100	100	100	100	100	100	100	100	100
4	Other operating expenses	100	100	100	100	100	100	100	100	100
5	Operating expenses	100	100	100	100	100	100	100	100	100
6	Operating expenses	100	100	100	100	100	100	100	100	100
7	Operating expenses	100	100	100	100	100	100	100	100	100
8	Account 501 - Fuel	-	-	-	-	-	-	-	-	-
9	Account 515 - Highway Fuel	-	-	-	-	-	-	-	-	-
10	Account 517 - Other Fuel	-	-	-	-	-	-	-	-	-
11	Account 580 - Fuel/Power Plant	-	-	-	-	-	-	-	-	-
12	Account 582 - Delivered Fuel	-	-	-	-	-	-	-	-	-
13	Plant and equipment	-	-	-	-	-	-	-	-	-
14	Benefits and pension expense	-	-	-	-	-	-	-	-	-
15	CPES expense	-	-	-	-	-	-	-	-	-
16	Unaffiliated expense	-	-	-	-	-	-	-	-	-
17	CPES expense	-	-	-	-	-	-	-	-	-
18	Actual related expense	-	-	-	-	-	-	-	-	-
19	Worker's compensation expense	-	-	-	-	-	-	-	-	-
20	Insurance expense on other expense	-	-	-	-	-	-	-	-	-
21	Overhead (indirect) compensation expense	-	-	-	-	-	-	-	-	-
22	Manufacturing process expense	-	-	-	-	-	-	-	-	-
23	Other O&M expense	-	-	-	-	-	-	-	-	-
24	Total O&M expense	-	-	-	-	-	-	-	-	-
25	Depreciation and amortization expense	-	-	-	-	-	-	-	-	-
26	Current state and federal income taxes	-	-	-	-	-	-	-	-	-
27	Thermal state and federal expense taxes	-	-	-	-	-	-	-	-	-
28	Delivered FID	-	-	-	-	-	-	-	-	-
29	Other income taxes	-	-	-	-	-	-	-	-	-
30	North Carolina franchise fee	-	-	-	-	-	-	-	-	-
31	Property fee expense	-	-	-	-	-	-	-	-	-
32	North Carolina S&B fee expense	-	-	-	-	-	-	-	-	-
33	Plant fixed	-	-	-	-	-	-	-	-	-
34	Other fixed	-	-	-	-	-	-	-	-	-
35	Total fixed assets other than income	-	-	-	-	-	-	-	-	-
36	Over / less on disposition of property	-	-	-	-	-	-	-	-	-
37	Total assets operating expense	-	-	-	-	-	-	-	-	-
38	Charitable contributions	-	-	-	-	-	-	-	-	-
39	Interest on government deposits	-	-	-	-	-	-	-	-	-
40	Interest on tax liabilities	-	-	-	-	-	-	-	-	-
41	Interest expense	-	-	-	-	-	-	-	-	-
42	Income tax expense for common equity	-	-	-	-	-	-	-	-	-
43	Total expense	-	-	-	-	-	-	-	-	-

[†] Based on experiments made by Public Staff in January, February 1, September 2-3.

DOMINION ENERGY NORTH CAROLINA
 Exhibit No. 2-02, Sub. 007
 North Carolina Total Compensation
 PUBLIC STAFF ADJUSTMENTS TO BE
 REFLECTED IN LAD CALCULATION
 For the Year Ending December 31, 2019
 (in thousands)

Johnson Exhibit 1
 Schedule 24 (N)1
 Page 1 of 3

Line	Item	Adjusted Compensation Reported Pursuant to LAD	Reported Executive Compensation	Adjusted CCR	Reported Compensation Units 5.6.1	Adjusted Annual Compensation	Adjusted ODU VMP	Reported Adjustment Expense	Adjusted Outside Director
		(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
1	Base salary	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	Salary for outside director	-	-	-	-	-	-	-	-
3	Other operating expenses	-	-	-	-	-	-	-	-
4	Director operating expenses	-	-	-	-	-	-	-	-
5	Adjusted 5.6.1 - Fuel	-	-	-	-	-	-	-	-
6	Adjusted 5.6.2 - Nuclear Fuel	-	-	-	-	-	-	-	-
7	Adjusted 5.6.3 - Other Fuel	-	-	-	-	-	-	-	-
8	Adjusted 5.6.4 - Purchased Power	-	-	-	-	-	-	-	-
9	Adjusted 5.6.5 - Other Fuel	-	-	-	-	-	-	-	-
10	Reported expenses	-	-	-	-	872	-	-	-
11	Director's and personal expenses	-	-	-	-	-	-	-	-
12	ODU expenses	-	-	-	-	-	-	-	-
13	Director's expenses	-	-	-	-	-	-	-	-
14	Director's expenses	-	-	-	-	-	-	-	-
15	Director's expenses	-	-	-	-	-	-	-	-
16	Director's expenses	-	-	-	-	-	-	-	-
17	Director's compensation expenses	-	-	-	-	-	-	-	-
18	Director's compensation expenses	-	-	-	-	-	-	-	-
19	Director's compensation expenses	-	-	-	-	-	-	-	-
20	Director's compensation expenses	-	-	-	-	-	-	-	-
21	Other ODU expenses	-	293	-	-	-	1,862	293	2,448
22	Total ODU expenses	-	293	-	-	1,862	1,862	293	2,448
23	Director's and compensation expenses	-	-	18,132	148	-	-	-	-
24	Current salary and bonus income taxes	-	23	1,877	10	182	636	9	82
25	Current salary and bonus income taxes	-	-	-	-	-	-	-	-
26	Deferred TC	-	-	-	-	-	-	-	-
27	Total income taxes	-	23	1,877	10	182	636	9	82
28	North Carolina franchise fee	-	-	-	-	-	-	-	-
29	Property tax expenses	-	-	-	-	-	-	-	-
30	West Virginia S&C fee expense	-	-	-	-	-	-	-	-
31	Reported taxes	-	-	-	-	-	-	-	-
32	Other taxes	-	-	-	-	-	-	-	-
33	Total taxes and other taxes	-	-	-	-	-	-	-	-
34	Gain / loss on disposition of property	-	-	-	-	-	-	-	-
35	Total equity operating expenses	-	293	18,132	158	1,862	1,272	293	1,882
36	Charitable contributions	-	-	-	-	-	-	-	-
37	Interest on director's accounts	-	-	-	-	-	-	-	-
38	Interest on director's accounts	-	-	-	-	-	-	-	-
39	Interest on director's accounts	-	-	-	-	-	-	-	-
40	Interest on director's accounts	-	-	-	-	-	-	-	-
41	Total expenses	-	293	18,132	158	1,862	1,272	293	1,882

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Exhibit 1
Schedule 2-1(f)
Page 1 of 2

CALCULATION OF WORKING CAPITAL FROM
LEAD / LAG STUDY AFTER RATE INCREASE
For the Test Year Ended December 31, 2018
(In Thousands)

Line No.	Item	Under Present Rates	(Lead)	Iteration 1		CWC Change
		After Adjustments 1/	Lag Days 2/	Increase	With Increase 11/	
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Rate revenues	\$348,585	43.36	(\$0,820) 3/	\$338,765	(\$1,187)
3	Sales for resale revenues	1,128	38.81	-	1,128	-
4	Other operating revenues	5,118	25.19	(32) 4/	5,086	(2)
5	Electric operating revenues	354,829	43.06	(9,852)	344,977	(1,109)
6	Account 501 - Fuel	20,591	(33.27)	-	20,591	-
7	Account 518 - Nuclear Fuel	7,080	(3.21)	-	7,080	-
8	Account 547 - Other Fuel	46,954	(33.27)	-	46,954	-
9	Account 555 - Purchased Power	23,255	(28.21)	-	23,255	-
10	Account 557 - Deferred Fuel	-	-	-	-	-
11	Payroll expense	30,829	(26.80)	-	30,829	-
12	Benefits and pension expense	8,191	(31.81)	-	8,191	-
13	OPEB expense	(1,721)	(23.84)	-	(1,721)	-
14	Uncollectibles expense	1,144	(254.70)	(32) 5/	1,112	23
15	Stores expense	8,243	(43.82)	-	8,243	-
16	Accrued vacation expense	81	-	-	81	-
17	Worker's compensation expense	73	-	-	73	-
18	Prepaid insurance amortization exp.	412	-	-	412	-
19	Director's deferred compensation exp.	-	-	-	-	-
20	Miscellaneous prepaid expense	503	-	-	503	-
21	Other O&M expense	38,239	(43.65)	(13) 6/	38,226	2
22	Total O&M expenses	184,384	-	(45)	184,339	25
23	Depreciation and amortization exp.	57,275	-	-	57,275	-
24	Net current income taxes	1,350	87.80	(2,513) 7/	(1,153)	(905)
25	Deferred state and federal income taxes	13,594	-	-	13,594	-
26	Deferred LTC	(74)	-	-	(74)	-
27	Total income taxes	14,870	-	(2,513)	12,357	(905)
28	North Carolina franchise tax	486	(523.00)	-	486	-
29	Property tax expense	10,558	(111.00)	-	10,558	-
30	West Virginia S&O tax expense	1,945	(30.54)	-	1,945	-
31	Payroll taxes	2,128	(27.26)	-	2,128	-
32	Other taxes	102	(31.00)	-	102	-
33	Total taxes other than income	14,319	-	-	14,319	-
34	Gain / loss on disposition of property	225	-	-	225	-
35	Total electric operating expenses	271,072	-	(2,558)	268,514	(590)
36	Charitable contributions	-	-	-	-	-
37	Interest on customer deposits	72	(182.50)	-	72	-
38	Interest on tax delinquencies	78	-	-	78	-
39	Other expenses / (income)	148	-	-	148	-
40	Interest expense	25,397	(80.83)	-	25,397	-
41	Income available for common equity	58,210	-	(7,294) 10/	50,916 12/	-
42	Net operating income for return	83,697	-	(7,294)	76,403	-
43	Total requirement	\$354,827	-	(\$0,852)	\$344,975	(\$580)
44	Cumulative change in working capital	-	-	-	-	(\$1,740)
45	Rate base under present rates	-	-	-	-	1,131,458
46	Rate base after rate increase	\$1,131,458 2/	-	-	-	\$1,129,720
47	Overall rate of return (L42 / L46)	7.30%	-	-	-	8.76%
48	Target rate of return	6.72% 3/	-	-	-	6.72% 3/

1/ Johnson Exhibit 1, Schedule 2-1(f), Column (e).

2/ Johnson Exhibit 1, Schedule 2, Line 10, Column (c).

3/ Johnson Exhibit 1, Schedule 4, Line 3, Column (h).

4/ Johnson Exhibit 1, Schedule 2-1(f), Column (f).

5/ Line 5 minus Line 4 minus Line 3.

6/ (Line 5 minus \$330,000) divided by (1 minus 0.0031895191162212) minus (Line 5 minus \$330,000) plus \$330,000.

7/ Line 5 times 0.3285%.

8/ Line 5 times 0.130%.

9/ (Line 41 divided by (1 minus 25.6228%)) minus Line 41.

10/ Column (c) minus Column (a).

11/ Column (a) plus Column (c), unless footnoted otherwise.

12/ Line 40, Column (a) times 50.0007% times 0.000%.

13/ Column (c) divided by 365 days times Column (b).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 582
North Carolina Retail Operations
CALCULATION OF WORKING CAPITAL
FROM LEAD / LAG STUDY AFTER RATE
INCREASE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-1(g)
Page 2 of 2

Line No.	Item	Iteration 2			Iteration 3			After Increase	
		Increase	With Increase 15/	CWIC Change 16/	Increase	With Increase 21/	CWIC Change 24/	Cumulative Increase	After Increase
		(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
1	Electric operating revenues:								
2	Rate revenues	(\$413) or	\$338,352	(\$40)	\$2 or	\$338,354	\$0	(\$10,231)	\$338,354
3	Sales for resale revenues		1,128	-		1,128	-		1,128
4	Other operating revenues	(1) 14/	5,085	-	- 14/	5,085	-	(33)	5,085
5	Electric operating revenues	(414)	344,563	(40)	2	344,565	-	(10,264)	344,565
6	Account 501 - Fuel	-	20,591	-	-	20,591	-	-	20,591
7	Account 518 - Nuclear Fuel	-	7,060	-	-	7,060	-	-	7,060
8	Account 547 - Other Fuel	-	46,964	-	-	46,964	-	-	46,964
9	Account 555 - Purchased Power	-	23,255	-	-	23,255	-	-	23,255
10	Account 557 - Deferred Fuel	-	-	-	-	-	-	-	-
11	Payroll expense	-	30,829	-	-	30,829	-	-	30,829
12	Benefits and pension expense	-	8,191	-	-	8,191	-	-	8,191
13	OPEB expense	-	(1,721)	-	-	(1,721)	-	-	(1,721)
14	Uncollectibles expense	(1) 17/	1,111	1	0 17/	1,111	-	(33)	1,111
15	Stores expense	-	9,243	-	-	9,243	-	-	9,243
16	Accrued vacation expense	-	81	-	-	81	-	-	81
17	Worker's compensation expense	-	73	-	-	73	-	-	73
18	Prepaid insurance amortization exp.	-	412	-	-	412	-	-	412
19	Director's deferred compensation exp.	-	-	-	-	-	-	-	-
20	Miscellaneous prepaid expense	-	603	-	-	603	-	-	603
21	Other O&M expense	(1) 18/	38,225	-	0 18/	38,225	-	(14)	38,225
22	Total O&M expenses	(2)	184,337	1	0	184,337	-	(47)	184,337
23	Depreciation and amortization exp.	-	57,275	-	-	57,275	-	-	57,275
24	Net current income taxes	(27) 19/	(1,190)	(7)	0 19/	(1,190)	-	(2,540)	(1,190)
25	Deferred state and federal income taxes	-	13,594	-	-	13,594	-	-	13,594
26	Deferred LTC	-	(74)	-	-	(74)	-	-	(74)
27	Total income taxes	(27)	12,330	(7)	0	12,330	-	(2,540)	12,330
28	North Carolina franchise tax	-	488	-	-	488	-	-	488
29	Property tax expense	-	10,558	-	-	10,558	-	-	10,558
30	West Virginia S&D tax expense	-	1,045	-	-	1,045	-	-	1,045
31	Payroll taxes	-	2,128	-	-	2,128	-	-	2,128
32	Other taxes	-	102	-	-	102	-	-	102
33	Total taxes other than income	-	14,319	-	-	14,319	-	-	14,319
34	Gain / loss on disposition of property	-	225	-	-	225	-	-	225
35	Total electric operating expenses	(29)	268,485	(9)	0	268,485	-	(2,587)	268,485
36	Charitable contributions	-	-	-	-	-	-	-	-
37	Interest on customer deposits	-	72	-	-	72	-	-	72
38	Interest on tax deficiencies	-	78	-	-	78	-	-	78
39	Other expenses / (income)	-	148	-	-	148	-	-	148
40	Interest expense	(304) 19/	25,093	78	1 20/	25,094	22/	(303)	25,094
41	Income available for common equity	(79) 19/	50,837	18/	1 20/	50,838	23/	(7,372)	50,838
42	Net operating income for return	(303)	75,932	78	2	75,932	-	(7,675)	75,932
43	Total requirement	(\$412)	\$344,563	\$70	\$2	\$344,565	\$0	(\$10,262)	\$344,565
44	Cumulative change in working capital			(\$1,728)			(\$1,728)		(\$1,728)
45	Rate base under present rates			1,131,458			1,131,458		1,131,458
46	Rate base after rate increase			\$1,129,730			\$1,129,730		\$1,129,730
47	Overall rate of return (L42 / L46)			6.72%			6.72%		6.72%
48	Target rate of return			6.72% 19/			6.72% 19/		6.72%

14/ (Line 6 divided by (1 minus 0.0031995191152212)) minus Line 5.

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

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

17/ Line 40, Column (e) times 50.000% times 4.442%.

18/ Line 40, Column (e) times 50.000% times 9.000%.

19/ Column (f) divided by 365 days times Column (b).

20/ Column (j) minus Column (g).

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

22/ Line 40, Column (h) times 50.000% times 4.442%.

23/ Line 40, Column (h) times 50.000% times 9.000%.

24/ Column (j) divided by 365 days times Column (b).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF OTHER ADDITIONS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-2

Line No.	Item	NC Retail Adjusted Per Company ^{1/}	Public Staff Adjustments ^{2/}	NC Retail Adjusted Per Public Staff ^{3/}
		(a)	(b)	(c)
1	1132030 - SAP A/R EE Purchase Program	\$0	\$0	\$0
2	1134010 - Joint Owner Receivable	-	-	-
3	1137050 - Account Receivable - ARM-Public	-	-	-
4	1137055 - Accounts Receivable - Other	-	-	-
5	1191210 - Prepaid Insurance - Executive Protection	-	-	-
6	1191220 - Prepaid Insurance - Excess Liability	-	-	-
7	1191240 - Prepaid Insurance - Nuclear Property	-	-	-
8	1191250 - Prepaid Insurance - NEIL	-	-	-
9	1191260 - Prepaid Insurance - General Property	-	-	-
10	1191270 - Prepaid Insurance - Executive Life	-	-	-
11	1191290 - Prepaid Insurance - Workers Comp.	-	-	-
12	1191310 - Prepaid Auto Licenses	-	-	-
13	1191330 - Prepaid Fees & Assessments	-	-	-
14	1191900 - Prepaid - Miscellaneous	-	-	-
15	1199010 - Temporary Facilities	-	-	-
16	1220910 - Other Non-Current Receivables	-	-	-
17	1242020 - Unamort. Loss on Reacquired Debt - Mtg Bnd	-	-	-
18	1242022 - Reg Asset - Unamort. Loss - Reacquired Debt	-	-	-
19	1242030 - Unamort. Loss on Reacquired Debt - Poll Cntrl	-	-	-
20	1242045 - Unamort. Loss on Reacquired Debt - Write Off	-	-	-
21	1242062 - Reg Asset - NRC Requirements - North Anna	-	-	-
22	1242063 - Reg Asset - NRC Requirements - Surry	-	-	-
23	1250010 - Preliminary Survey and Investigations	-	-	-
24	1251010 - Other Work in Progress	-	-	-
25	1251020 - Other Work in Progress - Direct Post	-	-	-
26	1292860 - Misc. Prepayments - Non Current	-	-	-
27	2220120 - Reg Liab - Deferred Gain on Reacquired Debt	-	-	-
28	1242060 - Reg Asset - Unrecov. Design Basis Costs - NA	-	-	-
29	1242061 - Reg Asset - Unrecov. Design Basis Costs - Surry	-	-	-
30	1242070 - Reg Asset - Unrecov. Tech. Spec. Update	-	-	-
31	1242205 & 1171205 - Reg Asset - NUG Buyout Costs	-	-	-
32	1242265 & 1171265 - Reg Asset - Bear Garden Sub 479	-	-	-
33	1242270 - Reg Asset - Emission Allowances - Non Current	-	-	-
34	1171270 - Reg Asset - Emission Allowances - Current	-	-	-
35	1171245 - Reg Asset - Nuclear Outage Deferral	-	-	-
36	Reg Asset - Chesapeake Closure Costs	-	-	-
37	1171280&1242280&1242285 Reg Asset - CCR Rule Expenditu	-	(14,607)	(14,607)
38	Reg Asset - Warren County Deferral	-	-	-
39	Reg Asset - Brunswick County Deferral	-	-	-
40	1171255 & 1242255 Reg Asset - North Branch Net Proceeds	-	-	-
41	Rounding	37,149	-	37,149
42	Total Other Additions	<u>\$37,149</u>	<u>(\$14,607)</u>	<u>\$22,542</u>

1/ Based on review of Company Item 10 workpapers.

2/ Based on adjustments recommended by Public Staff.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF OTHER DEDUCTIONS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 2-3

Line No.	Item	NC Retail Adjusted Per Company 1/ (a)	Public Staff Adjustments 2/ (b)	NC Retail Adjusted Per Public Staff 3/ (c)
1	2171138 - Reg. Liab. - Other - NCUC Order (DOE Settlement)	\$0	\$0	\$0
2	2141100 - Accrued Vacation	-	-	-
3	2190010 - Capital Lease Obligation - Current	-	-	-
4	2290010 - Capital Lease Obligation - Noncurrent	-	-	-
5	2191000 - Appropriated Funds - Customer Accounts	-	-	-
6	2191800 - Centralized Appropriations	-	-	-
7	2192030 - Supplemental Pensions - Current	-	-	-
8	2192060 - Reserve for IBNR/FBNP Hospitalization	-	-	-
9	2192070 - Reserve for IBNR/FBNP Dental/Vision	-	-	-
10	2299025 - Accum. Provisions for Injuries and Damages	-	-	-
11	2141400 - Accr. Severance Pay	-	-	-
12	2199040 - Customer Advances for Construction	-	-	-
13	1292840 - FAS 112 - Deferred Post Employment Benefit	-	-	-
14	1292870 - ME Pension Asset / Oblig. - FAS 158 - Non Current	-	-	-
15	1291810 - Non Current Asset - Worker's Compensation	-	-	-
16	2291010 - Non Current Liability - Workers Compensation	-	-	-
17	2291030 - Non Current Liability - Long Term Disability	-	-	-
18	2291510 - OPEB ME 158 Benefit Obligation - Non Cur.	-	-	-
19	2291050 - Non Current Liability - Supplemental Post Empl	-	-	-
20	2291080 - Deferred Compensation - Executives	-	-	-
21	2299910 - Other Non Current Liabilities	-	-	-
22	6199010 - Other Income CIAC Tax Recovery	-	-	-
23	Company adjustment to eliminate nuclear outage deferral balance	(26,130)	-	(26,130)
24	Total Other Deductions	<u>(\$26,130)</u>	<u>\$0</u>	<u>(\$26,130)</u>

1/ Based on review of Company Item 10 workpapers.

2/ Based on adjustments recommended by Public Staff.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
NET OPERATING INCOME FOR RETURN
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3

Line No.	Item	Under Present Rates			After Public Staff Recommended Increase	
		NC Retail Adjusted Per Company ^{1/}	Public Staff Adjustments ^{2/}	After Public Staff Adjustments ^{3/}	Rate Increase	After Rate Increase ^{10/}
		(a)	(b)	(c)	(d)	(e)
1	Electric operating revenues:					
2	Base non-fuel rate revenues	\$256,741	\$0	\$256,741	(\$8,079) ^{4/}	\$248,662
3	Base fuel revenues	91,845	-	91,845	(2,155) ^{5/}	89,690
4	Late payment fees	1,187	-	1,187	(33) ^{6/}	1,154
5	Other revenues	5,057	-	5,057	- ^{7/}	5,057
6	Electric operating revenues (Sum of L2 thru L5)	<u>354,830</u>	<u>-</u>	<u>354,830</u>	<u>(\$10,267)</u>	<u>344,563</u>
7	Electric operating expenses:					
8	Operations and maintenance:					
9	Fuel clause expenses	91,725	(2,153)	89,572	-	89,572
10	Other operations and maintenance expenses	100,674	(5,863)	94,811	(47) ^{8/}	94,764
11	Depreciation and amortization	64,586	(7,312)	57,274	-	57,274
12	Gain / loss on disposition of property	225	-	225	-	225
13	Taxes other than income taxes	14,319	-	14,319	-	14,319
14	Income taxes	11,397	3,542	14,939	(2,609) ^{9/}	12,330
15	Total electric operating expenses (Sum of L8 thru L14)	<u>282,926</u>	<u>(11,787)</u>	<u>271,139</u>	<u>(2,656)</u>	<u>268,483</u>
16	Net operating income before adjustments (L6 - L15)	71,904	11,787	83,691	(7,611)	76,080
17	Interest on customer deposits	(72)	-	(72)	-	(72)
18	Interest on tax deficiencies	(76)	-	(76)	-	(76)
19	Net operating income for return (Sum of L16 thru L18)	<u>\$71,756</u>	<u>\$11,787</u>	<u>\$83,543</u>	<u>(\$7,611)</u>	<u>\$75,932</u>

1/ Company Supplemental Exhibit PMM-1, Page 1, Column 5, unless footnoted otherwise.

2/ Johnson Exhibit 1, Schedule 3-1, Column (u).

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

4/ Johnson Exhibit 1, Schedule 5, Line 7 minus other revenues on Line 5 minus late payment fees on Line 4.

5/ Johnson Exhibit 1, Schedule 5, Line 6.

6/ ((Line 6 minus Line 5) divided by (1 minus late payment fee rate of 0.320%)) minus (Line 6 minus Line 5).

7/ Based on testimony of Company witness Paul Haynes.

8/ Line 6 times (1 minus retention factor after uncollectibles and regulatory fee from Johnson Exhibit 1, Schedule 1-2, Line 10).

9/ Line 6 minus sum of Lines 8 thru 13 minus Johnson Exhibit 1, Schedule 5, Line 3, Column (a), times composite income tax rate of 25.6228%.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1
Page 1 of 3

Line No.	Item	Adjust Lobbying Expense (a)	Adjust Uncollectibles (b)	Adjust Storm Costs (c)	Remove Executive Compensation Costs (d)	Remove Employee Severance Costs (e)	Adjust Incentive Plan Costs (f)	Adjust O&M VRP Costs (g)	Remove Advertising Expense (h)
1	Electric operating revenues:								
2	Base non-fuel rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Base fuel revenues	-	-	-	-	-	-	-	-
4	Late payment fees	-	-	-	-	-	-	-	-
5	Other revenues	-	-	-	-	-	-	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-	-	-	-	-	-
7	Electric operating expenses:								
8	Operations and maintenance:								
9	Fuel clause expenses	-	-	-	-	-	-	-	-
10	Other operations and maintenance expenses	(51) 1/	(235) 2/	(506) 4/	(\$91) 6/	(\$1,128) 6/	(712) 7/	(\$1,052) 8/	(\$34) 10/
11	Depreciation and amortization	-	-	-	-	-	-	-	-
12	Gain / loss on disposition of property	-	-	-	-	-	-	-	-
13	Taxes other than income taxes	-	-	-	-	-	-	-	-
14	Income taxes	13 3/	60 3/	130 3/	23 3/	289 3/	182 3/	426 3/	0 3/
15	Total electric operating expenses (Sum of L8 thru L14)	(38)	(176)	(376)	(68)	(839)	(530)	(1,236)	(25)
16	Net operating income before adjustments (L6 - L15)	38	176	376	68	839	530	1,236	25
17	Interest on customer deposits	-	-	-	-	-	-	-	-
18	Interest on tax deficiencies	-	-	-	-	-	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$38	\$176	\$376	\$68	\$839	\$530	\$1,236	\$25
20	Calculated revenue requirement impact 8/	(\$52)	(\$238)	(\$512)	(\$92)	(\$1,133)	(\$716)	(\$1,059)	(\$34)

1/ Johnson Exhibit 1, Schedule 3-1(a), Line 5.

2/ Johnson Exhibit 1, Schedule 3-1(b), Line 9.

3/ Line 6 minus Sum of Lines 9 through 13 times composite income tax rate of 25.0228%.

4/ Johnson Exhibit 1, Schedule 3-1(c), Line 10.

5/ Johnson Exhibit 1, Schedule 3-1(d), Line 7.

6/ Johnson Exhibit 1, Schedule 3-1(e), Line 9.

7/ Johnson Exhibit 1, Schedule 3-1(f), Line 10.

8/ Negative of Line 19 divided by net income retention factor from Johnson Exhibit 1, Schedule 1-2, Line 14.

9/ Johnson Exhibit 1, Schedule 3-1(g), Line 7.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2016
(In Thousands)

Johnson Exhibit 1
Schedule 3-1
Page 2 of 3

Line No.	Item	Customer Growth, Usage and Weather Normalization (i)	Non-Fuel Variable O&M Expense Displacement Adjustment (j)	Adjust Outside Service (k)	Remove Skiffes Creek Mitigation Costs (l)	Remove Chesterfield Units 3 & 4 Conversion Costs (m)	Remove Mt Storm Impairment Costs (n)	Inflation Adjustment (o)	Adjust CCR Costs (p)
1	Electric operating revenues:								
2	Base non-fuel rate revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Base fuel revenues	-	-	-	-	-	-	-	-
4	Late payment fees	-	-	-	-	-	-	-	-
5	Other revenues	-	-	-	-	-	-	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-	-	-	-	-	-
7	Electric operating expenses:								
8	Operations and maintenance:								
9	Fuel clause expenses	-	-	-	-	-	-	-	-
10	Other operations and maintenance expenses	(231) 11/	(602) 12/	(243) 13/	(116) 14/	(46) 15/	(663) 16/	(43) 17/	(3,153) 18/
11	Depreciation and amortization	-	-	-	-	-	-	-	-
12	Gain / loss on disposition of property	-	-	-	-	-	-	-	-
13	Taxes other than income taxes	-	-	-	-	-	-	-	-
14	Income taxes	64 3/	231 3/	82 3/	30 3/	12 3/	254 3/	11 3/	1,877 3/
15	Total electric operating expenses (Sum of L8 thru L14)	(167)	(671)	(161)	(86)	(30)	(739)	(32)	(4,976)
16	Net operating income before adjustments (L6 - L15)	187	671	161	86	30	739	32	4,976
17	Interest on customer deposits	-	-	-	-	-	-	-	-
18	Interest on tax deficiencies	-	-	-	-	-	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$187	\$671	\$161	\$86	\$30	\$739	\$32	\$4,976
20	Calculated revenue requirement impact 3/	(\$252)	(\$206)	(\$245)	(\$119)	(\$49)	(\$268)	(\$43)	(\$5,181)

10/ Johnson Exhibit 1, Schedule 3-1(h), Line 5.
11/ Johnson Exhibit 1, Schedule 3-1(i), Line 11.
12/ Johnson Exhibit 1, Schedule 3-1(j), Line 10.
13/ Johnson Exhibit 1, Schedule 3-1(m), Line 8.
14/ Johnson Exhibit 1, Schedule 2-1(b), Line 8.
15/ Johnson Exhibit 1, Schedule 2-1(e), Line 8.
16/ Johnson Exhibit 1, Schedule 2-1(c), Line 9.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
SUMMARY OF PUBLIC STAFF NET OPERATING
INCOME ADJUSTMENTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1
Page 3 of 3

Line No.	Item	Set Expense to Reflect Recommended Base Fuel Factor (i)	Interest Synchronization Adjustment (j)	Total NOI Adjustments 21/ (k)
1	Electric operating revenues:			
2	Base non-fuel rate revenues	\$0	\$0	\$0
3	Base fuel revenues	-	-	-
4	Late payment fees	-	-	-
5	Other revenues	-	-	-
6	Electric operating revenues (Sum of L2 thru L5)	-	-	-
7	Electric operating expenses:			
8	Operations and maintenance:			
9	Fuel clause expenses	(2,153) 19/	-	(2,153)
10	Other operations and maintenance expenses	-	-	(5,603)
11	Depreciation and amortization	-	-	(7,512)
12	Gain / loss on disposition of property	-	-	-
13	Taxes other than income taxes	-	-	-
14	Income taxes	\$52 3/	(383) 20/	3,542
15	Total electric operating expenses (Sum of L8 thru L14)	(1,601)	(383)	(11,787)
16	Net operating income before adjustments (L6 - L15)	1,601	383	11,787
17	Interest on customer deposits	-	-	-
18	Interest on tax deficiencies	-	-	-
19	Net operating income for return (Sum of L16 thru L18)	\$1,601	\$383	\$11,787
20	Calculated revenue requirement impact	0/ (\$2,162)	(\$517)	(\$15,620)

17/ Johnson Exhibit 1, Schedule 3-1(i), Line 12.

18/ Per Public Staff witness Maness.

19/ Johnson Exhibit 1, Schedule 3-1(i), Line 5.

20/ Johnson Exhibit 1, Schedule 3-1(n), Line 8.

21/ Sum of Column (k) through Column (i).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO LOBBYING EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(a)

Line No.	Item	Amount
1	Internal Lobbying Costs to be removed per Public Staff	\$844 1/
2	External Lobbying Costs to be removed per Public Staff	<u>196 1/</u>
3	Total Lobbying Costs to be Excluded (L1 + L2)	1,040
4	NC Retail Allocation Factor	<u>4.9507% 2/</u>
5	NC Retail Lobbying Costs to be Excluded per Public Staff (-L3 x L4)	<u><u>(\$51)</u></u>

1/ E-1, Item 18(a) & Company responses to DR49 and DR119.

2/ NC Jurisdictional Factor 1.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Exhibit 1
Schedule 3-1(b)

ADJUSTMENT TO UNCOLLECTIBLES EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Line No.	Item	Amount
1	Average bad debt expense attributed to retail customers	\$24,084 ^{1/}
2	Percentage to North Carolina retail	4.8779% ^{2/}
3	Average bad debt expense for North Carolina retail (L1 x L2)	1,175
4	Average North Carolina retail revenues	357,717 ^{3/}
5	Uncollectibles percentage per Public Staff (L3 / L4)	0.3285%
6	North Carolina retail revenues (including fuel) adjusted for weather and customer growth per Company	348,586 ^{4/}
7	Uncollectibles expense per Public Staff (L5 x L6)	1,145
8	Amount per Company	1,381 ^{5/}
9	Adjustment to uncollectibles expense (L7 - L8)	(<u>\$236</u>)

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 151, Line 3 thru Line 6, divided by 4.

2/ NCUC Form E-1, Item No. 45a, Schedule 15, Line 399.

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 155. The average for the last 4 years; not 5.

4/ Company Exhibit PMM-1, Schedule 1, Col. 5, Line 2 + Line 3.

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 150, Line 3.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZED LEVEL OF
STORM O&M EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(c)

Line No.	Item	Amount
	<u>Overtime hours</u>	
1	2009	105,084 ^{1/}
2	2010	128,942 ^{2/}
3	2011	263,752 ^{2/}
4	2012	190,679 ^{2/}
5	2013	85,741 ^{2/}
6	2014	13,865 ^{2/}
7	2015	30,692 ^{2/}
8	2016	134,616 ^{2/}
9	2017	35,720 ^{2/}
10	2018	184,801 ^{2/}
11	Ten year average overtime wages ((Sum of L1 thru L10) / 10)	117,389
12	Hourly rate (in thousands)	0.0066 ^{3/}
13	Average overtime wages per Public Staff (L11 x L12)	775
14	Average overtime wages per Company	7,828 ^{4/}
15	Adjustment to overtime wages (L13 - L14)	(7,053)
16	NC retail percentage	4.9841% ^{5/}
17	Adjustment to overtime wages - NC retail (L15 x L16)	(352)
18	Adjustment to other storm expenses - NC retail	(157) ^{6/}
19	Public Staff adjustment - NC retail (L17 + L18)	(\$509)

1/ DNCP Sub 532 Fernald Exhibit 1, Schedule 3-1 Storm Adj, Line 4.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 128, Lines 10 thru 18.

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 128, Line 18, Column (3) divided by Line 18, Column (2), times (1 plus Line 4).

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 128, Line 5.

5/ Salaries and wages factor from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 73.

6/ Johnson Exhibit 1, Schedule 3-1(c)(1), Line 17, Column (e).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO NORMALIZED LEVEL OF
STORM O&M EXPENSE EXCLUDING LABOR
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1(c)(1)

Line No.	Item	Normalized Amount per Public Staff (a)	Normalized Amount per Company (b)	Public Staff Adjustment (c)	NC Retail Allocation Factor (d)	Public Staff Adjustment - NC Retail (e)
1	Acct 562 - Trans Op - Station Exp	\$0	\$0	\$0	4.2841%	\$0
2	Acct 563 - Trans Op - Ovrhd Lines	0	-	-	4.2071%	-
3	Acct 566 - Trans Op - Misc Exp	87	96	(9)	4.4492%	-
4	Acct 582 - Dist Op - Station Exp	7	8	(1)	5.7804%	-
5	Acct 583 - Dist Op - Ovhd Lines	2,332	2,354	(22)	7.5771%	(2)
6	Acct 584 - Dist Op - Ungrd Lines	272	297	(25)	3.7154%	(1)
7	Acct 585 - Dist Op - St Lt/Sig Lines	0	-	-	5.4307%	-
8	Acct 586 - Dist Op - Meters	24	25	(1)	2.5127%	-
9	Acct 587 - Dist Op - Cust Install	130	137	(7)	5.4413%	-
10	Acct 588 - Dist Op - Misc Exp	4,832	5,253	(421)	6.1822%	(26)
11	Acct 593 - Dist Maint - Ovrhd Ln	25,738	27,355	(1,617)	7.5771%	(123)
12	Acct 594 - Dist Maint - Ungrd Ln	1,081	1,139	(78)	3.7154%	(3)
13	Acct 595 - Dist Maint - Ln Trnsfm	727	783	(56)	4.4475%	(2)
14	Acct 596 - Dist Maint - St Lt/Sig	17	19	(2)	5.4307%	-
15	Acct 597 - Dist Maint - Meters	54	55	(1)	2.5127%	-
16	Acct 935 - Admin & Gen - Electric	15	17	(2)	6.1618%	-
17	Total	<u>\$35,296</u>	<u>\$37,538</u>	<u>(\$2,242)</u>		<u>(\$157)</u>

1/ Johnson Exhibit 1, Schedule 3-1(c)(2), Line 20, Column (k) divided by ten times distribution percentage for account from Johnson Exhibit 1, Schedule 3-1(c)(2), Column (l).

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 129, Column (4).

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

4/ NCUC Form E-1, Item No. 45a - Supplemental Filing, Schedule 3.

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

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 582
North Carolina Retail Operations
STORM O&M EXPENSES
EXCLUDING LABOR ADJUSTED
FOR INFLATION
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(c)(2)

Line No.	Item	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total for Ten Years	Distribution Percent
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	Acct 184 - Clearing Accounts	\$0	\$0	\$84	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4	
2	Acct 562 - Trans Op - Station Exp	-	-	1	-	-	-	-	-	-	-	1	0.000%
3	Acct 563 - Trans Op - Ovhd Lines	-	-	-	-	-	-	-	-	-	-	-	0.000%
4	Acct 565 - Trans Op - Misc Exp	-	-	808	-	-	-	-	-	-	-	808	0.248%
5	Acct 582 - Dist Op - Station Exp	-	7	25	15	5	1	1	6	1	5	66	0.020%
6	Acct 583 - Dist Op - Ovhd Lines	1,911	2,190	7,603	2,094	600	173	220	2,117	570	4,025	21,727	0.007%
7	Acct 584 - Dist Op - Ungrd Lines	35	205	769	376	110	23	30	302	82	578	2,540	0.772%
8	Acct 585 - Dist Op - St LV/Sig Lines	-	-	-	-	-	-	-	-	-	-	-	0.000%
9	Acct 586 - Dist Op - Meters	11	10	40	88	15	3	4	21	3	25	220	0.067%
10	Acct 587 - Dist Op - Cust Install	55	86	209	93	23	5	6	183	59	420	1,200	0.368%
11	Acct 588 - Dist Op - Misc Exp	804	2,752	13,197	18,180	2,789	528	894	3,162	352	2,560	45,018	13.690%
12	Acct 593 - Dist Maint - Ovhd Ln	9,548	14,136	49,717	41,772	17,348	4,113	5,987	34,872	9,547	62,776	236,708	72.922%
13	Acct 594 - Dist Maint - Ungrd Ln	303	618	2,221	1,949	424	89	116	1,364	418	2,953	6,895	3.006%
14	Acct 595 - Dist Maint - Ln Trnsfr	160	545	1,885	1,545	212	42	58	670	203	1,432	6,770	2.056%
15	Acct 596 - Dist Maint - St LV/Sig	-	-	11	98	20	4	5	19	1	6	181	0.045%
16	Acct 597 - Dist Maint - Meters	38	28	98	1	20	4	6	84	27	193	499	0.152%
17	Acct 935 - Admin & Gen - Electric	-	10	29	60	1	-	-	5	-	35	140	0.043%
18	Total historical cost	12,865	20,593	76,817	65,659	21,776	4,985	7,115	42,815	11,263	65,007	328,928	100.001%
19	Inflation factor for year	1.1725	1.1473	1.1050	1.0870	1.0736	1.0580	1.0503	1.0531	1.0288	1.0000		
20	Total adjusted for inflation (L18 x L19)	\$15,108	\$23,626	\$84,952	\$71,382	\$23,379	\$5,274	\$7,545	\$45,088	\$11,585	\$65,007	\$352,647	

1/ Based on Company response to Public Staff Data Request No. 54, Item 4.

2/ Amounts from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 139 adjusted to remove labor component of service company charges based on Public Staff Data Request No. 113, Item 1.

3/ Amounts from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 138 adjusted to remove labor component of service company charges based on Public Staff Data Request No. 113, Item 1.

4/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 137.

5/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 136.

6/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 135.

7/ Sum of Columns (a) thru (j).

8/ Amount for account in Column (k) divided by total excluding clearing account from Column (k).

9/ One plus amount for year from Johnson Exhibit 1, Schedule 3-1(c)(9) Column (g).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Exhibit 1
Schedule 3-1(c)(3)

CALCULATION OF INFLATION
FACTORS TO BE APPLIED TO
HISTORICAL STORM COSTS
For the Test Year Ended December 31, 2018
(In Thousands)

Line No.	Year	Consumer Price Index (CPI)		Finished Goods less Food & Energy		Intermediate Materials less Food & Energy		Producer Price Index (PPI)		Average CPI / PPI % ^{5/}
		CPI	CPI % ^{2/}					Average PPI	Average PPI % ^{4/}	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	
1	2009	214.56	17.03%	171.48	173.38	172.43	17.47%	17.25%		
2	2010	218.08	15.14%	173.58	180.80	177.19	14.31%	14.73%		
3	2011	224.93	11.63%	177.79	191.99	184.89	9.55%	10.59%		
4	2012	229.60	9.36%	182.38	192.61	187.50	8.03%	8.70%		
5	2013	232.96	7.79%	185.10	193.78	189.44	6.92%	7.36%		
6	2014	236.71	6.08%	188.64	195.25	191.95	5.52%	5.80%		
7	2015	237.00	5.95%	192.36	189.46	190.91	6.10%	6.03%		
8	2016	240.01	4.62%	195.28	186.89	191.09	6.00%	5.31%		
9	2017	245.13	2.44%	198.88	193.34	196.11	3.28%	2.86%		
10	2018	251.10		203.33	201.77	202.55				

1/ Based on Company response to Public Staff Data Request No. 54, Item 10.

2/ Percentage of increase / (decrease) in average index in Column (a) from base year through test year.

3/ Average of index amounts in Columns (c) and (d).

4/ Percentage of increase / (decrease) in average index in Column (e) from base year through test year.

5/ Average of percentages in Columns (b) and (f).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE EXECUTIVE COMPENSATION AND
BENEFITS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(d)

Line No.	Item	Amount
1	System Amount of Total Compensation of Top 4 Executive Positions Per Public Staff	\$ 9,168 ^{1/}
2	Eliminate 50%	<u>(4,584)</u>
3	Amount of Executive Compensation to be Allocated to DENC	\$ 4,584
4	NC Retail Allocation Factor	<u>4.9841%</u>
5	NC Retail Amount of Executive Compensation to be Eliminated per Public Staff	(228)
6	NC retail amount of Executive Compensation to be Eliminated per Company	<u>(137)</u>
7	Public Staff Adjustment to Executive Compensation	<u>\$ (91)</u>

1/ Based on Company response to Public Staff Data Request No. 23.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE EMPLOYEE SEVERANCE PROGRAM
COSTS
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1(e)

Line No.	Item	Amount
1	Average Major Corporate-Wide Employee Severance Program Costs	\$ 120,376 ^{1/}
2	Normalization Period	<u>4.17</u> ^{2/}
3	Normalized Severance Expense - System (Line 1/Line 2)	\$28,890
4	Test Year Major Corporate-Wide Severance Program Costs	<u>(1,078)</u> ^{3/}
5	System Adjustment (Line 3 - Line 4)	\$29,968
6	North Carolina Jurisdictional Allocation Factor	<u>4.9841%</u> ^{4/}
7	North Carolina Jurisdictional Adjustment Per Company (Line 3 x Line 6)	1,440
8	Normalized level per Public Staff from 2016 rate case	<u>\$312</u> ^{5/}
9	Public Staff Adjustment to Employee Severance Program Costs	<u>\$ (1,128)</u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 107, Line 7.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 107, Line 11.

3/ Based on response to Public Staff Data Request No. 51, Item 3.

4/ Salaries and wages factor from NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 73.

5/ Based on Docket No. E-22, Sub 532 rate case.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO ANNUAL INCENTIVE PLAN
EXPENSE
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(f)

Line No.	Item	Amount
	Annual Incentive Plan (AIP)	
1	VA Power Executive AIP expense associated with earnings	\$ 4,281 ^{1/}
2	NC jurisdictional allocation	4.9841% ^{2/}
3	Adjustment to remove AIP related to EPS outcomes - NC (-L1 x L2)	(213)
4	Executive AIP already removed in executive compensation adjustment	83 ^{3/}
5	Adjustment to AIP (L3 + L4)	<u>\$ (130)</u>
	Long Term Incentive Plan (LTI)	
6	LTI associated with ROIC and TSR at target	\$ 671 ^{4/}
7	Adjustment to remove LTI associated with ROIC and TSR - NC jurisdictional (-L6)	(671)
8	Executive LTI already removed in executive compensation adjustment	90 ^{3/}
9	Adjustment to LTI (L7 + L8)	<u>\$ (581)</u>
10	Adjustment to incentive plan expense (L5 + L9)	<u>\$ (712)</u>

1/ From Company Response to Public Staff Data Request No. 163, Item 4.

2/ NC S&W Allocation factor.

3/ Based on executive compensation adjustment.

4/ From Company Response to Public Staff Data Request No. 163, Item 5.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO O&M VOLUNTARY
RETIREMENT PLAN (VRP) BACKFILL
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(g)

Line No.	Item	Amount
1	DENC Backfill Labor Costs (Non Union)	\$ 28,179 ^{1/}
2	DENC Backfill Labor Costs (Union)	9,718 ^{1/}
3	DES Backfill Labor Costs	11,207 ^{1/}
4	Total Backfill Labor Costs (sum of Lines 1 thru 3)	\$ 49,104
5	Expense Factor	67.91% ^{2/}
6	Total Backfill Labor Costs - O&M (Line 4 x Line 5)	33,347
7	North Carolina Jurisdictional Allocation Factor	4.9841% ^{3/}
8	North Carolina Jurisdictional Adjustment Per Company (Line 6 x 7)	\$1,662
9	North Carolina Jurisdictional Adjustment Per Public Staff	\$0 ^{4/}
10	Public Staff Adjustment to O&M VRP Backfill	<u><u>(\$1,662)</u></u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 217.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 226.

3/ NCUC Form E-1, Item No. 45a., Line 255.

4/ Based on Company response to Public Staff Data Request No. 159.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO REMOVE ADVERTISING EXPENSE
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1(h)

Line No.	Item	Amount
1	Advertising Expense included per Company	\$1,293 ^{1/}
2	Less: Advertising related to NC Jurisdiction	<u>(610) ^{2/}</u>
3	Advertising Expense related to VA Jurisdiction to be removed (L1 + L2)	683
4	NC Jurisdictional Allocation Factor	<u>5.0484%</u>
5	Adjustment to Remove Advertising Expense Per Public Staff (L3 x L4)	<u>\$ (34)</u>

1/ NCUC Form E-1 Supplemental Item No. 10, page 149, Line 5.

2/ PS DR21-2(a).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT TO EXPENSES FOR WEATHER
NORMALIZATION, CUSTOMER USAGE, AND
GROWTH IN CUSTOMERS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(i)

Line No.	Item	Amount
1	Total energy-related expenses not adjusted elsewhere for growth	\$9,764 ^{1/}
2	Test year per books MWH sales	4,400,784 ^{2/}
3	Rate per MWH (L1 / L2)	0.002219
4	Change in MWH sales related to normalization, usage and growth	(112,983) ^{3/}
5	Adjustment to energy-related expenses (L3 x L4)	(251)
6	Total customer-related expenses not adjusted elsewhere for growth	1,271 ^{4/}
7	Test year billings, excluding duplicate bills	121,777 ^{5/}
8	Expense per bill (L6 / L7)	0.010437
9	Increase in billings due to customer growth	19 ^{6/}
10	Adjustment to customer related expenses (L8 x L9)	0
11	Total adjustment to O&M expenses (L5 + L10)	(\$251)

1/ Calculated by Public Staff utilizing cost of service study and other data provided by Company.

2/ Based on review of Company workpapers.

3/ Company Supplemental Exhibit PBH-1, Schedule 2, Column (2), Line 54 less test year amount on Line 2.

4/ Calculated by Public Staff utilizing cost of service study and other data provided by Company.

5/ Based on review of Company workpapers.

6/ Company Supplemental Exhibit PBH-1, Schedule 2, Column (1), Line 54 less test year amount on Line 7.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
ADJUSTMENT FOR NON-FUEL VARIABLE O&M EXPENSE
DISPLACEMENT
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson Exhibit 1
Schedule 3-1(j)

Line No.	Item	Amount
1	Greensville County CC commercial MWH generation monthly average	770,900 1/
2	Number of months	12
3	Annualized Greensville County CC generation (L1 x L2)	9,250,802
4	Actual for twelve months ended December 31, 2018	917,306 2/
5	Implicit adjustment to MWH generation	8,333,496
6	NC retail allocation factor	5.0924% 3/
7	Line loss factor	95.8229% 4/
8	Additional MWH generation added (L5 x L6 x L7)	406,648
9	Non-fuel energy-related expense factor used by Public Staff	0.002219 5/
10	NC retail displacement adjustment (L8 x -L9)	(\$902)

Nameplate Rating of Plant x 75% Annual Capacity Factor x 8760 / 12 months.

1/ Based on recommendation of Public Staff Engineer Metz.

2/ Based on information from S&P Global Marketplace and recommendation of Public Staff Engineer Metz

3/ Factor 3 from NCUC Form E-1, Item No. 45a, Schedule 15, Line 95.

4/ Annual MWH sales of 4,377,561 divided by Annual MWH at transmission level of 4,568,385
based on North Carolina jurisdictional amounts on NCUC Form E-1, Item No. 45f, Page 117.

5/ Johnson Exhibit 1, Schedule 3-1(i), Line 3.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Exhibit 1
Schedule 3-1(k)

ADJUSTMENT TO COMPANY'S INFLATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(In Thousands)

Line No.	Item	Amount
1	Remove Chesapeake closure costs from test year O&M expenses	\$0 1/
2	Remove Brunswick CC O&M expenses already at 2018 level	- 2/
3	Remove portion of Company storm adjustment already at 2018 level	(201) 3/
4	Reflect Public Staff adjustment for outside services	(243) 4/
5	Reflect Public Staff adjustment to storm costs	(157) 5/
6	Reflect Public Staff adjustment to remove Mt. Storm costs	(993) 6/
7	Reflect Public Staff adjustment to O&M expenses for changes in customer growth and usage	(251) 7/
8	Reflect Public Staff adjustment for O&M expense displacement	- 8/
9	Reflect Public Staff adjustment to remove Chesterfield Units 3 & 4 costs	(48) 9/
10	Total adjustment to O&M subject to inflation (Sum of L1 thru L9)	(1,893)
11	Inflation percentage	2.264% 10/
12	Public Staff adjustment (L10 x L11)	(\$43)

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 111, Line 12.

2/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 158, Line 18 plus NCUC Form E-1,
Item No. 10 - Supplemental Filing, Page 143, Line 2 times Line 4.

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 127, Line 1.

4/ Johnson Exhibit 1, Schedule 3-1(m), Line 6.

5/ Johnson Exhibit 1, Schedule 3-1(c), Line 18.

6/ Johnson Exhibit 1, Schedule 2-1(c), Line 6.

7/ Johnson Exhibit 1, Schedule 3-1(i), Line 11.

8/ Johnson Exhibit 1, Schedule 3-1(j), Line 10 times Johnson Exhibit 1, Schedule 3-1(i)(1), Line 2
divided by Line 3.

9/ Johnson Exhibit 1, Schedule 2-1(e), Line 6.

10/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 166, Line 17.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations

Johnson Exhibit 1
Schedule 3-1(l)

ADJUSTMENT TO FUEL EXPENSE TO REFLECT
RECOMMENDED JURISDICTIONAL BASE FUEL FACTOR
For the Test Year Ended December 31, 2018
(in Thousands)

<u>Line No.</u>	<u>Item</u>	<u>Amount</u>
1	Annualized and normalized NC retail kWh sales	4,287,801,016 ^{1/}
2	Base fuel rate, excluding regulatory fee	<u>\$0.02089 ^{2/}</u>
3	Adjusted fuel clause expense (L1 x L2 / 1000)	89,572
4	Annualized pro forma fuel expense under present rates, per Company	<u>91,725 ^{3/}</u>
5	Public Staff adjustment to fuel clause expense (L3 - L4)	<u><u>(\$2,153)</u></u>

1/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 15, Line 3.

2/ Haynes Second Supplemental

3/ NCUC Form E-1, Item No. 10 - Supplemental Filing, Page 15.

Dominion Energy North Carolina
Docket No. E-22, Sub 562
ADJUSTMENT TO OUTSIDES SERVICES
For the Test Year Ended December 31, 2018

Johnson Exhibit 1
Schedule 3-1(m)

Line No.	Item	Amount
1	Legal invoices allocated from DES to be excluded	\$ 505 1/
2	Other allocations from DES to DENC to be excluded	758 1/
3	Legal Invoices - Direct DENC	<u>3,619 2/</u>
4	Total Outside Services to be excluded	(4,882)
5	NC Retail Allocation Factor	<u>4.9810%</u>
6	Public Staff Adjustment to Outside Services	<u>\$ (243)</u>

1/ Company response to DR14-2(b).

2/ Company response to DR5,DR73 and information provided by the Company.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
INTEREST SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(n)

Line No.	Item	Amount
1	Public Staff original cost rate base	\$1,131,458 ^{1/}
2	Public Staff long term debt ratio	50.000% ^{2/}
3	Public Staff embedded cost of debt	<u>4.442% ^{3/}</u>
4	Public Staff interest expense income tax deduction (L1 x L2 x L3)	25,132
5	Company interest expense income tax deduction	<u>23,638 ^{4/}</u>
6	Adjustment to interest expense (L4 - L5)	1,494
7	Composite tax rate	<u>25.6228% ^{5/}</u>
8	Adjustment to income taxes (-L6 x L7)	<u><u>(\$383)</u></u>

1/ Johnson Exhibit 1, Schedule 2, Line 10, Column (c).

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

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

4/ Johnson Exhibit 1, Schedule 3-1(n)(1), Line 4.

5/ Johnson Exhibit 1, Schedule 1-3, Line 8.

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
CALCULATION OF COMPANY'S INTEREST
SYNCHRONIZATION ADJUSTMENT
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 3-1(n)(1)

Line No.	Item	Amount
1	NC retail rate base per Company	\$1,147,952 ^{1/}
2	Long term debt ratio per Company	46.351% ^{2/}
3	Long term debt cost rate per Company	<u>4.442% ^{3/}</u>
4	Interest tax deduction per Company (L1 x L2 x L3)	<u><u>\$23,638</u></u>

1/ Johnson Exhibit 1, Schedule 2, Line 10, Column (a).

2/ Company Supplemental Exhibit PMM-2, Page 8, Line 1, Column (1).

3/ Company Supplemental Exhibit PMM-2, Page 8, Line 1, Column (2).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
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
(in Thousands)

Johnson Exhibit 1
Schedule 4

		Before Public Staff Proposed Increase					After Public Staff Proposed Increase				
Line No.	Item	Capitalization Ratio	NC Retail Rate Base	Embedded Cost or Return	Weighted Cost or Return	Net Operating Income	NC Retail Rate Base	Embedded Cost or Return	Weighted Cost or Return	Net Operating Income	
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	
1	Long-term debt	50.000% ^{1/}	\$565,729 ^{2/}	4.442% ^{1/}	2.22% ^{5/}	\$25,132 ^{6/}	\$564,865 ^{8/}	4.442% ^{1/}	2.22% ^{11/}	\$25,094 ^{12/}	
2	Common equity	60.000% ^{1/}	565,729 ^{2/}	10.32% ^{4/}	5.16% ^{5/}	58,411 ^{7/}	564,865 ^{8/}	9.00% ^{1/}	4.50% ^{11/}	50,838 ^{12/}	
3	Total (L1 + L2)	100.000%	\$1,131,458 ^{3/}		7.38%	\$83,543 ^{10/}	\$1,129,730 ^{10/}		6.72%	\$75,932	

- ^{1/} Per Public Staff witness Woolridge.
^{2/} Column (b), Line 3 times Column (a).
^{3/} Johnson Exhibit 1, Schedule 2, Line 10, Column (c).
^{4/} Column (e) divided by Column (b).
^{5/} Column (a) times Column (c).
^{6/} Column (b) times Column (c).
^{7/} Line 3, Column (e) minus Line 1, Column (e).
^{8/} Johnson Exhibit 1, Schedule 3, Line 10, Column (c).
^{9/} Column (f), Line 3 times Column (a).
^{10/} Johnson Exhibit 1, Schedule 2, Line 10, Column (e).
^{11/} Column (a) times Column (g).
^{12/} Column (f) times Column (g).

DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
**CALCULATION OF PUBLIC STAFF'S ADDITIONAL GROSS REVENUE
REQUIREMENT**
For the Test Year Ended December 31, 2018
(In Thousands)

Johnson 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	\$25,094 1/	\$50,838 4/	\$75,932
2	Net operating income before proposed increase	25,132 2/	58,411 5/	83,543
3	Additional net operating income requirement (L1 - L2)	(38)	(7,573)	(7,611)
4	Retention factor	0.9954193 3/	0.7403645 6/	
5	Additional revenue requirement (L3 / L4)	<u>(\$38)</u>	<u>(\$10,229)</u>	<u>(\$10,267)</u>
	<u>Breakdown of additional revenue requirement</u>			
6	Public Staff recommended decrease in base fuel revenue requirement			<u>(\$2,155)</u>
7	Additional gross base non-fuel revenue requirement (L5 - L6)			<u>(\$8,112)</u>

1/ Johnson Exhibit 1, Schedule 4, Line 1, Column (i).

2/ Johnson Exhibit 1, Schedule 4, Line 1, Column (e).

3/ Johnson Exhibit 1, Schedule 1-2, Line 10.

4/ Johnson Exhibit 1, Schedule 4, Line 2, Column (i).

5/ Johnson Exhibit 1, Schedule 4, Line 2, Column (e).

6/ Johnson Exhibit 1, Schedule 1-2, Line 14.

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

EMAIL DISTRIBUTION

COPIES ORDERED BY: Drooz, Edmondson, Fennell, Cummings and Holt, Harrod, Force,
Townsend, Grigg, Kells, and Eason

REPORTED BY: Patricia Elliott

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CONFIDENTIAL

PLACE: Dobbs Building, Raleigh, North Carolina
DATE: Tuesday, September 24, 2019
TIME: 1:30 p.m. - 5:27 p.m.
DOCKET NO: E-22, Sub 562 and E-22, Sub 566
BEFORE: Chair Charlotte A. Mitchell, Presiding
Commissioner ToNola D. Brown-Bland
Commissioner Lyons Gray
Commissioner Daniel G. Clodfelter

IN THE MATTER OF:

Application of Virginia Electric and Power Company,
d/b/a Dominion Energy North Carolina,
for Adjustment of Rates and Charges Applicable to
Electric Service in North Carolina

And

Petition of Virginia Electric and Power Company,
d/b/a Dominion Energy North Carolina,
for an Accounting Order to Defer Certain Capital and
Operating Costs Associated with Greenville County
Combined Cycle Addition

VOLUME 6

1 A P P E A R A N C E S:

2 FOR VIRGINIA ELECTRIC and POWER COMPANY d/b/a

3 DOMINION ENERGY NORTH CAROLINA:

4 Mary Lynne Grigg, Esq.

5 Andrea Kells, Esq.

6 William Dixon Snukals, Esq.

7 McGuireWoods LLP

8 434 Fayetteville Street, Suite 2600

9 Raleigh, North Carolina 27614

10

11 Robert W. Kaylor, Esq.

12 Law Office of Robert W. Kaylor, P.A.

13 353 East Six Forks Road, Suite 260

14 Raleigh, North Carolina 27609

15

16 Horace P. Payne, Jr., Esq.

17 Assistant General Counsel

18 Dominion Energy Services, Inc., Law Department

19 120 Tredegar Street

20 Richmond, Virginia 23219

21

22

23

24

1 A P P E A R A N C E S Cont'd.:

2 FOR CAROLINA INDUSTRIAL GROUP FOR FAIR

3 UTILITY RATES I:

4 Warren K. Hicks, Esq.

5 Bailey & Dixon, LLP

6 Post Office Box 1351

7 Raleigh, North Carolina 27602-1351

8

9 FOR NUCOR STEEL-HERTFORD:

10 Joseph W. Eason, Esq.

11 Nelson, Mullins, Riley & Scarborough, LLP

12 4140 Park Lake Avenue, Suite 200

13 Raleigh, North Carolina 27612

14

15 Damon E. Xenopoulos, Esq.

16 Stone Mattheis Xenopoulos & Brew, PC

17 1025 Thomas Jefferson Street, NW

18 Washington, D.C. 20007-5201

19

20

21

22

23

24

1 A P P E A R A N C E S Cont'd.:

2 FOR THE USING AND CONSUMING PUBLIC, THE STATE

3 AND ITS CITIZENS:

4 Jennifer Harrod, Esq.

5 Margaret A. Force, Esq.

6 Theresa Townsend, Esq.

7 North Carolina Attorney General's Office

8 114 West Edenton Street

9 Raleigh, North Carolina 27614

10

11 FOR THE USING AND CONSUMING PUBLIC:

12 David Drooz, Esq.

13 Dianna Downey, Esq.

14 Lucy Edmondson, Esq.

15 Heather Fennell, Esq.

16 Layla Cummings, Esq.

17 Gina Holt, Esq.

18 Public Staff - North Carolina Utilities Commission

19 4326 Mail Service Center

20 Raleigh, North Carolina 27699-4300

21

22

23

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4	Public Staff Lucas Confidential Exhibit 15..	106/106
5	Maness Exhibit 1.....	205/205
6	Maness Supplemental Exhibit 1.....	243/243
7	DENC Lucas Cross Exhibit 1-2.....	281/281
8	DENC Lucas Cross Exhibit 3.....	295/295
9	Public Staff Lucas Redirect Exhibit 1..	303/303
10	Company Exhibit BEP-1 and Supplemental BEP-1	342/342
11	Company Supplemental Exhibit DRK-1.....	354/354
12	Nucor Ex PJW-1-PJW-3; Nucor Ex JMT-1-JMT-6	374/374
13	Exhibit NP-1.....	409/409
14	Boswell Exhibit 1.....	436/436
15	Public Staff-D Williamson Exhibits 1-5 .	436/436
16	Confidential Public Staff-D Williamson Ex 6	436/436
17	Exhibits RMM-1 through RMM-3.....	436/436
18	Public Staff-Thomas Exhibit 1.....	436/436
19	Exhibits JRW-1 through JRW-10.....	436/436
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DOMINION ENERGY NORTH CAROLINA
Docket No. E-22, Sub 562
North Carolina Retail Operations
REVENUE IMPACT OF PUBLIC STAFF ADJUSTMENTS
For the Test Year Ended December 31, 2018
(in Thousands)

Johnson Exhibit 1
Schedule 1

Line No.	Item	Amount
1	Non-fuel revenue requirement increase per Company application	\$26,958 ^{1/}
2	Revenue impact of Company update	(2,079) ^{2/}
3	Non-fuel revenue requirement increase per Company after updates	24,879
4	Revenue impact of Public Staff adjustments: ^{3/}	
5	Change in equity ratio from 53.65% to 50.00% equity	(4,214)
6	Change in debt cost rate from 4.442% to 4.442%	-
7	Change in return on equity from 10.75% to 9.00%	(13,566)
8	Change in retention factor - uncollectibles and state tax rate change	(17)
9	Adjust uncollectibles	(238)
10	Adjust allocation of state accumulated deferred income taxes	1
11	Remove Mt Storm Impairment costs	(1,081)
12	Adjust NUG Contract Termination Expense - Regulatory Asset	(33)
13	Adjust outside services	(245)
14	Eliminate certain ADIT balances	1
15	Remove Skiffes Creek mitigation costs	(383)
16	Remove executive compensation costs	(92)
17	Remove Chesterfield Units 3 & 4 wet-to-dry conversion costs	(124)
18	Adjust allocation of per books income tax expense	(52)
19	Adjust storm costs	(512)
20	Remove employee severance program costs	(1,133)
21	Remove advertising costs	(34)
22	Adjust annual incentive plan costs	(716)
23	Adjust employee VRP Backfill costs	(1,669)
24	Adjust expenses for customer growth, usage, and weather normalization	(252)
25	Adjust variable non-fuel O&M expenses for displacement	(906)
26	Adjust inflation adjustment	(43)
27	Adjust coal combustion residual (CCR) costs	(7,084)
28	Adjust uncollectibles for decrease in base fuel rate	(7)
29	Adjust cash working capital under present rates	(14)
30	Adjust cash working capital under proposed rates	(574)
31	Rounding	(4)
32	Total revenue impact of Public Staff adjustments	(32,991)
33	Public Staff recommended decrease in non-fuel revenue requirement	(8,112) ^{4/}
34	Public Staff recommended decrease in base fuel revenue requirement	(2,155) ^{5/}
35	Annual EDIT Rider recommended by Public Staff for 5 year period	1,378 ^{6/}
36	Public Staff recommended decrease in revenue requirement	(\$8,889)

1/ Company Exhibit PMM-1, Page 1, Line 6, Column (6).

2/ Company Supplemental Exhibit PMM-1, Page 10.

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

4/ Johnson Exhibit 1, Schedule 5, Line 7.

5/ Johnson Exhibit 1, Schedule 5, Line 6.