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December 20, 2021

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*Application of Virginia Electric and Power Company,  
For revision of rate adjustment clause: Rider S, Virginia City Hybrid Energy Center  
for the Rate Years Commencing April 1, 2022 and April 1, 2023  
Case No. PUR-2021-00114*

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding the **public version** of Virginia Electric and Power Company's Rebuttal Testimony. A confidential version is also being filed under seal under separate cover.

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

Highest regards,

/s/ Timothy D. Patterson

Timothy D. Patterson

Enclosures

cc: The Honorable Michael D. Thomas, Hearing Examiner  
Paul E. Pfeffer, Esq.  
Lisa R. Crabtree, Esq.  
Joseph K. Reid, III, Esq.  
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Service List

COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION

APPLICATION OF )  
 )  
VIRGINIA ELECTRIC AND POWER COMPANY )  
 ) Case No. PUR-2021-00114  
For revision of rate adjustment clause: Rider S, )  
Virginia City Hybrid Energy Center )  
For the Rate Years Commencing April 1, 2022 )  
and April 1, 2023 )

REBUTTAL TESTIMONY  
OF  
VIRGINIA ELECTRIC AND POWER COMPANY

PUBLIC VERSION

December 20, 2021

**Application of Virginia Electric and Power Company  
For revision of rate adjustment clause: Rider S,  
Virginia City Hybrid Energy Center For the Rate Years Commencing  
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WITNESS REBUTTAL TESTIMONY SUMMARY

Witness: Glenn A. Kelly

Title: Director, Integrated Strategic Planning

Summary:

Company Witness Glenn A. Kelly responds to the testimony of the Sierra Club and Commission Staff (“Staff”) regarding their analysis of the economic viability of the Virginia City Hybrid Energy Center (“VCHEC”) and recommendations for the facility moving forward. Mr. Kelly acknowledges that the economics for VCHEC are currently challenged, but states that economic analysis is just one factor impacting the prudence of a power station’s continued operation. Mr. Kelly explains the public policy and reliability factors unique to VCHEC that are critical in determining when the unit is no longer beneficial and should be retired.

VCHEC is a unique resource in the Company’s generation portfolio that provides meaningful environmental benefits for customers, meets certain legislative policy objectives, and improves system reliability. The unit bolsters system diversity and serves as a critical hedge against disruption and volatility that could meaningfully impact rates or availability of service. VCHEC burns a hybrid mix of coal and biomass fuel, making it the cleanest coal-fired plant in the United States. Additionally, VCHEC processes gob coal, a waste product of coal mining that was discarded for decades due to its high rock and dirt content, which made it unsuitable for energy generation. Finally, VCHEC provides considerable economic benefits to southwestern Virginia.

Company Witness Kelly explains the potential negative impacts if the Company retires VCHEC in 2023, including the significant financial burden it would impose on customers. He demonstrates how VCHEC differs in meaningful ways from other coal-burning plants that have been retired. Additionally, he notes that early retirement would cause thermal loading violations on the Company’s transmission system that would need to be resolved. Mr. Kelly also explains that volatility in commodity prices should give the Commission pause before retiring a unit so early in its life, particularly for a generating unit designed to meet a variety of policy objectives.

Finally, Mr. Kelly addresses the specific recommendations made by the Sierra Club and Staff. VCHEC is a unique facility worthy of individualized consideration, and the Company believes Staff’s recommended report offers an opportunity to fully address all factors bearing on VCHEC’s continued operation. Disallowing costs or setting an early retirement date at this stage would be premature and counter-productive.

**REBUTTAL TESTIMONY  
OF  
GLENN A. KELLY  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUR-2021-00114**

1 **Q. Please state your name, business address, and position with Virginia Electric and**  
2 **Power Company (“Dominion Energy Virginia” or the “Company”).**

3 A. My name is Glenn A. Kelly, and I am Director of Integrated Strategic Planning. My  
4 business address is 600 East Canal Street, Richmond, Virginia 23219. A statement of my  
5 background and qualifications is attached as Appendix A.

6 **Q. Please describe your areas of responsibility with the Company.**

7 The Company’s Integrated Strategic Planning department develops and maintains  
8 generation production cost models for use in the Company’s planning efforts, as well as  
9 its regulatory applications and filings. As part of this effort, I am responsible for  
10 developing generation portfolio plans to serve the Company’s long-term customer  
11 capacity, energy and renewable energy certificate (“REC”) needs.

12 **Q. What is the purpose of your rebuttal testimony in this proceeding?**

13 A. My rebuttal testimony responds to the testimony of Sierra Club Witness Rachel Wilson  
14 and Commission Staff (“Staff”) Witness David J. Dalton regarding their analysis of the  
15 economic viability of the Virginia Hybrid Energy Center (“VCHC”) and  
16 recommendations for the facility moving forward. Ms. Wilson, on behalf of the Sierra  
17 Club, argues that continued operation of VCHC is uneconomic and recommends that  
18 the facility be retired and that certain costs be disallowed for recovery in this proceeding.

1 The Company opposes Sierra Club's recommendations. Staff Witness Dalton notes that  
2 continued operation of VCHEC may be uneconomic, but unlike the Sierra Club, Staff  
3 does not recommend any disallowance or retirement at this stage, and instead suggests  
4 that the Commission require the Company to analyze and file a report with the  
5 Commission outlining a possible pathway towards economic viability for VCHEC within  
6 nine months of the final order in this proceeding. The Company does not oppose this  
7 recommendation.

8 **Q. Are you sponsoring any exhibits in this proceeding?**

9 A. Yes. Company Exhibit No. \_\_\_, GAK, consisting of Schedule 1, was prepared under my  
10 direction and supervision and is accurate and complete to the best of my knowledge.  
11 Schedule 1 contains a slide deck compiled by the Company outlining the regional  
12 benefits afforded by VCHEC.

13 **Q. What other Company witnesses are providing rebuttal testimony in this case?**

14 A. Company Witness Jacqueline R. Vitiello will address operational criticisms raised by  
15 Staff and the Sierra Club, specifically regarding the Company's VCHEC dispatch  
16 practices. Company Witness Christopher D. Dibble will respond to questions raised  
17 regarding planned capital expenditures for VCHEC. Finally, Company Witness  
18 Christopher J. Lee will address Staff's revenue requirement analysis.

1 **Q. Both Mr. Dalton and Ms. Wilson state that VCHEC is uneconomic. On page 7 of**  
2 **her testimony, Sierra Club Witness Wilson criticizes the Company for justifying**  
3 **VCHEC's continued operation by reference to factors that go beyond purely**  
4 **economic analysis. Please respond.**

5 A. I agree with Sierra Club Witness Wilson and Staff Witness Dalton that the economics for  
6 VCHEC are currently challenged. However, the economic analysis is just one factor  
7 impacting the prudence of a power station's continued operation. Public policy and  
8 reliability are also critical factors in determining when a unit is no longer beneficial and  
9 should be retired. Mr. Dalton's testimony acknowledges this as well. He states that  
10 "there may be reasons to consider additional factors beyond economic viability before the  
11 Company arrives at any final decision on the appropriate timing of the retirement of the  
12 unit." (Dalton at 10) Such factors include reliability needs, generation diversity,  
13 comparative environmental benefits, local economic impact, and the implications unit  
14 retirement would have on customer bills as well as interdependent utility transmission  
15 infrastructure, among others. VCHEC, as described in my Schedule 1, is a unique  
16 generating facility designed not simply to provide economic electric generation, but to  
17 meet certain legislative policy objectives and improve system reliability. By design,  
18 these objectives should factor into the calculus for VCHEC's continued operation  
19 alongside economic considerations.

20 **Q. What do you mean by reliability needs and generation diversity, and how does**  
21 **VCHEC contribute to these goals?**

22 A. The Company has an ongoing obligation to provide reliable service to customers. The  
23 critical importance of this commitment supersedes the output of a least-cost analysis for



1 any single power station. Economic analysis offers a view of the least expensive way to  
2 provide electricity, but the cheapest means of generation are not always the most reliable.  
3 Viewed at a system level, the Company must ensure that it deploys a mix of generation  
4 resources that ensure reliable service, even if that reliability comes at an incrementally  
5 higher cost.

6 For example, even though VCHEC does not currently run as much as initially expected, it  
7 is available to meet customer needs when gas has delivery or cost issues because it has  
8 fuel on site purchased under long term contracts. VCHEC currently has enough fuel on  
9 site at the facility to run for 70 days if needed, and the potential for an even larger on-site  
10 inventory, which alleviates the Company's reliance on complicated supply chains. The  
11 only other units in the Company's generation fleet that can run longer with current on-site  
12 fuel inventory are the Company's nuclear units. VCHEC is also available when the sun  
13 is not shining, or the wind is not blowing and the Company's solar or wind resources are  
14 idle. In addition, just like any generator, this unit helps to reduce our dependence on  
15 imported power. Aside from the other benefits afforded by VCHEC as discussed below,  
16 it bolsters system diversity and serves as a critical hedge against disruption and volatility  
17 that could meaningfully impact rates or availability of service.

18 **Q. Does VCHEC provide environmental benefits?**

19 **A.** Yes. VCHEC is a unique resource in the Company's generation portfolio that provides  
20 meaningful environmental benefits for customers. VCHEC was designed to burn a  
21 hybrid mix of run-of-mine coal, waste coal, and waste biomass fuel, making it one of the  
22 cleanest coal-fired plants in the United States. Its ability to use waste coal biomass fuel  
23 sets it apart among other similar generation facilities.

1 A significant component of the environmental benefit provided by VCHEC surrounds the  
2 fact that it was constructed to process gob coal, a waste product of coal mining that was  
3 discarded for over a century due to its inability to meet the required fuel specifications at  
4 the time it was mined, which made it unsuitable for use in the intended application,  
5 whether that be home heating, manufacturing, transportation, or electricity production.  
6 As a state-of-the-art facility able to process this waste coal, VCHEC has been a pioneer in  
7 beneficial reclamation and beneficiation for electricity production of this once-useless  
8 byproduct of coal mining. As of July 2021, VCHEC has enabled the completion of ten  
9 waste coal reclamation projects, including the removal of approximately one million tons  
10 of material from Hurricane Creek, of which nearly 500,000 tons was beneficiated for  
11 energy recovery. The waste coal pile at Hurricane Creek had been leaching heavy metals  
12 along with an estimated 100 tons of waste coal per year into the Clinch River for over a  
13 century, making it the single most significant identified threat to water quality in the  
14 region. To date, these projects have reclaimed and beneficiated a total of over 4 million  
15 tons of gob since VCHEC began commercial operation in 2012. Until VCHEC was  
16 constructed, there was no economically feasible solution to remove the gob in that region.  
17 VCHEC's presence has enabled environmental restoration projects that were not possible  
18 before its construction. VCHEC continues to enable reclamation of gob piles and  
19 subsequent eradication of the adverse impacts they have to air and water quality in the  
20 southwestern Virginia region, and that cleanup work is not nearly complete. Over 10  
21 million additional tons of gob have been identified for potential reclamation in Virginia  
22 with many other gob piles not yet registered. If VCHEC is retired, the adverse

1 environmental impact presented by gob coal will remain unaddressed for the foreseeable  
2 future.

3 In addition to its waste biomass and gob processing capabilities, VCHEC employs state-  
4 of-the-art technology to lower emissions and minimize the impact of coal combustion  
5 residuals (“CCRs”). Specifically, it utilizes circulating fluidized bed boilers and an air  
6 quality control system to achieve significantly lower emissions than traditional coal-fired  
7 power plants. It also has a fully-lined captive industrial landfill for CCR storage. All  
8 contact water from the landfill collects in a leachate pond to be processed in an on-site  
9 wastewater treatment facility. VCHEC’s systems meet or exceed current all requirements  
10 for coal combustion byproduct impoundments.

11 **Q. Describe VCHEC’s impact on the local economy.**

12 A. VCHEC is located in the Town of St. Paul, Virginia. The presence of the facility brings  
13 considerable economic benefits to the area by supporting over 500 local jobs in  
14 southwestern Virginia and providing approximately \$8.5 million in annual average tax  
15 revenue to Wise County and the Town of St. Paul. In total, VCHEC provides between  
16 \$25 million and \$100 million annually in regional economic benefits.

17 **Q. Mr. Dalton and Ms. Wilson note that the Company’s PLEXOS model selected**  
18 **VCHEC to retire in 2023 in its Alternative Plan A in the Company’s 2021 Update to**  
19 **its Integrated Resource Plan (“2021 IRP Update”). Notwithstanding that analysis,**  
20 **are there potential negative impacts if the Company retires VCHEC in 2023?**

21 A. Yes. Retiring VCHEC in 2023 would impose a significant financial burden on  
22 customers. As of September 30, 2021, the remaining net book value for VCHEC was

1 \$1.6 billion. If the Company retires VCHEC in 2023, the remaining net book value of  
2 the plant would be recovered from customers. The Commission could determine an  
3 amortization period over which the Company would recover these prudently incurred  
4 costs from customers, but no matter how long the recovery period, the costs will be  
5 significant, as VCHEC has been operating for less than a decade. The Sierra Club argues  
6 for VCHEC's retirement but does not address the significant ratepayer impact of that  
7 proposal.

8 **Q. How does VCHEC compare to other coal-burning power plants that the Company**  
9 **has recently retired?**

10 A. The Company's determination of whether to retire certain coal-burning generation  
11 facilities involves a fact-specific determination, and VCHEC differs in meaningful ways  
12 from other plants that have been retired. As noted above, VCHEC is a relatively new  
13 resource with potentially decades of operating life remaining. Were the Company to  
14 retire VCHEC in 2023, it would be the youngest generation facility the Company has  
15 ever retired. Whereas other retired units have been more fully depreciated by the time of  
16 their retirement, VCHEC is comparatively in its infancy with a very high remaining plant  
17 balance to be recovered from customers.

18 Importantly, VCHEC also has an environmental profile that is appreciably different—and  
19 significantly better—than other retired coal-burning facilities. As I noted above, because  
20 of its waste biomass and gob coal processing capabilities, along with its advanced  
21 environmental controls, VCHEC is one of the cleanest coal-burning generation facilities  
22 in the United States. Its unique capabilities have also facilitated the cleanup of  
23 significant waste coal and restoration of local natural environments impacted by over a

1 century of coal production. The same cannot be said for other facilities the Company has  
2 retired. VCHEC stands alone in these respects, and these factors push against an early  
3 retirement, notwithstanding the economics of the moment.

4 **Q. If VCHEC were to be retired in 2023, would it have any other impacts on the**  
5 **Company's system?**

6 A. Yes. The Company has performed preliminary load flow analyses for the retirement of  
7 VCHEC and found thermal loading violations of transmission facilities that would need  
8 to be resolved as part of the retirement of the plant. Some of these facilities that would  
9 need to be addressed are located outside of the Company's service territory and would  
10 require coordination with other utilities. The estimated cost to resolve thermal loading  
11 violations for the Dominion Energy Virginia facilities is \$20 million. The cost to resolve  
12 thermal loading violations for the facilities outside the Company's service territory is  
13 currently unknown.

14 **Q. On pages 9-11 of her testimony, Ms. Wilson references market trends that disfavor**  
15 **coal generation, and Mr. Dalton states on pages 6-7 of his testimony that given the**  
16 **current state and federal regulatory climate, continued investment in a coal**  
17 **generating unit may be inadvisable. Please respond.**

18 A. Company Witness Jacqueline R. Vitiello will address the Company's operational and  
19 dispatch decisions for VCHEC in more detail. However, I would like to note that trends  
20 affecting economic performance of a generation unit change and the Company should not  
21 be quick to retire a unit—particularly one with the profile of VCHEC—based on the ebb  
22 and flow of particular markets. Ms. Wilson argues that lower cost gas generation has  
23 made coal-fired units less economic (Wilson at 10). However, natural gas prices are

1 particularly volatile. For example, as shown in Figure 1, natural gas daily prices have  
 2 fluctuated between \$1.19 and \$127.00 in the last decade. More recently natural gas  
 3 prices overall have increased 90% this year versus last year.

**Figure 1: Daily Maximum and Minimum Natural Gas Prices by Year**

Year	Max Price	Max Date	Min Price	Min Date
2013	10.46	1/24/2013	3.24	1/11/2013
2014	118.10	1/22/2014	2.82	12/25/2014
2015	41.22	2/19/2015	1.45	12/25/2015
2016	7.50	12/15/2016	1.54	3/5/2016
2017	15.25	12/29/2017	2.51	10/1/2015
2018	127.00	1/5/2018	2.48	1/1/2016
2019	7.80	1/19/2019	1.76	12/28/2019
2020	5.46	12/17/2020	1.19	10/3/2020
2021	19.20	2/17/2021	2.33	8/30/2021

4 Gas prices will continue to be volatile due to pipeline constraints, federal energy policy,  
 5 gas exports and extreme weather particularly in the winter. Aside from all of the other  
 6 reasons VCHEC should continue to operate, if Sierra Club’s primary argument is that  
 7 inexpensive natural gas renders coal uneconomic, the recent changes in that market  
 8 should give the Commission pause.

9 Further, the nation is facing limited fuel supplies for the upcoming winter due to a  
 10 number of external factors (supply chain issues, past pipeline interruptions, international  
 11 energy demand, etc.). The result is that across the industry, gas storage is low, coal  
 12 inventory is low, and the threat of an extreme cold event is driving market prices higher  
 13 and higher. In response, PJM has started collecting fuel inventory information on a  
 14 mandatory weekly basis. PJM has also revised its business rules for this winter to include  
 15 becoming an “emergency” unit when there is less than 10 days of fuel inventory. This

1 rule is usually set to 72 hours. Given these circumstances, VCHEC is optimally situated  
 2 to perform reliably and economically this winter.

3 At the time the Commission approved VCHEC, the Company did not anticipate that  
 4 power market prices would change so dramatically. Now it appears that prices are  
 5 changing again. The Company should not make a hasty decision to retire a unit early in  
 6 its life on the grounds that it is uneconomic while commodity prices are still in flux,  
 7 particularly for a generating unit designed to meet a variety of policy objectives.

8 **Q. What recommendations has Sierra Club Witness Wilson made to the Commission?**

9 A. Ms. Wilson makes the following recommendations in her testimony:

10 (1) Commission should disallow future capital spending, totaling approximately  
 11 \$25.3 million, given that data show anticipated future net losses.

12 (2) Commission should disallow future fixed operation and maintenance  
 13 (“O&M”) expenses, totaling approximately \$114.8 million, given anticipated  
 14 future net losses.

15 (3) Commission should require the Company to perform a full accounting of its  
 16 operational costs and energy revenues in future proceedings. The Company  
 17 should identify periods of sustained net operational losses and justify its unit  
 18 commitment decisions with supporting documentation. If no such support can be  
 19 provided, the Commission should disallow recovery for variable O&M costs  
 20 incurred during these periods.

1 **Q. Please respond specifically to Ms. Wilson's recommendations.**

2 A. The Commission should reject each of Ms. Wilson's recommendations.

3 With respect to the first and second recommendations, the projected capital and O&M  
4 costs, as well as the future fixed O&M expenses, are reasonable and prudent, as  
5 supported by the evidence presented in this proceeding. As noted in my testimony, there  
6 are compelling reasons to continue operating VCHEC outside of Sierra Club's  
7 economics-only lens. Ms. Wilson compares this case to the 2018 Rider E proceeding  
8 (Case No. PUR-2018-00195) in apparent support for her argument that VCHEC should  
9 be retired. But in Rider E, the Commission was not considering whether a unit should be  
10 retired, and on what basis. Rather, the Commission disallowed certain costs on the  
11 grounds that insufficient analysis was undertaken to justify particular projects.

12 Regarding Ms. Wilson's third recommendation, it is not entirely clear what information  
13 Sierra Club is proposing that the Company be required to provide to the Commission.  
14 Staff's report recommendation is a more appropriate solution for obtaining useful  
15 information concerning VCHEC.

16 **Q. What recommendations has Staff Witness Dalton made to the Commission?**

17 A. While Staff acknowledges the economic questions regarding VCHEC's continued  
18 analysis, Staff does not recommend any disallowances in this proceeding or suggest that  
19 an early retirement date should be set for VCHEC in this case. Rather, Mr. Dalton  
20 recommends on pages 9-12 of his testimony that the Commission direct the Company to  
21 analyze and report to the Commission a possible pathway towards economic viability for  
22 the Project on a going-forward basis. Staff lists a number of issues that it suggests should



1 be addressed in such a report. Staff recommends that this report be filed within nine  
2 months of the final order in this proceeding, and before the next Rider S update  
3 proceeding.

4 Mr. Dalton also recommends that the Commission direct the Company to forego  
5 additional capital investments at VCHEC beyond those requested in the instant case until  
6 the Company has completed this analysis and filed a report with the Commission.

7 **Q. What is your response to Staff's recommendations?**

8 A. The Company appreciates the economic questions regarding VCHEC's continued  
9 operations and does not oppose the recommendation to analyze and file a report with the  
10 Commission on the varied issues impacting VCHEC's continued operation, as suggested  
11 by Staff. The Company also agrees that it is premature to disallow costs at this stage  
12 without further analysis.

13 With respect to Staff's recommendation that the Company forego additional capital  
14 investments pending this report, the Company agrees that it would be inappropriate, prior  
15 to filing its report, to undertake any long-term capital projects. However, the Company  
16 believes it is prudent to continue with ordinary maintenance investments necessary for  
17 operation. Company Witness Dibble addresses this recommendation and provides  
18 greater detail regarding the Company's planned capital spending at VCHEC.

19 **Q. Do you have any concluding comments?**

20 A. The Commission and the General Assembly found the construction of VCHEC to be in  
21 the public interest. Moreover, as the Commission noted in its Final Order granting a  
22 certificate of public convenience and necessity ("CPCN") for VCHEC, the relevant

1 statute “does not require the Commission to find that the Coal Plant is the Company’s  
 2 least cost option.”<sup>1</sup> That was not a requirement at the time the Commission granted a  
 3 CPCN for the project, and it is not a prerequisite to continued cost recovery for the  
 4 approved facility today.

5 VCHEC is a unique facility worthy of individualized consideration, and the Company  
 6 believes Staff’s recommended report offers an opportunity to fully address all factors  
 7 bearing on VCHEC’s continued operation. Disallowing costs or setting an early  
 8 retirement date at this stage would be premature and counter-productive.

9 **Q. Does this conclude your pre-filed rebuttal testimony?**

10 **A.** Yes, it does.

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<sup>1</sup> *Application of Virginia Electric and Power Company For a certificate of public convenience and necessity to construct and operate an electric generation facility in Wise County, Virginia, and for approval of a rate adjustment clause under §§ 56-585.1, 56-580 D, and 56-46.1 of the Code of Virginia, Case No. PUE-2007-00066, Final Order at 12 (Mar. 31, 2008).*

**APPENDIX A****BACKGROUND AND QUALIFICATIONS  
OF  
GLENN A. KELLY**

Glenn A. Kelly joined Dominion Energy Virginia in 1986 as an engineer after graduating from Virginia Tech with a Bachelor of Science degree in Mechanical Engineering. He received a Master of Business Administration degree from Averett University in 1998.

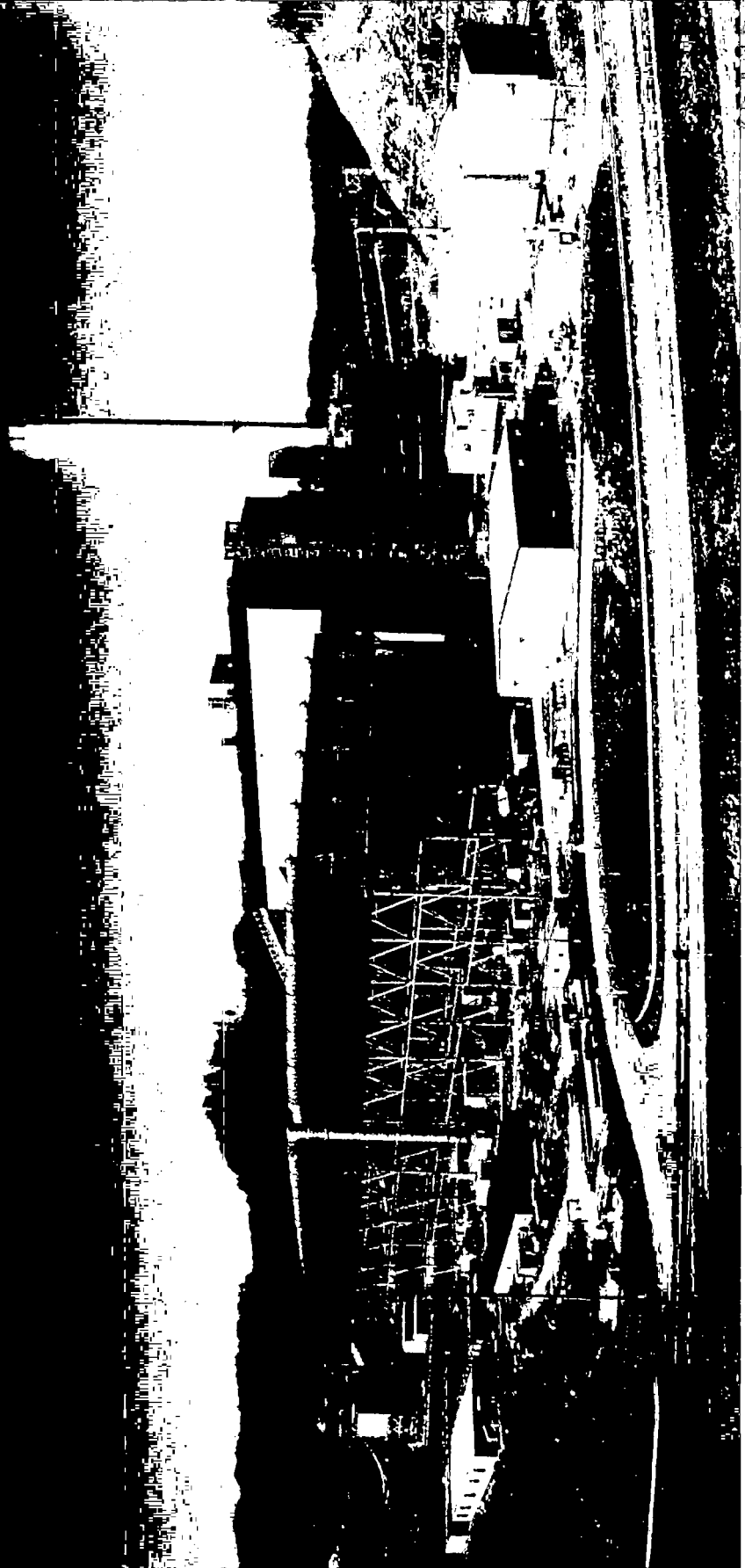
After working eleven years as a performance and project engineer at the Chesapeake Energy Center and the Yorktown Power Station, Mr. Kelly transferred to the Company's Power Generation Technical Services Department in Richmond as a Generation Performance Specialist. Following a series of positions supporting Power Generation operations, he earned his Six Sigma Master Black Belt and became Manager of Planning and Analysis in 2004. His responsibilities included Energy Supply PJM support, fuel expense and variance reporting, generation forecasting, and project financial analysis.

In September 2007, Mr. Kelly was promoted to Director – Generation System Planning for Dominion Energy Virginia. In December 2019, Mr. Kelly expanded his role and changed titles to Director – Integrated Strategic Planning. In this role he is responsible for Dominion Energy's coordination and strategic planning over multiple business segments. The role includes all the responsibilities that he has in Virginia like developing generation portfolio plans to serve customers' future energy and capacity requirements and monitoring fuel expenses and providing forecasted operational data to various groups within the Company. In addition, he is now responsible for similar functions in South Carolina and other business units.

Mr. Kelly has previously submitted testimony before the State Corporation Commission of Virginia and the North Carolina Utilities Commission.

# VCHC Regional Benefit

December 07, 2021



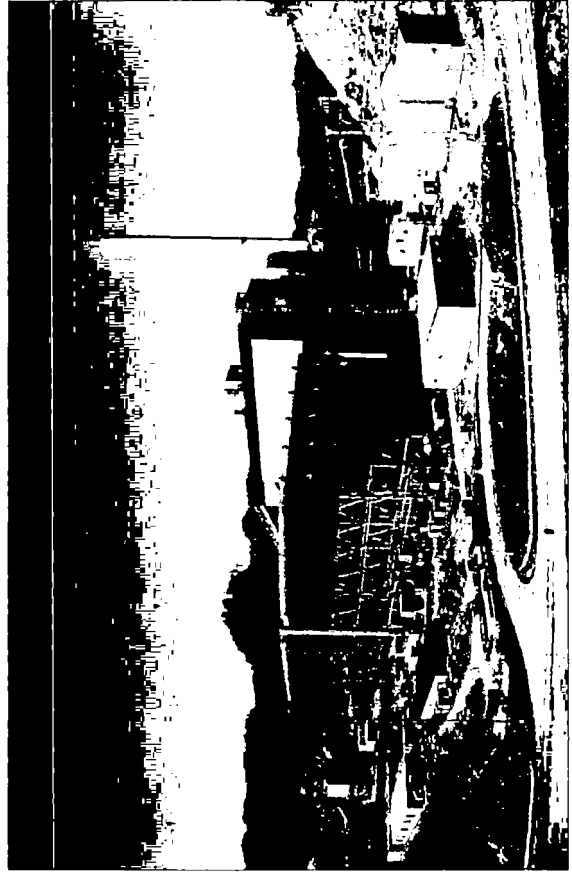
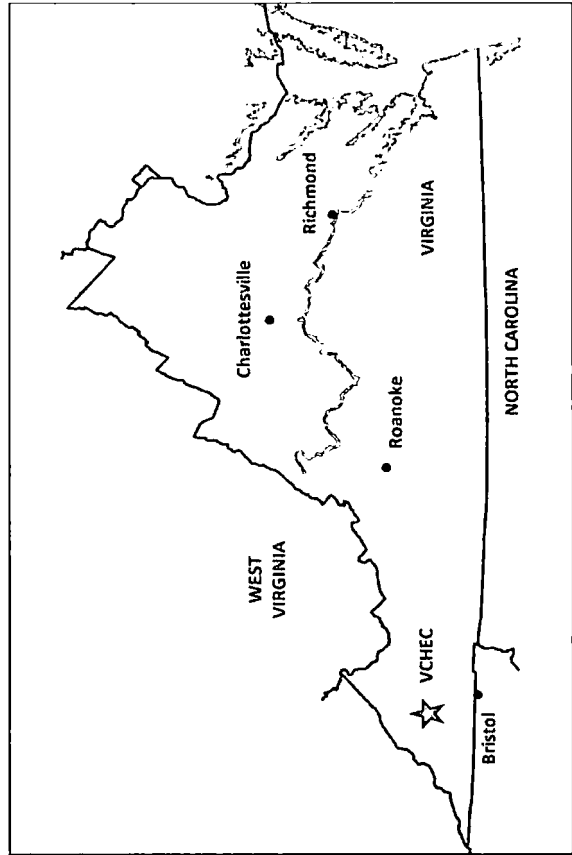
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# VCHC Legislative Framework

- 2004: SB651 stated that construction of “a coal-fired generation facility that utilizes Virginia coal and is located in the coalfield region of the Commonwealth...is declared to be in the public interest”
- 2007: SB1416/HB3068 stated that a utility would be allowed to “apply a rate adjustment clause for recovery from customers of the costs of a coal-fired generation facility that utilizes Virginia coal and is located in the coalfield region of the Commonwealth...the utility may recover an enhanced rate of return”

# Bringing Jobs to the Region

- 500-550 jobs supported
- 122 full-time employees
- 24 full-time contractors
- 350-400 external jobs (estimate per 2009 Virginia Tech study)



# Economic Driver

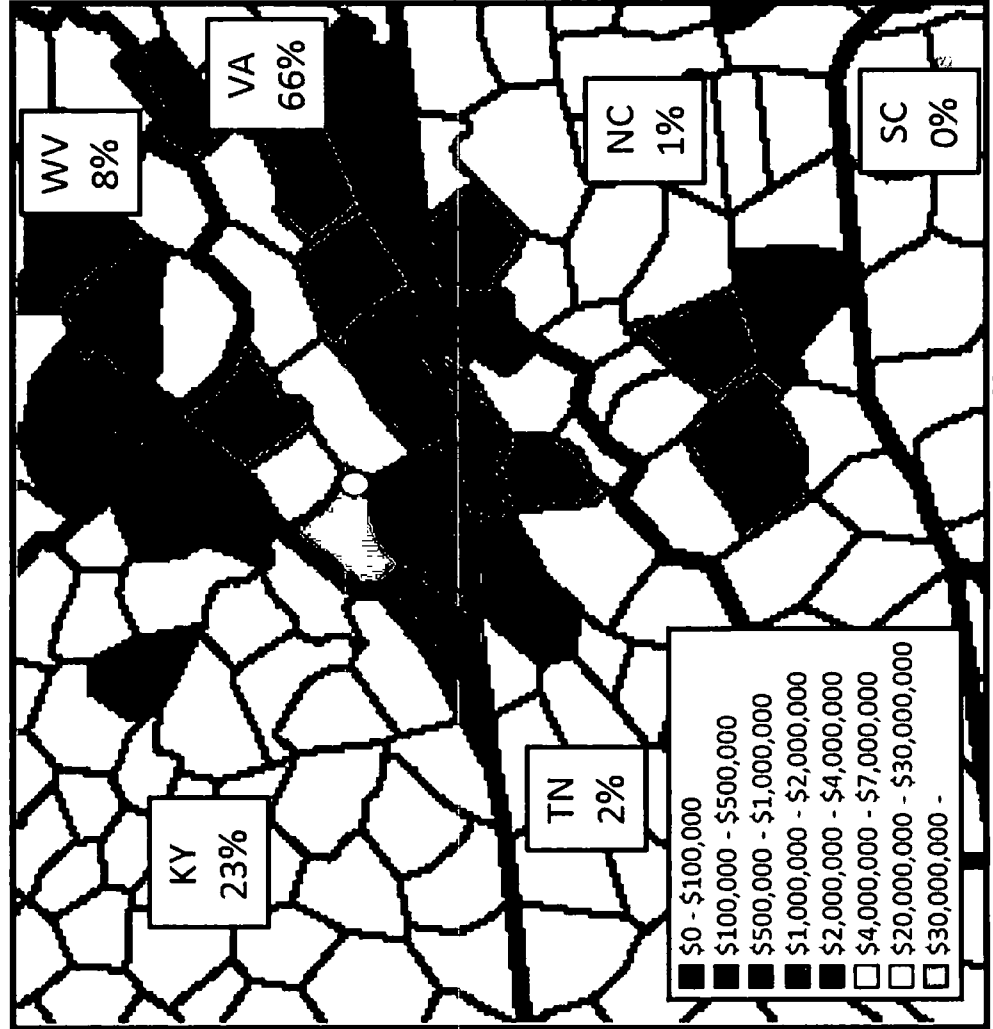
"In the Public Interest": SB651

- When operating as a base-loaded facility, VCHEC contributes over \$100 million to the regional economy:
  - Over \$ 86 million in fuel expenses
  - Over \$ 8 million in property taxes
  - Over \$ 1.3 million in payroll
- To date, VCHEC has contributed over \$3.5 million in charitable contributions to support Southwestern Virginia programs.
- When production levels decrease, so does the facility's ability to support jobs and the regional economy due to the reduced demand for resources
- VCHEC is the largest single contributor to the tax base in Wise County and the largest industrial employer.

# 12-Month Regional Economic Impact

July 2018 - June 2019

State	County	Amount	Percent
VA	Wise	\$ 32,298,422	30.3%
VA	Russell	\$ 21,857,948	20.5%
KY	Harlan	\$ 6,186,432	5.8%
KY	Perry	\$ 5,898,205	5.5%
KY	Letcher	\$ 5,179,766	4.9%
KY	Knott	\$ 4,972,895	4.7%
VA	Tazewell	\$ 4,875,491	4.6%
VA	Scott	\$ 3,630,927	3.4%
VA	Washington	\$ 2,763,803	2.6%
WV	Mingo	\$ 2,681,455	2.5%
KY	Pike	\$ 2,543,972	2.4%
VA	Lee	\$ 2,493,184	2.3%
WV	Logan	\$ 2,232,021	2.1%
TN	Sullivan	\$ 1,638,700	1.5%
WV	Wyoming	\$ 1,381,410	1.3%
VA	Giles	\$ 1,310,688	1.2%
WV	Raleigh	\$ 1,296,812	1.2%
NC	Cabarrus	\$ 870,124	0.8%
VA	Grayson	\$ 428,290	0.4%
TN	Johnson	\$ 397,828	0.4%
WV	Wood	\$ 331,834	0.3%
VA	Carroll	\$ 248,914	0.2%
NC	Rutherford	\$ 192,611	0.2%
TN	Hawkins	\$ 179,400	0.2%
KY	Magoffin	\$ 159,727	0.1%
NC	Ashe	\$ 99,200	0.1%
NC	McDowell	\$ 93,226	0.1%
VA	Smyth	\$ 87,757	0.1%
NC	Buncombe	\$ 79,750	0.1%
TN	Washington	\$ 67,740	0.1%
VA	Buchanan	\$ 66,694	0.1%
VA	Wythe	\$ 55,792	0.1%



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# Charitable Giving

- **Three-Tiered Approach**
  - Social Programs
  - Education
  - The Arts
- **Current Programs: Time, Talent, or Treasure**
  - Lyric Theatre Project
  - St Paul Youth Fishing Tournament
  - Angel Tree Program
  - School Supplies Program
  - Feeding America Backpacks Unite
  - School Sports Programs
  - 4-H Programs
  - Dante Coal and Railroad Museum
  - St Paul Kiwanis Club Golf Tournament
  - Clinch River Festival
  - St Paul Youth Bicycle Program

## Facilitate Waste Fuel Reclamation

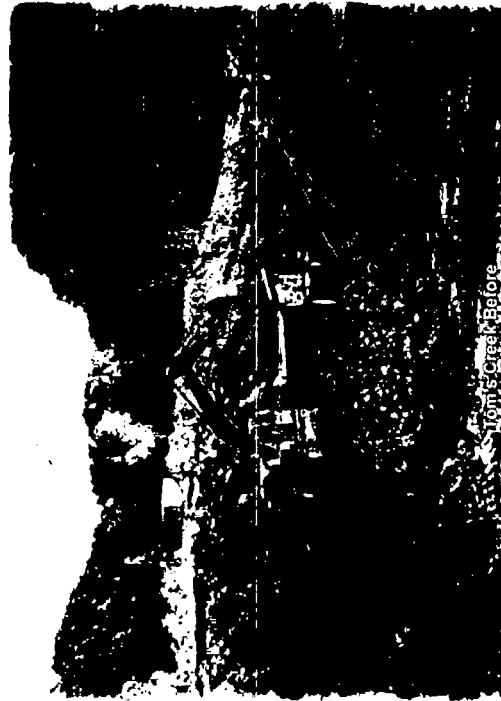
- VCHEC utilizes two waste fuels:
  - Waste coal (GOB)
  - Waste wood (slash)
- Intent was to create a market for products that otherwise have no economic value, but cause damage to the environment
- From VCHEC's commercial operation date of July 12, 2012 through summer 2021, the station converted over 4 million tons of waste coal to energy
- VCHEC's ability to burn waste wood allows it to be removed from timber operations and benefited for the generation of electricity.

## Environmental Stewardship

- VCHC's ability to burn waste coal (GOB) helps the environment of Southwestern Virginia.
- For decades, GOB was piled up in valleys where it blocked creeks and streams and contributed to pollution of waterways.
- These GOB piles have been called the greatest environmental threat to Southwestern Virginia by state officials.

# Environmental Stewardship

Over 693,000 tons of waste coal was reclaimed from the Tom's Creek site.



The waste coal reclaimed from these sites, previously an environmental threat, was used by VCHC to generate electricity.

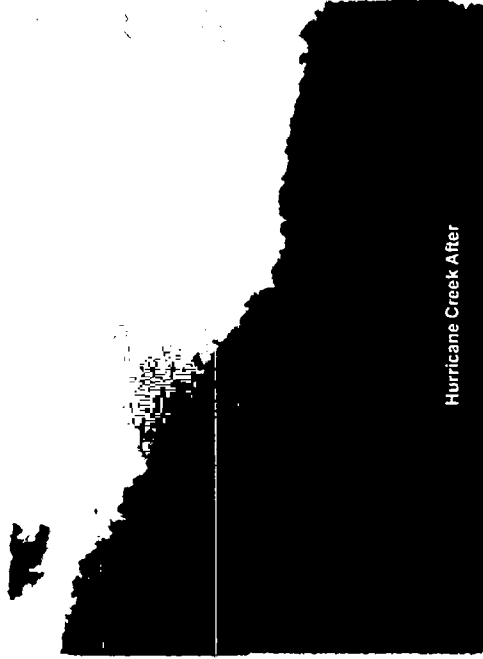
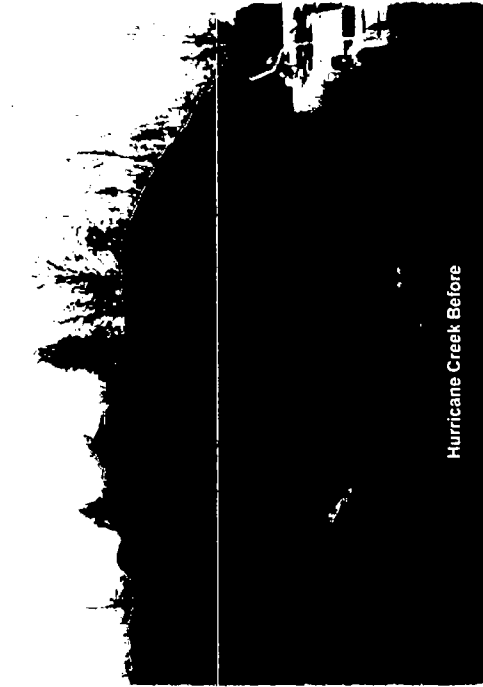
# Environmental Stewardship

Over 595,000 tons of waste coal was reclaimed from the Straight Hollow site.



# Environmental Stewardship

Over 478,000 tons of waste coal was reclaimed from the Hurricane Creek site.



# Environmental Stewardship

Over 177,000 tons of waste coal was reclaimed from the Bearwallow site.



## Environmental Stewardship

- There have been ten GOB reclamation projects completed, with one currently under way.
- Over 4,000,000 tons of GOB have been converted to energy at VCHEC.
- Over 10 million additional tons of GOB has been identified for potential reclamation in Virginia.
- It was originally estimated that within the region including Virginia, West Virginia, and Kentucky, there was enough GOB to operate the VCHEC facility for over 50 years (VT Study).
- VCHEC is currently evaluating ways to increase the percentage of waste fuels it is capable of utilizing.



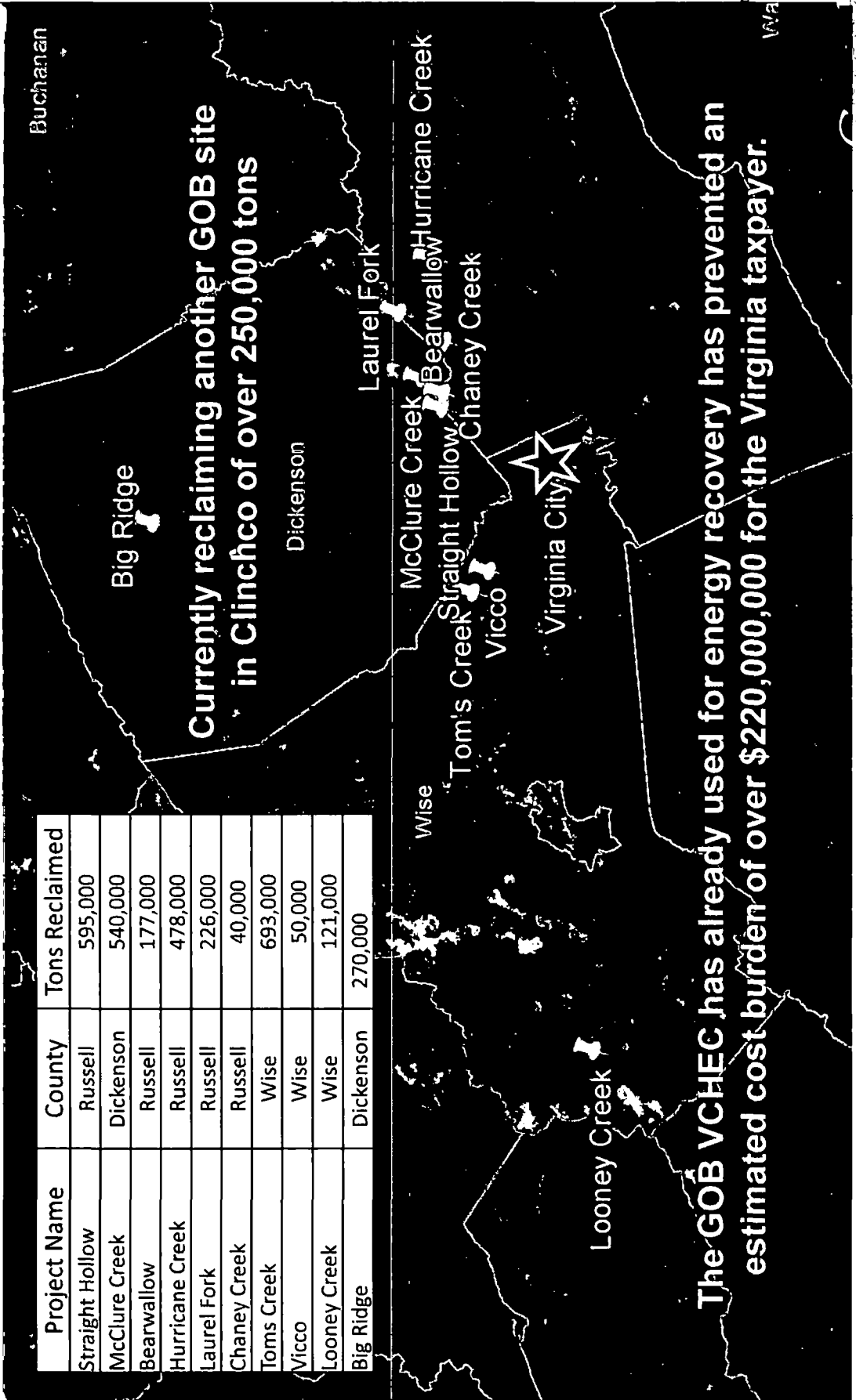
# Environmental Stewardship

A video produced by the Mountain Heritage Project showcases a  
GOB pile currently being reclaimed for energy conversion at VCHEC.

The Environmental & Economic Benefits of GOB Removal to Southwest  
Virginia: <https://www.youtube.com/watch?v=IXc4KavKKNc>

# GOB Reclamation Sites

Project Name	County	Tons Reclaimed
Straight Hollow	Russell	595,000
McClure Creek	Dickenson	540,000
Bearwallow	Russell	177,000
Hurricane Creek	Russell	478,000
Laurel Fork	Russell	226,000
Chaney Creek	Russell	40,000
Toms Creek	Wise	693,000
Vicco	Wise	50,000
Looney Creek	Wise	121,000
Big Ridge	Dickenson	270,000



The GOB VCHEC has already used for energy recovery has prevented an estimated cost burden of over \$220,000,000 for the Virginia taxpayer.

15-03-2013 10:23:23

# Using Coal Responsibly

- Solid Waste (coal combustion byproducts)
  - Managed on site in the Curley Hollow Solid Waste Management Facility (Landfill)
- Wastewater
  - Treated on site in our wastewater treatment facility
  - Recycled for use in “gray water” applications
  - Zero discharge from January 2013 to March 2018
- Water Consumption
  - Air Cooled Condensers allow VCHEC to operate on 5% of the water used by a typical station this size
- Air Emissions
  - Complex, state-of-the-art air quality control system
  - Strictest air permit in the US at the time of issue

*“What Dominion has proposed is the full up suite of controls. It is the best there is.”*

Bruce Buckheit  
Virginia Air Pollution Control Board  
06/25/08

# VCHEC Air Emissions Comparison

Upon commercial operation, VCHEC had the most restrictive emissions controls and the most strict air permit of any coal-fired power station in operation in the US

Combustion Technology	SO <sub>2</sub> (TPY)	NO <sub>x</sub> (TPY)	PM (TPY)	Hg (PPY)
1960's PC Unit	56,174	29,023	133,880	562
1970's PC Unit	56,174	18,256	1,339	107
1980's CFB Unit	13,452	10,762	451	75
1990's CFB Unit	6,726	5,381	361	50
VCHEC	604	1,920	329	5
<b>% Reduction over 1960's Technology</b>	<b>98.9%</b>	<b>93.4%</b>	<b>99.8%</b>	<b>99.1%</b>

# VCHC Third-Party Environmental Audit

- ERM conducted a third-party audit on 08/11/20 and 08/12/20
- Prompted by recent consent decree
- Focused on Clean Water Act
  - Virginia Pollutant Discharge Elimination System (VPDES) Permit
  - Industrial Stormwater Permit
  - Construction Stormwater Permit
  - Virginia Wetlands Permit / Corps of Engineers
  - Pesticide / Herbicide Management
  - Chemical approval process
- Audit yielded ZERO regulatory findings
- Auditors were extremely complementary of station culture, systems, processes, programs, and housekeeping

# Summary

- VCHC is one of the cleanest, most technologically advanced utility-scale coal-fired power station in the US
- Due to pushes for more sustainable and “environmentally-friendly” energy sources, fossil fuels are being phased out
- VCHC was constructed and operates in the public interest by providing both environmental and economic benefits to the Southwestern Virginia region
- Thoughts to consider moving forward:
  - What challenges and opportunities will the inevitable move away from fossil fuels provide to the SWVA region from economic and environmental perspectives?
  - Is it worthwhile to consider recalibrating the VCHC mission to make its future as an economic engine and environmental steward sustainable in the face of adverse competitive factors?

**WITNESS REBUTTAL TESTIMONY SUMMARY**

**Witness:** Jacqueline R. Vitiello

**Title:** Director, Power Generation Regulated Operations

**Summary:**

Company Witness Jacqueline R. Vitiello addresses the Company's dispatch decisions and market operations for the Virginia City Hybrid Energy Center ("VCHEC") in response to the testimony of the Sierra Club. Ms. Vitiello disputes that the Company's management and dispatch decisions have been uneconomic or contributed to the economic challenges currently facing the facility. She provides background information on the dispatch options available to participants in the PJM Interconnection, LLC ("PJM") market and describes the reasons a company would elect to must-run a unit in PJM, including to maximize the economics of a unit's dispatch over a multiple day period, ensure reliability, and conduct testing.

Company Witness Vitiello explains that offering a unit on a must-run basis does not necessarily mean that the unit is dispatched uneconomically. Additionally, she explains unit-specific reasons that VCHEC is sometimes committed on a must-run basis, specifically the requirements of the Title V air permit from the Virginia Department of Environmental Quality. Finally, Ms. Vitiello emphasizes the market benefits VCHEC provides as part of the portfolio of the Company's generation fleet. She explains that for a variety of reasons, VCHEC is optimally situated to perform reliably and economically this winter given the shortage of fuel supplies.

**REBUTTAL TESTIMONY  
OF  
JACQUELINE R. VITIELLO  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUR-2021-00114**

1 **Q. Please state your name, business address, and position with Virginia Electric and**  
2 **Power Company (“Dominion Energy Virginia” or the “Company”).**

3 **A. My name is Jacqueline R. Vitiello, and I am Director of Power Generation Regulated**  
4 **Operations for the Company. My business address is 600 East Canal Street, Richmond,**  
5 **Virginia 23219. A statement of my background and qualifications is attached as**  
6 **Appendix A.**

7 **Q. Ms. Vitiello, what is the purpose of your rebuttal testimony in this proceeding?**

8 **A. I am testifying in support of the Company’s biennial update filing with respect to its**  
9 **Rider S for the Virginia City Hybrid Energy Center (“VCHEC”). Specifically, I will**  
10 **address the Company’s dispatch decisions and market operations for VCHEC in response**  
11 **to Witness Rachel Wilson’s testimony on behalf of the Sierra Club.**

12 **Q. On pages 21-24 of her testimony, Witness Wilson specifically argues that the**  
13 **Company’s dispatch decisions and operation of VCHEC have contributed to its**  
14 **uneconomic performance. Do you agree?**

15 **A. No. While the economics for VCHEC are currently challenged, those challenges are not**  
16 **attributable to the Company’s operational management or dispatch decisions. As I**  
17 **explain later in my testimony, there are certain market and regulatory constraints that**



1 impact how and when the unit can be deployed. Considering these factors, the Company  
2 manages VCHEC as economically as possible.

3 **Q. Many of Witness Wilson's operational criticisms relate specifically to the way**  
4 **VCHEC is dispatched in the PJM Interconnection, LLC ("PJM") market. Can you**  
5 **describe the dispatch options afforded to participants in the PJM market?**

6 A. When generators offer a unit in the day-ahead PJM market, they may do so with one of  
7 four commitment status options. The four options include:

- 8 1. Economic – The unit is available for PJM to dispatch online or offline. PJM  
9 will decide to run the unit or not based on the anticipated economics of its  
10 operation compared to other units offered in the market. With this  
11 commitment status, PJM may elect not to run the unit.
- 12 2. Must Run – The generator self-schedules the unit. In this commitment status,  
13 the generator decides to run the unit regardless of whether it would have been  
14 selected to run in the PJM market. There are a variety of reasons generators  
15 may select this status, and a must-run commitment does not necessarily mean  
16 that a unit will perform uneconomically; only that it must run notwithstanding  
17 economic consideration.
- 18 3. Unavailable – The unit has a planned maintenance or forced outage, and  
19 therefore cannot be run.
- 20 4. Emergency – This status is only used in emergency situations established by  
21 PJM. In such cases, the entire unit is dedicated to emergency operation as  
22 determined by PJM, regardless of economic status.

1 **Q. Can you elaborate on the difference between economic and must run commit status?**

2 A. When a unit is offered as economic, PJM decides whether the unit will be awarded in the  
3 day-ahead market. PJM will run the unit if it is determined to be economic for the next  
4 day compared to other units offered as economic. By contrast, when a unit is offered as  
5 must run, the Company requires the unit to run without regard to economic analysis.  
6 This commitment status may be selected for a number of reasons, including testing,  
7 environmental requirements, fuel inventory issues, or cycling frequency.

8 **Q. What are some reasons to must-run a unit in PJM?**

9 A. The primary reason to choose must-run status is to maximize the economics of a unit's  
10 dispatch over a multiple day period. When PJM makes decisions to commit a unit in the  
11 day-ahead market, it is only considering the next 24 hours. For units with higher startup  
12 costs and long minimum run times, such as VCHEC, this sometimes artificially leads to a  
13 determination that running the unit would be uneconomic. For example, consider a unit  
14 with startup costs of \$100,000 that is projected to make \$30,000/day for 5 days in the  
15 energy market (for a total of \$150,000). PJM may never dispatch the unit because the  
16 \$30,000/day is not enough to overcome the \$100,000 startup costs in a single 24-hour  
17 period. However, running the unit for the entire 5-day period results in a better economic  
18 outcome for customers. In such a scenario, the Company may choose to must-run the  
19 unit in order to get the unit online and allow it to achieve the \$150,000 energy profit over  
20 the 5-day period. Conversely, if a unit is going to lose \$50,000 over a weekend and it  
21 costs \$100,000 to start back up, committing the unit as must run through the weekend is  
22 the most economical option.

1           Additionally, it is important for reliability reasons to must-run units that cannot cycle  
2           quickly so that they will be available to meet customer needs. This operational approach  
3           also minimizes the long-term cost of a unit where each startup degrades equipment and  
4           causes more maintenance costs. Using the must-run commit status ensures less cycling  
5           and ultimately lower costs and increased reliability for customers.

6           Testing is another reason for a must run commit status. Some testing is scheduled 30 or  
7           more days in advance and cannot be rescheduled. These scenarios require the unit to run  
8           without knowing in advance what the market will be during that time.

9   **Q.    Witness Wilson’s testimony suggests that commitment on a must-run basis is**  
10   **synonymous with uneconomic operation (Wilson at 21-22). Do you agree?**

11   A.    No. Offering a unit as must run does not necessarily mean that the unit is dispatched  
12           uneconomically. As noted above, a unit can be dispatched as must-run for a variety of  
13           reasons. In fact, units are sometimes dispatched as must-run in order to ensure economic  
14           operation and provide better value to customers. Looking solely at the number or  
15           percentage of must-run hours is a poor indicator of economic performance, particularly  
16           for units like VCHEC that entail considerable startup time and cost, making must-run  
17           status a more frequent occurrence.

18   **Q.    Please give an example of a day that VCHEC’s status was must run and the unit**  
19   **was economic?**

20   A.    On August 6, 2021, VCHEC’s status was must-run for all 24 hours. The unit cost was  
21           about \$40/MWh including the costs the Company pays to comply with the Regional  
22           Greenhouse Gas Initiative (“RGGI”). As shown in the table below, VCHEC had a total

1 profit of \$67,392.82 even though its status was must-run the entire time. If the Company  
 2 had offered VCHEC on an economic commitment status, it may not have been selected  
 3 due to uneconomic dispatch in the overnight hours. The equation for determining  
 4 economic operation is: (Generation x (Price – Cost)). The economic analysis of  
 5 VCHEC’s operation on August 6, 2021 is provided in the table below:

6 **Table 1: Economics of August 6, 2021 VCHEC Operation**

Date	Hour	Price	Generation	Profit/(Loss)
8/6/2021	1	30.26	439.48	\$ (4,280.54)
8/6/2021	2	27.66	459.52	\$ (5,670.48)
8/6/2021	3	26.51	439.62	\$ (5,930.47)
8/6/2021	4	25.91	363.96	\$ (5,128.20)
8/6/2021	5	26.07	351.96	\$ (4,902.80)
8/6/2021	6	26.57	350.44	\$ (4,706.41)
8/6/2021	7	27.14	350.62	\$ (4,508.97)
8/6/2021	8	26.36	351.36	\$ (4,792.55)
8/6/2021	9	26.99	349.34	\$ (4,544.91)
8/6/2021	10	48.85	357.77	\$ 3,166.26
8/6/2021	11	43.01	410.31	\$ 1,235.03
8/6/2021	12	40.82	439.23	\$ 360.17
8/6/2021	13	43.05	541.77	\$ 1,652.40
8/6/2021	14	76.93	603.26	\$ 22,278.39
8/6/2021	15	57.26	611.82	\$ 10,560.01
8/6/2021	16	67.86	606.00	\$ 16,883.16
8/6/2021	17	77.50	569.36	\$ 21,351.00
8/6/2021	18	83.36	454.19	\$ 19,693.68
8/6/2021	19	73.44	354.72	\$ 11,861.84
8/6/2021	20	46.60	254.59	\$ 1,680.29
8/6/2021	21	58.96	212.31	\$ 4,025.40
8/6/2021	22	40.55	268.52	\$ 147.69
8/6/2021	23	36.79	271.75	\$ (872.32)
8/6/2021	24	32.11	274.38	\$ (2,164.86)
			SUM	\$ 67,392.82

1 **Q. For VCHEC, are there other unit-specific reasons beyond those noted above that**  
 2 **the unit is sometimes submitted on a must-run basis?**

3 A. Yes. One of the primary reasons VCHEC has a high percentage of must-run hours is due  
 4 to the Title V air permit from the Virginia Department of Environmental Quality  
 5 (“DEQ”). To be in compliance with the Title V permit, VCHEC must burn 10%  
 6 biomass, which requires the unit to be online at times it may otherwise not be.

7 **Q. Please explain the biomass percentage requirement in more detail.**

8 A. The DEQ Title V air permit requires VCHEC to burn a certain percentage of biomass  
 9 each year. The defined year for the requirement is between July 1 and June 30 each year.  
 10 Starting in July 1, 2020 and going forward, 10% of VCHEC’s heat input is required to be  
 11 committed to burning biomass each year.

12 The permit states “the percent shall be determined by the total biomass heat input for any  
 13 given year divided by the total heat input for any given year averaged over a rolling three  
 14 years.” The following equation is used to determine the percentage:

$$15 \quad \frac{\text{Biomass Heat Input}_{20-21}}{(\text{Total Heat Input}_{20-21} + \text{Total Heat Input}_{19-20} + \text{Total Heat Input}_{18-19})/3}$$

16 Since the denominator is the past three years of total heat input, every year is dependent  
 17 on the past three years. Because of the increasing percentage of biomass that is required  
 18 each year, the mathematical result is that since the unit ran at a 37% capacity factor over  
 19 the 2018/2019 compliance year and a 17% capacity factor over the 2019/2020  
 20 compliance year, it must run at least 14% over the 2020/2021 compliance year in order to  
 21 have enough biomass fuel throughput to satisfy the requirement of the air permit.

1 Since the biomass percentage no longer increases beginning in July 2020, this will be less  
2 of an issue going forward, but does account for increase must-run time in previous years.

3 **Q. How does the Company determine when to operate VCHEC to satisfy the biomass**  
4 **percentage requirement?**

5 A. The Company uses weekly and monthly forward energy prices to plan when to operate  
6 VCHEC throughout the biomass compliance year. For the months with the highest  
7 forward energy prices, the Company schedules the unit's required testing and plans to  
8 operate the unit for biomass compliance. Additionally, the Company tracks the biomass  
9 burn percentage and will adjust operation plans as the biomass burn percentage  
10 approaches the required percentage. This strategy ensures that the unit will operate  
11 during the most favorable economic conditions.

12 **Q. Do you have any concluding comments in response to Sierra Club Witness Wilson?**

13 A. The Company works diligently to dispatch VCHEC in the most economic manner  
14 possible for customers within the confines of market, regulatory, and reliability  
15 considerations associated with the unit as described above. While Ms. Wilson correctly  
16 describes certain raw dispatch data related to VCHEC, she incorrectly concludes from  
17 that data that the Company must be mismanaging the unit's operations rather than  
18 accounting for and addressing the many factors that drive the Company's unit-specific  
19 management approach. The Company continues to view VCHEC as an important  
20 resource in its generation portfolio and looks forward to reviewing the future economics  
21 of the facility.

1 Q. Does this conclude your pre-filed direct testimony?

2 A. Yes, it does.

**BACKGROUND AND QUALIFICATIONS  
OF  
JACQUELINE R. VITIELLO**

Jacqueline R. Vitiello joined the Dominion Energy in 2010 as a Nuclear Engineer in the Core Design group of the Nuclear Analysis and Fuels department. In 2012, Mrs. Vitiello became an Hourly Trader for merchant operations in Dominion Energy Marketing, Inc. In 2013, she was promoted to Hourly Trading Coordinator. In August 2017, she was promoted to Manager of Electric Market Operations in the Energy Supply group, in which she was responsible for the Company's electric wholesale operations, including energy procurement and generation unit commitment. In August 2020, Mrs. Vitiello was promoted to her current position as Director of Power Generation Regulated Operations.

Mrs. Vitiello graduated from the University of Tennessee - Knoxville in 2010 with a Bachelor of Science degree in Nuclear Engineering. While working for the Company, she also received a Master of Business Administration degree from Virginia Commonwealth University in 2015.



WITNESS REBUTTAL TESTIMONY SUMMARY

Witness: Christopher D. Dibble

Title: Director, Power Generation Operations

Summary:

Company Witness Christopher D. Dibble addresses the Company's proposed capital expenses for the Virginia City Hybrid Energy Center ("VCHEC") in response to the Sierra Club's recommendation that the Commission disallow certain future capital spending. Mr. Dibble explains that maintenance capital spending cannot typically be deferred because it relates to the safe and reliable operation of the station and the upkeep of equipment in the near term. This is in contrast to long-term capital spending that would extend the life of major equipment and improve infrastructure.

Mr. Dibble explains that the majority of the Company's near-term projected capital expenses for VCHEC are maintenance capital expenses necessary for the safe and reliable operation of VCHEC. Given Commission Staff's and the Sierra Club's concerns about the economic viability of VCHEC, the Company commits to withholding investment in life-extending capital projects until a more long-term decision about VCHEC's operations and retirement has been made. However, until that decision is made, the Company will need to invest in the planned maintenance capital projects to ensure the safe and reliable operation of the unit in the near term, and the costs presented in this proceeding largely fall in this category. Finally, Mr. Dibble notes the Company's agreement with Staff to refrain from additional investment in new coal combustion residuals containment facilities unless and until additional capacity is required.

**REBUTTAL TESTIMONY  
OF  
CHRISTOPHER D. DIBBLE  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUR-2021-00114**

1 **Q. Please state your name, business address, and position with Virginia Electric and**  
2 **Power Company (“Dominion Energy Virginia” or the “Company”).**

3 A. My name is Christopher D. Dibble, and I am Director of Power Generation Operations  
4 for the Company. My business address is 600 East Canal Street, Richmond, Virginia  
5 23219.

6 **Q. Have you previously submitted testimony in this proceeding?**

7 A. Yes, my pre-filed direct testimony on behalf of Dominion Energy Virginia was submitted  
8 to the State Corporation Commission of Virginia in this proceeding on June 8, 2021,  
9 supporting the Company’s biennial update filing with respect to its Rider S for the  
10 Virginia City Hybrid Energy Center (“VCHC”).

11 **Q. Mr. Dibble, what is the purpose of your rebuttal testimony in this proceeding?**

12 A. I will address the Company’s proposed capital expenses for VCHC in response to Sierra  
13 Club Witness Wilson’s recommendation that the Commission disallow certain future  
14 capital spending (Wilson at 5, 18).

15 **Q. What types of projects comprise the capital budget for VCHC in this proceeding?**

16 A. Capital projects that are planned for VCHC and included in this case consist of  
17 “maintenance” capital projects and projects that are intended to extend the life of the  
18 station’s operating equipment and or infrastructure. Maintenance capital spending relates

1 to the safe and reliable operation of the station and the upkeep of the equipment in the  
2 near term. This type of capital spending typically cannot be deferred.

3 **Q. What is the difference between maintenance capital and other types of capital**  
4 **projects?**

5 A. Maintenance capital projects are designed to maintain operating equipment currently in  
6 use or replace equipment that has reached the end of its useful life or is no longer  
7 operating in a reliable condition to ensure the station can operate safely and properly in  
8 the immediate future. This also includes replacement of station controls that are updated  
9 as a result of technology obsolescence or required upgrades such as cyber security  
10 improvements. These types of short-term projects are classified as capital as per  
11 accounting rules for fixed assets.

12 Projects that would not be considered as maintenance capital are projects that ensure  
13 long-term viability for equipment such as turbine and generator overhauls and other  
14 major equipment that would result in long periods of forced outage if a significant failure  
15 occurred. Additionally, infrastructure improvements for items such as buildings,  
16 elevators, roadways, and other facility infrastructure improvements fall into this category  
17 of long-term capital spending.

18 **Q. Are the Company's projected capital expenses maintenance capital expenses or**  
19 **other capital expenses?**

20 A. The majority of the Company's projected capital expenses for VCHEC are maintenance  
21 capital expenses. The capital projects underlying the projected expenses are necessary

1 for the safe and reliable operation of VCHEC in the near-term and are not life-extending  
2 projects.

3 **Q. Given that the majority of projected capital expenses in the near term are for**  
4 **maintenance capital projects, what is your response to Sierra Club Witness Wilson's**  
5 **recommendation that the Commission deny approximately \$25.3 million of future**  
6 **capital spending (Wilson at 5, 18)?**

7 **A.** Between now and 2025, the majority of the Company's projected capital expenses are for  
8 maintenance capital projects, meaning that these projects are necessary now for the  
9 continued safe and reliable operation of VCHEC. These projects are not to extend the  
10 asset life of the unit.

11 Staff Witness David J. Dalton recommends that the Commission direct the Company to  
12 analyze and report to the Commission within nine months of the final order in this  
13 proceeding on various issues related to VCHEC's future operation. As Company  
14 Witness Kelly explains, the Company does not oppose this recommendation. Staff has  
15 not proposed disallowance of any capital expenses while these issues are studied, and  
16 particularly given the minimal investment in long-term, life-extending capital projects  
17 planned for the rate years in this proceeding, the Company agrees that this is the most  
18 prudent approach. However, given Staff's and the Sierra Club's concerns about the  
19 economic viability of VCHEC, the Company commits to withhold investment in life-  
20 extending capital projects occurring beyond the rate years in this case until a more long-  
21 term decision about VCHEC's operations and retirement has been made. Until that  
22 decision is made, however, the Company will need to invest in the planned maintenance  
23 capital projects to ensure the safe and reliable operation of the unit in the near term.

1 **Q. Staff Witness Dalton notes Staff's concerns about additional CCR containment**  
2 **facilities at VCHEC, but states Staff does not challenge the prudence of the costs the**  
3 **Company incurred to complete cells 2A and 3B. (Dalton at 7-9) Do you have a**  
4 **response?**

5 A. Yes. The Company is pleased that Staff is not challenging the Company's requested  
6 recovery for the costs to complete cells 2A and 3B. The Company agrees with Staff that,  
7 with the completion of these cells, construction of new or additional CCR containment  
8 facilities at VCHEC is not needed in the near future. As such, the Company will not  
9 invest in future CCR containment facilities unless and until additional capacity is  
10 required. At that time, the Company will set forth the reasonableness and prudence of  
11 those costs.

12 **Q. Does this conclude your pre-filed direct testimony?**

13 A. Yes, it does.

WITNESS REBUTTAL TESTIMONY SUMMARY

Witness: Christopher J. Lee

Title: Manager of Regulation, Regulatory Accounting Department

Summary:

Company Witness Christopher J. Lee responds to the testimony of Commission Staff (“Staff”) related to the proposed Rider S revenue requirement. The Company accepts the corrected grossed-up excess deferred income tax amortization amounts for the 2020 true-up, and accepts the use of the actual 2019 weighted average cost of capital approved by the Commission in the Company’s triennial review proceeding, Case No. PUR-2021-00058, for the calculation of the 2019 True-Up Adjustment. Mr. Lee addresses two minor errors the Company identified in Staff’s calculation of the 2020 Actual Cost True-Up Factor.

The updated Rider S revenue requirement incorporates the return on common equity and capital structure authorized by the Commission in Case No. PUR-2021-00058. The update Rider S revenue requirement is higher than the amount originally requested in the Company’s Application and publicly noticed, and thus the Company agrees with Staff to limit its requested recovery amount to the noticed amounts of \$191.532 million and \$191.292 million for Rate Years 1 and 2, respectively.

**REBUTTAL TESTIMONY  
OF  
CHRISTOPHER J. LEE  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUR-2021-00114**

1 **Q. Please state your name, position with Virginia Electric and Power Company**  
2 **(“Dominion Energy Virginia” or the “Company”), and business address.**

3 A. My name is Christopher J. Lee and I am Manager of Regulation in the Regulatory  
4 Accounting Department at Dominion Energy Virginia. My business address is 120  
5 Tredegar Street, Richmond, Virginia 23219.

6 **Q. Have you previously submitted testimony in this proceeding?**

7 A. Yes, my pre-filed direct testimony on behalf of Dominion Energy Virginia was submitted  
8 to the State Corporation Commission of Virginia (the “Commission”) in this proceeding  
9 on June 8, 2021.

10 **Q. What is the purpose of your rebuttal testimony in this proceeding?**

11 A. My rebuttal testimony addresses the pre-filed testimony of Commission Staff (“Staff”)  
12 Witnesses Brad Gerner and Phillip M. Gereaux related to the proposed revenue  
13 requirement for Rider S.

14 **Q. Are you sponsoring an exhibit in your rebuttal testimony?**

15 A. Yes. Company Exhibit No. \_\_\_, CJL, consisting of Rebuttal Schedules 1 and 2, was  
16 prepared under my supervision and direction and is accurate and complete to the best of  
17 my knowledge and belief. Rebuttal Schedule 1 replaces my Direct Schedule 1, which I  
18 sponsored with my pre-filed direct testimony in this case, and provides an updated

1 revenue requirement for Rider S. Due to the changes in ROE and capital structure, I am  
2 also sponsoring updated versions of Filing Schedules 3 through 5 and Filing Schedule 8,  
3 which are collectively attached to my rebuttal testimony as Rebuttal Schedule 2.

4 **Q. What updates has the Company made to the Rider S revenue requirement in**  
5 **response to Staff's testimony?**

6 A. The Company has updated the revenue requirement to reflect the following changes and  
7 corrections:

8 First, the Company accepts the corrected grossed-up excess deferred income tax  
9 ("EDIT") amortization amounts for the 2020 true-up, as incorporated by Staff Witness  
10 Gerner in his revenue requirement calculations (Gerner at 3, 5).

11 Second, the Company accepts the use of the actual 2019 weighted average cost of capital  
12 approved by the Commission in its Final Order dated November 18, 2021, in the  
13 Company's triennial review proceeding, Case No. PUR-2021-00058, for the calculation  
14 of the 2019 True-Up Adjustment, as incorporated by Staff Witness Gerner (Gerner at 3).

15 Lastly, my rebuttal testimony also notes the impact to the Rider S revenue requirement of  
16 the return on common equity ("ROE") and capital structure authorized by the  
17 Commission in Case No. PUR-2021-00058.



1 **Q. Has the Company identified any adjustments or corrections to the Staff's direct**  
2 **testimonies or exhibits?**

3 A. Yes. The Company identified two minor errors in the Staff's calculation of the 2020  
4 Actual Cost True-up Factor. In my updated revenue requirement calculation, I have  
5 made the following adjustments:

- 6 1. Corrected the Virginia jurisdictional factor applied to the Company's rate base  
7 items as of December 31, 2019; and
- 8 2. Corrected a formula error in the calculation of the 2019 True-Up for Unbilled  
9 Correction (net of ADIT).

10 The impact of these items results in an increase in the 2020 Actual Cost True-up Factor  
11 of approximately \$5,000.

12 **Q. What revenue requirement is the Company proposing for Rider S in its rebuttal**  
13 **testimony?**

14 A. Incorporating the updates noted above, the Company has calculated a revenue  
15 requirement for Rate Years 1 and 2 of \$193.004 million and \$192.538 million,  
16 respectively. These represent increases of \$1.472 million and \$1.246 million for Rate  
17 Years 1 and 2 as compared to the revenue requirements presented in the Company's  
18 Application and my pre-filed direct testimony, respectively.

19 **Q. Is the Company requesting to fully recover the updated Rider S revenue**  
20 **requirement calculated in your Rebuttal Schedule 1 in this current proceeding?**

21 A. No. The revenue requirement as provided in my Rebuttal Schedule 1 is above the  
22 amount originally requested in the Company's Application and publicly noticed, and thus

1 the Company will limit its requested recovery amount to the noticed amounts of \$191.532  
2 million and \$191.292 million for Rate Years 1 and 2, respectively,. consisting of an  
3 Actual Cost True-up Factor of (\$1.425) million and an increased Projected Cost  
4 Recovery Factor of \$192.957 million for Rate Year 1, and a Projected Cost Recovery  
5 Factor of \$191.292 million for Rate Year 2. Any difference between these amounts and  
6 what is approved by the Commission can be addressed as part of the true-up in a future  
7 filing, as noted by Staff Witness Gerner (Gerner at 4 n.4).

8 **Q. Does this conclude your rebuttal testimony?**

9 **A. Yes, it does.**

**Virginia Electric and Power Company**  
**Revenue Requirement for the Virginia City Hybrid Energy Center Project**  
**For the Rate Years April 01, 2022 to March 31, 2023 and April 01, 2023 to March 31, 2024**

<u>Line</u> <u>No.</u>		<u>Rate Year 1</u>	<u>Rate Year 2</u>
1	Projected Cost Recovery Factor	\$ 194,429 \$	192,538
2	Actual Cost True-up Factor	<u>\$ (1,425) \$</u>	<u>-</u>
3	Total Revenue Requirement	\$ 193,004 \$	192,538

**Virginia Electric Power Company**  
**Revenue Requirement for the Virginia City Hybrid Energy Center Project**  
**Projected Cost Recovery Factor**

**For the Rate Years April 01, 2022 to March 31, 2023 and April 01, 2023 to March 31, 2024**

Line No.		<u>Rate Year 1</u>	<u>Rate Year 2</u>
1	Rate Base	\$ 1,054,690	\$ 1,013,102
2	Weighted Average Cost of Capital	7.4185%	7.4185%
3	Net Operating Income	\$ 78,242	\$ 75,157
	Less Interest Expense on Debt		
4	Weighted Average Cost of Debt	2.0017%	2.0017%
5	Weighted Average Debt Component of JDC Expense	0.0109%	0.0109%
6	Total Weighted Average Cost of Debt	2.0126%	2.0126%
7	Average Rate Base	\$ 1,054,690	\$ 1,013,102
8	Revenue Requirement - Interest Expense on Debt	\$ 21,226	\$ 20,389
9	Net Income	\$ 57,016	\$ 54,768
10	Income Tax Gross-up Factor	74.37%	74.37%
11	Revenue Requirement - Net Income Including Income Taxes	\$ 76,660	\$ 73,638
12	Revenue Requirement - Financing Costs	\$ 97,887	\$ 94,027
	<b>Operating Expenses</b>		
13	Total O&M Expenses	\$ 56,984	\$ 57,935
14	EDIT Amortization	\$ 312	\$ 306
15	Depreciation Related Deferral EDIT Amortization	\$ -	\$ -
16	Depreciation Expense	\$ 39,245	\$ 40,271
17	Revenue Requirement - Operating Expenses	\$ 96,542	\$ 98,512
18	Revenue Requirement - Projected Cost Recovery Factor	\$ 194,429	\$ 192,538

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Virginia Electric and Power Company  
 Virginia City Hybrid Energy Center Project  
 Actual Cost True-Up Factor of the Calendar Year Ending December 31, 2020  
 For the Rate Year April 01, 2022 to March 31, 2023  
 (000s)

Line No.	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Total
1	1,970,950	1,971,418	1,971,628	1,971,722	1,973,695	1,975,029	1,977,684	1,973,695	1,973,695	1,976,697	1,978,883	1,979,521	1,979,959	
2	(321,424)	(325,219)	(333,101)	(336,710)	(340,021)	(344,564)	(348,478)	(352,377)	(356,243)	(360,103)	(364,013)	(367,982)	(371,922)	
3	22,774	21,809	21,778	21,711	21,589	21,524	21,689	21,689	21,689	21,689	21,689	21,617	21,524	
4	27,271	27,941	28,852	29,174	29,306	29,300	29,300	29,300	29,300	29,300	29,300	29,300	29,300	
5	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	
6	(11,166)	(11,205)	(11,242)	(11,279)	(11,315)	(11,351)	(11,387)	(11,423)	(11,459)	(11,495)	(11,531)	(11,567)	(11,603)	
7	(35,478)	(35,595)	(35,712)	(35,829)	(35,946)	(36,064)	(36,181)	(36,301)	(36,420)	(36,540)	(36,660)	(36,780)	(36,901)	
8	(292,537)	(293,973)	(295,409)	(296,845)	(298,281)	(299,717)	(301,153)	(302,589)	(304,025)	(305,461)	(306,897)	(308,333)	(309,769)	
9	(2,545)	423	423	423	423	423	423	423	423	423	423	423	423	
10	1,385,323	1,389,422	1,393,521	1,397,620	1,401,719	1,405,818	1,409,917	1,414,016	1,418,115	1,422,214	1,426,313	1,430,412	1,434,511	
11	80,852,026	81,256,526	81,661,026	82,065,526	82,470,026	82,874,526	83,279,026	83,683,526	84,088,026	84,492,526	84,897,026	85,301,526	85,706,026	
12	1,120,131	1,137,951	1,155,771	1,173,591	1,191,411	1,209,231	1,227,051	1,244,871	1,262,691	1,280,511	1,298,331	1,316,151	1,333,971	
13	2,058	1,378	689	-	-	-	-	-	-	-	-	-	-	
14	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	
15	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	
16	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	
17	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	
18	(829)	(615)	(401)	-	-	-	-	-	-	-	-	-	-	
19	1,117,196	1,134,635	1,152,074	1,169,513	1,186,952	1,204,391	1,221,830	1,239,269	1,256,708	1,274,147	1,291,586	1,309,025	1,326,464	
20	1,125,916	1,132,783	1,139,650	1,146,517	1,153,384	1,160,251	1,167,118	1,173,985	1,180,852	1,187,719	1,194,586	1,201,453	1,208,320	
21	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	0.51%	
22	6,875	6,917	6,959	6,894	6,836	6,778	6,720	6,662	6,604	6,546	6,488	6,430	6,372	
23	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	
24	1,888	1,900	1,894	1,888	1,882	1,876	1,870	1,864	1,858	1,852	1,846	1,840	1,834	
25	4,986	5,017	5,000	4,985	4,972	4,959	4,946	4,935	4,925	4,916	4,908	4,901	4,894	
26	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	74,378	
27	6,704	6,745	6,723	6,703	6,685	6,667	6,650	6,635	6,622	6,610	6,599	6,590	6,582	
28	4,928	5,190	6,047	6,582	6,190	6,006	5,772	7,294	8,012	8,012	12,732	6,588	6,324	
29	13,520	14,835	14,663	15,173	14,738	14,551	14,245	15,798	16,499	16,499	21,203	15,051	14,754	
30	948	946	946	(912)	(912)	(912)	(912)	(912)	(912)	(912)	(912)	(912)	(912)	
31	14,466	15,782	15,610	14,881	14,446	14,239	13,913	15,486	16,187	16,187	20,891	14,739	14,442	
32	18,697	16,909	14,328	12,158	16,310	20,990	19,087	13,744	11,909	13,321	11,909	13,321	18,436	
33	(4,330)	(1,127)	1,282	2,763	1,001	(4,070)	(7,057)	(9,600)	2,444	8,982	1,417	(3,995)	(9,651)	
34	(12)	(27)	(27)	(15)	(9)	(5)	(30)	(61)	(64)	(32)	(2)	(9)	(28)	
35	(4,242)	(1,154)	1,253	2,688	1,597	(2,079)	(7,087)	(9,661)	2,890	8,951	1,415	(4,004)	(9,651)	
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Under (Over) Recovery of Actual Costs during 2017 (net of ADIT)  
 Under (Over) Recovery of Actual Costs during 2018 (net of ADIT)  
 Under (Over) Recovery of Actual Costs during 2019 (net of ADIT)  
 Correction to 2019 True-Up for Unbilled Correction (net of ADIT)  
 Deferral EBIT (depreciation)  
 Virginia Jurisdictional Rate Base  
 Two-Month Average Virginia Jurisdictional Rate Base  
 Weighted Average Cost of Capital  
 Net Operating Income  
 Weighted Average Cost of Debt  
 Revenue Requirement - Interest Expense on Debt  
 Net Income  
 Income Tax Gross-up Factor - Actual  
 Revenue Requirement - Net Income Including Income Taxes  
 Revenue Requirement - Operating Expenses for 2020 (No Juris)  
 Revenue Requirement - PCUF for 2020  
 Revenue Requirement - ACTUF Requested for Recovery in 2020  
 Total Actual Revenue Requirement for 2020  
 Revenues Recovered from Virginia Jurisdictional Customers in 2020  
 Under (Over) Recovery of Actual Costs during 2020  
 Financing Costs for 2020 Related to the 2020 Calendar-Year ACTUF  
 Revenue Requirement for the 2020 ACTUF  
 Requested for Recovery in the April 01, 2022 - March 31, 2023 Rate Year  
 Correction to 2019 ACTUF Factor for Unbilled Revenue  
 Total ACTUF Revenue Requirement

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Virginia Electric and Power Company  
 Virginia City Hybrid Energy Center Project  
 Financing Costs for 2020 Related to the 2020 Calendar Year Actual Cost True-Up Factor  
 For the Rate Year April 01, 2022 to March 31, 2023  
 (000's)

Line No.		Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Total
1	Under (Over) Recovery of Actual Costs during 2020	\$ (4,230)	\$ (1,127)	\$ 1,283	\$ 2,703	\$ 1,601	\$ (2,070)	\$ (7,057)	\$ (3,600)	\$ 2,444	\$ 8,982	\$ 1,417	\$ (3,995)	
2	ADIT on the Under (Over) Recovery of Actual Costs during 2020	3,084	289	(328)	(693)	(410)	531	1,808	913	(676)	(2,307)	(363)	1,024	
3	Rate Base Effect of Under (Over) Recovery of Actual Costs during 2020	(3,146)	(838)	953	2,010	1,190	(1,540)	(5,248)	(2,678)	1,818	6,680	1,054	(2,971)	
4	Cumulative Rate Base Effect of Under (Over) Recovery of Actual Costs during 2020	(3,146)	(3,985)	(3,031)	(1,021)	169	(1,370)	(6,619)	(9,296)	(7,479)	(798)	256	(2,715)	
4	Two-Month Average Regulatory Asset Balance (Net of ADIT)	(1,573)	(3,565)	(3,508)	(2,026)	(426)	(600)	(3,995)	(7,957)	(6,367)	(4,136)	(271)	(1,230)	
5	Overall Cost of Capital - Grossed up for Taxes	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	0.7632%	
6	Financing Costs for 2020 Related to the 2020 Calendar Year ACTUF	\$ (121)	\$ (272)	\$ (272)	\$ (151)	\$ (31)	\$ (51)	\$ (300)	\$ (641)	\$ (641)	\$ (332)	\$ (72)	\$ (69)	\$ (2,688)

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Virginia Electric and Power Company  
 Virginia City Hybrid Energy Center Project Rate Base  
 For December 2019 Through March 2023  
 (000's)

Line No.	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
1	1,970,950	1,971,164	1,971,418	1,971,628	1,971,722	1,972,183	1,972,684	1,973,695	1,975,029	1,976,692	1,978,083	1,979,521	1,979,959
2	(321,424)	(325,323)	(329,229)	(333,101)	(336,710)	(340,564)	(344,564)	(348,718)	(352,772)	(356,723)	(360,103)	(363,982)	(367,982)
3	22,774	21,809	21,778	21,778	21,711	21,711	21,711	21,589	21,650	21,689	21,689	21,617	21,524
4	22,271	22,641	22,852	22,944	23,174	23,206	23,300	23,309	22,961	22,684	22,261	22,399	22,650
5	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476	32,476
6	(35,478)	(35,595)	(35,712)	(35,829)	(35,946)	(36,064)	(36,183)	(36,301)	(36,420)	(36,540)	(36,660)	(36,780)	(36,901)
7	(292,532)	(293,931)	(295,330)	(296,734)	(298,183)	(299,633)	(301,083)	(302,533)	(303,983)	(305,433)	(306,883)	(308,333)	(309,783)
8	(2,545)	423	423	423	423	423	423	423	423	423	423	423	423
9	1,385,323	1,383,422	1,379,385	1,375,306	1,371,451	1,367,483	1,363,619	1,360,085	1,357,112	1,354,109	1,351,518	1,347,795	1,343,844
10	80,857,026	82,256,026	83,655,026	85,054,026	86,453,026	87,852,026	89,251,026	90,650,026	92,049,026	93,448,026	94,847,026	96,246,026	97,645,026
11	1,120,131	1,137,951	1,134,629	1,131,275	1,128,104	1,124,940	1,121,661	1,118,755	1,116,309	1,113,838	1,111,708	1,108,645	1,105,395
12	2,068	1,378	689	-	-	-	-	-	-	-	-	-	-
13	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)	(2,358)
14	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)
15	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869
16	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)
17	(923)	(615)	(308)	-	-	-	-	-	-	-	-	-	-
18	1,117,196	1,134,635	1,130,932	1,127,196	1,124,221	1,121,154	1,118,172	1,115,462	1,113,112	1,110,938	1,109,004	1,106,138	1,103,084
19	1,343,844	1,357,681	1,355,168	1,346,539	1,342,983	1,339,507	1,336,743	1,334,739	1,332,288	1,330,641	1,328,346	1,326,771	1,325,777
20	82,256,026	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526	81,956,526
21	1,105,395	1,112,708	1,110,648	1,109,577	1,100,662	1,097,813	1,097,187	1,093,905	1,091,897	1,092,186	1,091,977	1,073,852	1,070,169
22	(589)	(393)	(196)	-	-	-	-	-	-	-	-	-	-
23	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)	(2,849)
24	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869	1,869
25	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)
26	-	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)	(2,715)
27	1,103,084	1,107,878	1,106,015	1,099,140	1,096,443	1,093,852	1,093,463	1,090,419	1,088,648	1,088,174	1,089,203	1,071,315	1,067,870

Virginia Electric and Power Company  
 Virginia City Hybrid Energy Center Project Rate Base  
 For December 2019 Through March 2023  
 (000's)

Line	100	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sept-22	Oct-22	Nov-22	Dec-22
1	Capital Expenditures	\$ 1,990,580	\$ 1,990,605	\$ 1,990,500	\$ 1,991,220	\$ 1,991,840	\$ 1,992,510	\$ 1,993,150	\$ 1,993,570	\$ 1,994,720	\$ 1,995,670	\$ 1,997,095	\$ 1,998,797	\$ 1,999,751
2	Accumulated Depreciation	(415,453)	(419,545)	(423,628)	(427,712)	(431,797)	(435,883)	(439,971)	(444,060)	(448,150)	(452,243)	(456,339)	(460,438)	(464,539)
3	Fuel Inventory	26,009	25,873	24,554	21,803	19,364	18,379	18,596	17,850	17,458	17,674	17,891	16,935	16,658
4	Materials & Supplies Inventory	23,066	23,110	23,153	23,197	23,241	23,285	23,329	23,373	23,417	23,462	23,506	23,551	23,595
5	Asset Retirement Cost (ARC)	(12,089)	(12,159)	(12,228)	(12,298)	(12,368)	(12,437)	(12,507)	(12,576)	(12,646)	(12,715)	(12,785)	(12,854)	(12,924)
6	ARC Accumulated Depreciation	(56,396)	(56,561)	(56,726)	(56,894)	(57,062)	(57,229)	(57,398)	(57,566)	(57,736)	(57,905)	(58,076)	(58,246)	(58,418)
7	Asset Retirement Obligation (ARO)	(300,806)	(301,160)	(301,521)	(301,881)	(302,242)	(302,602)	(302,962)	(303,322)	(303,682)	(304,041)	(304,401)	(304,760)	(305,119)
9	Cash Working Capital	423	423	423	423	423	423	423	423	423	423	423	423	423
10	Subtotal	\$ 1,305,777	\$ 1,301,037	\$ 1,295,378	\$ 1,288,311	\$ 1,281,853	\$ 1,276,898	\$ 1,273,114	\$ 1,268,145	\$ 1,264,258	\$ 1,260,777	\$ 1,257,768	\$ 1,253,860	\$ 1,249,880
11	Demand Allocation Factor	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%	81.9565%
12	Subtotal - Virginia Jurisdiction	\$ 1,070,189	\$ 1,066,285	\$ 1,061,647	\$ 1,055,804	\$ 1,050,562	\$ 1,046,501	\$ 1,043,399	\$ 1,039,327	\$ 1,036,142	\$ 1,033,289	\$ 1,030,823	\$ 1,027,619	\$ 1,024,358
13	Under (Over) Recovery of Actual Costs during 2019 (net of ADIT)	(712)	(475)	(237)	(0)	-	-	-	-	-	-	-	-	-
14	Correction to 2019 True-Up for Unbilled Correction (net of ADIT)	1,869	1,869	1,869	1,869	1,713	1,558	1,402	1,246	1,090	935	779	623	467
15	Deferral EDIT (depreciation)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)	(741)
16	Under (Over) Recovery of Actual Costs during 2020 (net of ADIT)	(2,715)	(2,715)	(2,715)	(2,715)	(2,489)	(2,263)	(2,036)	(1,810)	(1,584)	(1,358)	(1,131)	(905)	(679)
17	Virginia Jurisdictional Rate Base	\$ 1,067,870	\$ 1,064,123	\$ 1,059,822	\$ 1,054,767	\$ 1,049,045	\$ 1,045,055	\$ 1,042,024	\$ 1,038,022	\$ 1,034,907	\$ 1,031,125	\$ 1,028,779	\$ 1,026,596	\$ 1,023,405

Line	100	Dec-21	Jan-22	Feb-22	Mar-22	13-Month Average for PCDF - Rate Year 1
18	Capital Expenditures	\$ 1,990,751	\$ 1,999,796	\$ 2,000,591	\$ 2,001,611	
19	Accumulated Depreciation	(464,539)	(468,641)	(472,744)	(476,849)	
20	Fuel Inventory	16,658	16,555	16,513	16,373	
21	Materials & Supplies Inventory	23,595	23,641	23,686	23,732	
22	Asset Retirement Cost (ARC)	(12,924)	(12,993)	(13,063)	(13,132)	
23	ARC Accumulated Depreciation	(58,418)	(58,589)	(58,762)	(58,935)	
24	Asset Retirement Obligation (ARO)	(305,119)	(305,861)	(306,244)	(306,627)	
25	Cash Working Capital	423	423	423	423	
27	Subtotal	\$ 1,249,880	\$ 1,244,783	\$ 1,240,854	\$ 1,237,050	
28	Demand Allocation Factor	81.9565%	81.9565%	81.9565%	81.9565%	
29	Subtotal - Virginia Jurisdiction	\$ 1,024,358	\$ 1,020,181	\$ 1,016,961	\$ 1,013,843	
30	Under (Over) Recovery of Actual Costs during 2019 (net of ADIT)	-	-	-	-	935
31	Correction to 2019 True-Up for Unbilled Correction (net of ADIT)	467	312	156	-	
32	Deferral EDIT (depreciation)	(741)	(741)	(741)	(741)	
33	Under (Over) Recovery of Actual Costs during 2020 (net of ADIT)	(679)	(453)	(226)	0	(1,358)
34	Virginia Jurisdictional Rate Base	\$ 1,023,405	\$ 1,019,299	\$ 1,016,149	\$ 1,013,102	

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Virginia Electric and Power Company  
Virginia City Hybrid Energy Center Project Actual Operation Costs  
For The Period January, 2020 through December, 2020  
(000's)

Line No.	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Total 2020
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30	\$ 6,493.5	\$ 8,028.7	\$ 7,854.2	\$ 8,002.1	\$ 7,524.8	\$ 7,301.9	\$ 6,956.0	\$ 8,867.5	\$ 9,740.8	\$ 15,479.0	\$ 8,021.2	\$ 7,687.8	\$ 101,957.6
31	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>	<u>82,256.2%</u>
32	\$ 5,341.3	\$ 6,604.1	\$ 6,450.6	\$ 6,582.3	\$ 6,185.6	\$ 6,006.3	\$ 5,721.7	\$ 7,294.1	\$ 8,012.4	\$ 12,732.4	\$ 6,598.0	\$ 6,323.7	\$ 83,866.4
33	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
34	\$ (413.8)	\$ (413.8)	\$ (413.8)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,241.3)
35	<u>\$ 4,927.6</u>	<u>\$ 6,190.4</u>	<u>\$ 6,046.8</u>	<u>\$ 6,582.3</u>	<u>\$ 6,189.6</u>	<u>\$ 6,006.3</u>	<u>\$ 5,721.7</u>	<u>\$ 7,294.1</u>	<u>\$ 8,012.4</u>	<u>\$ 12,732.4</u>	<u>\$ 6,598.0</u>	<u>\$ 6,323.7</u>	<u>\$ 82,625.1</u>

Virginia Electric and Power Company  
Virginia City Hybrid Energy Center Project Projected Operation Costs  
For the Rate Year April, 2022 to March, 2023  
(000's)

Line No.	Description	Month												Total Rate Year	Demand Allocation Factor	Virginia Jurisdiction Total		
		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23					
1	Labor (Salaries, OT, Incentive)	167.2	167.7	168.2	168.7	169.2	169.8	170.3	170.8	171.3	171.8	172.3	172.9	173.4	173.9	2,040.3	81.9565%	-
2	Payroll Taxes	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	834.4	81.9565%	1,672.2
3	Benefits	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	10,895.9	81.9565%	8,933.2
4	Arc Flash / Safety Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
5	Vehicles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
6	Training Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
7	Travel Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
8	VPDES Water & Waste Permit Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
9	Environmental Operating Permits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
10	Insulation / Scaffolding Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
11	Ash Handling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
12	Testing Service Coal Sampling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
13	Limestone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
14	Hydrated Lime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
15	Other Chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
16	Utilities - Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
17	Ammonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
18	Utilities - Water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
19	Materials / Supplies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
20	Contractor / Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
21	Outage Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
22	Other Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
23	Incremental Sales & Use Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
24	AKO Accretion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
25	ARC Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
26	Property Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
27	REC sales revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	(853.1)
28	Rate Year O&M	4,186.6	4,182.7	4,193.6	4,349.0	4,227.9	5,971.0	14,980.3	9,080.6	4,548.8	4,693.0	4,680.6	4,436.0	4,436.0	69,529.9	81.9565%	56,984.3	
29	Deferral EBIT amortization (depreciation)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9565%	-
30	EDIT amortization	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	380.9	81.9565%	317.2	
31	Depreciation Expense	3,948.2	3,950.6	3,952.5	3,954.6	3,956.4	3,958.2	3,960.0	3,961.8	3,963.6	3,965.4	3,967.2	3,969.0	3,970.8	47,885.8	81.9565%	39,745.5	
32	Rider S Total	8,166.3	8,164.9	8,177.7	8,335.2	8,219.0	9,966.8	16,979.6	13,081.3	8,550.8	8,807.5	8,795.7	8,551.8	8,551.8	117,796.6	81.9565%	96,542.0	

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Virginia Electric and Power Company  
 Virginia City Hybrid Energy Center Project Projected Operation Costs  
 For the Rate Year April, 2023 to March, 2024  
 (000's)

Line No.		Apr-23	May-23	June-23	July-23	Aug-23	Sept-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total 2023-24	Demand Allocation Factor	Virginia Jurisdiction Total
1	Labor (Salaries, OT, Incentive)	173.4	173.9	174.4	175.0	175.0	175.5	176.0	176.6	177.1	177.6	168.8	168.8	2,084.4	81.9565%	
2	Payroll Taxes	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	834.4	81.9565%	
3	Benefits	865.7	865.7	865.7	865.7	865.7	865.7	865.7	865.7	865.7	865.7	820.7	820.7	10,253.1	81.9565%	8,403.1
4	Arc Flash / Safety Equipment		(14.8)	(2.3)	(174.2)	(77.2)				(197.1)	(307.5)	(205.5)	(232.4)	(1,211.0)	81.9565%	(992.5)
5	Vehicles														81.9565%	
6	Training Expenses														81.9565%	
7	Travel Expenses														81.9565%	
8	VPDES Water & Waste Permit Fees														81.9565%	
9	Environmental Operating Permits														81.9565%	
10	Insulation / Scaffolding Services														81.9565%	
11	Ash Hauling														81.9565%	
12	Testing Service Coal Sampling														81.9565%	
13	Limestone														81.9565%	
14	Hydrated Lime														81.9565%	
15	Other Chemicals														81.9565%	
16	Utilities - Power														81.9565%	
17	Ammonia														81.9565%	
18	Utilities - Water														81.9565%	
19	Materials / Supplies														81.9565%	
20	Contractor / Outside Services														81.9565%	
21	Outage Expenses														81.9565%	
22	Other Expenses														81.9565%	
23	Incremental Sales & Use Tax														81.9565%	
24	ARO Accretion														81.9565%	
25	ARC Depreciation														81.9565%	
26	Property Taxes														81.9565%	
27	REC sales revenue														81.9565%	
28	Rate Year O&M	4,169.2	4,188.6	4,179.0	4,383.3	4,365.7	5,951.2	16,191.3	9,051.1	4,594.8	4,612.0	4,542.3	4,461.0	70,689.5		57,934.7
29	Deferral EBIT amortization (depreciation)															
30	EDIT amortization	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	28.3	28.3	28.3	373.8	81.9565%	306.3
31	Depreciation Expense	4,085.0	4,086.3	4,087.7	4,088.5	4,090.9	4,092.8	4,095.7	4,099.2	4,101.2	4,101.3	4,102.9	4,105.0	49,136.5	81.9565%	40,270.6
32	Rider S Total	8,286.3	8,307.0	8,296.7	8,503.9	8,488.7	10,076.1	20,319.2	13,182.5	8,726.1	8,741.6	8,673.5	8,594.3	120,199.8		98,511.6

4/13/2024

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**Virginia Electric and Power Company**  
**Virginia City Hybrid Energy Center Project**  
**Cash Working Capital**  
**For Calendar Year 2020**  
 (000's)

Line No.	Bear Garden Actual	Average Daily Amount	Expense (Lead) Lag Days	Revenue Lag	Net (Lead) Lag Days	Working Capital (Provided) Required
<b>Operations and Maintenance Expense</b>						
1			(26.90)	43.21	16.30	
2			(32.12)	43.21	11.08	
3			(43.65)	43.21	(0.44)	
<b>Depreciation Expense</b>						
4	47,041.10	128.88	-	43.21	43.21	5,568.25
5	-	-	-	43.21	43.21	-
<b>State/Federal Income Taxes</b>						
6	20,720.52	56.77	(37.88)	43.21	5.33	302.58
7	4,162.23	11.40	-	43.21	43.21	492.68
<b>Taxes Other Than Income Taxes</b>						
8	10,761.60	29.48	(111.96)	43.21	(68.75)	(2,027.04)
9			(27.26)	43.21	15.95	
<b>ARO</b>						
10	1,422.10	3.90	(43.21)	43.21	-	-
11	444.04	1.22	(43.21)	43.21	-	-
12	27,200.94	74.52	(90.93)	43.21	(47.73)	(3,556.93)
13	-	-	(43.21)	43.21	-	-
14	674.99	1.85	(43.21)	43.21	-	-
15	96,574.68	264.59	(43.21)	43.21	-	-
16	251,907.46					1,461.71
17	9,492.66	26.01	(39.93)	-	(39.93)	(1,038.49)
18						<u>423.21</u>

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**Actual Cost of Capital and Capital Structure**

As of December 31, 2020

Line No.	Description	Amount	Percent	Annual Cost	Embedded Cost	Weighted Cost
1	Total long-term debt	\$ 13,026,283,483	46.223%	\$ 563,000,609	4.322%	1.998%
2	Short-term debt	<u>400,884,382</u>	<u>1.423%</u>	<u>1,093,952</u>	<u>0.273%</u>	<u>0.004%</u>
3	Total debt	13,427,167,865	47.646%	564,094,561	4.595%	2.002%
4	Total preferred stock	-	<u>0.000%</u>	-	<u>0.000%</u>	<u>0.000%</u>
5	Common stock	5,737,401,834	20.359%		10.200%	2.077%
6	Other paid-in capital	1,112,875,284	3.949%		10.200%	0.403%
7	Retained earnings	7,759,107,191	27.533%		10.200%	2.808%
8	AOCI	(52,423,500)	-0.186%		10.200%	-0.019%
9	Adjustments	<u>46,482,221</u>	<u>0.165%</u>		<u>10.200%</u>	<u>0.017%</u>
10	Total common equity (excl AOCI)	14,603,443,030	51.820%		10.200%	5.286%
Job development tax credits						
11	Allocation: debt	71,067,392	0.252%		4.322%	0.011%
12	Allocation: preferred stock	-	0.000%		0.000%	0.000%
13	Allocation: equity	79,671,889	<u>0.283%</u>		<u>10.200%</u>	<u>0.029%</u>
14	Total Job development tax credits	150,739,281	0.535%		7.429%	0.040%
15	Total Capital	<u>\$ 28,181,350,176</u>	<u>100.000%</u>			<u>7.3270%</u>

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**VIRGINIA ELECTRIC AND POWER COMPANY**  
**Actual Cost of Capital and Capital Structure**  
**As of December 31, 2020**

Line No.	Description	Amount	Percent	Annual Cost	Embedded Cost	Weighted Cost
1	Total long-term debt	\$ 13,026,283,483	46.310%	\$ 563,000,809	4.322%	2.002%
2	Short-term debt (13-month average)	<u>347,887,714</u>	<u>1.237%</u>	<u>925,578</u>	<u>0.268%</u>	<u>0.003%</u>
3	Total debt	13,374,171,197	47.547%	563,928,187	4.217%	2.005%
4	Total preferred stock	<u>-</u>	<u>0.000%</u>	<u>-</u>	<u>0.000%</u>	<u>0.000%</u>
5	Common stock	5,737,401,834	20.397%		10.350%	2.111%
6	Other paid-in capital	1,112,875,284	3.956%		10.350%	0.409%
7	Retained earnings	7,759,107,191	27.585%		10.350%	2.855%
8	AOCI	(52,423,500)	-0.186%		10.350%	-0.019%
9	Adjustments	<u>46,482,221</u>	<u>0.165%</u>		<u>10.350%</u>	<u>0.017%</u>
10	Total common equity	14,603,443,030	51.917%		10.350%	5.373%
	Job development tax credits					
11	Allocation: debt	71,067,392	0.253%		4.322%	0.011%
12	Allocation: preferred stock	-	0.000%		0.000%	0.000%
13	Allocation: equity	<u>79,671,889</u>	<u>0.283%</u>		<u>10.350%</u>	<u>0.029%</u>
14	Total Job development tax credits	150,739,281	0.536%		7.508%	0.040%
15	Total Capital	<u>\$ 28,128,353,508</u>	<u>100.000%</u>			<u>7.4185%</u>



**Application of Virginia Electric and Power Company,  
For Revision of Rate Adjustment Clause:  
Rider S, Virginia City Hybrid Energy Center, for the Rate Years Commencing  
April 1, 2022 and April 1, 2023**

**Filing Schedule 3**

**Capital Structure and Cost of Capital Statement**

*Instructions: This schedule shall show the amount of each capital component per balance sheet, the amount for ratemaking purposes, the percentage weight in the capital structure, and the component cost and weighted cost, using the format in Form Schedule 3. The information shall be provided for the test period, the four prior fiscal years, and on a 13-month average or five-quarter average basis for the test period. The data shall be provided for the entity whose capital structure was approved for use in the applicant's last rate case.*

See attached Filing Schedule 3 for the 12 months ended December 31, 2020, with the weighted average cost of capital calculated using the currently authorized ROE of 9.35%.



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**VIRGINIA ELECTRIC AND POWER COMPANY**  
**CAPITAL STRUCTURE AND COST OF CAPITAL STATEMENT - PER BOOKS AND AVERAGE**  
**12 Months Ended December 31, 2020**

Capital Structure and Cost of Capital Statement	Test Period <u>2020</u>	13-Month Average <u>2020</u>
<b>A. Capital Structure Per Balance Sheet (\$000):</b>		
Short-Term Debt	425,070	
Customer Deposits	113,790	
Other Current Liabilities	2,320,829	
Long-Term Debt*	13,687,681	
Preferred & Preference Stock	0	
Common Equity	14,556,961	
Investment Tax Credits	150,739	
Accum. Deferred Income Taxes	2,628,014	
Other Deferred Credits	9,803,577	
 Total Capitalization	 43,686,661	
 <b>B. Capital Structure for Ratemaking Purpose (\$000):</b>		
Short-Term Debt **	347,888	347,888
Long-Term Debt	13,026,283	12,270,980
Preferred Stock	0	0
 Common Equity (excluding AOCI)	 14,609,384	 14,201,052
AOCI	-52,423	-58,447
Adjustments	46,482	19,277
Total Equity (adjusted)	14,603,443	14,161,882
 Investment Tax Credits	 150,739	 114,023
 Total Capitalization	 28,128,354	 26,894,773
 <b>C. Capital Structure Weights for Ratemaking Purpose (%):</b>		
Short-Term Debt	1.237	1.294
Long-Term Debt	46.310	45.626
Preferred Stock	0.000	0.000
Common Equity	51.917	52.657
Investment Tax Credits	0.536	0.424
 Total Capitalization	 100.000	 100.000
 <b>D. Component Capital Cost Rates (%):</b>		
Short-Term Debt	0.266	0.273
Long-Term Debt	4.322	4.322
Preferred Stock	0.000	0.000
Common Equity	9.350	9.350
Investment Tax Credits	6.900	6.900
 <b>E. Component Weighted Cost Rates (%):</b>		
Short-Term Debt	0.003	0.004
Long-Term Debt	2.002	1.972
Preferred Stock	0.000	0.000
Common Equity	4.854	4.923
Investment Tax Credits	0.037	0.029
 Weighted Cost of Capital	 6.896	 6.928

\* Includes securities due within one year.

\*\* For period end year, Short-Term Debt is a thirteen-month average. For average, Short-Term Debt is the Average Daily Balance for the period

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**Application of Virginia Electric and Power Company,  
For Revision of Rate Adjustment Clause:  
Rider S, Virginia City Hybrid Energy Center, for the Rate Years Commencing  
April 1, 2022 and April 1, 2023**

**Filing Schedule 3A**

**Capital Structure and Cost of Capital Statement**

*Instructions: This schedule shall show the amount of each capital component per balance sheet, the amount for ratemaking purposes, the percentage weight in the capital structure, and the component cost and weighted cost, using the format in Form Schedule 3. The information shall be provided for the test period, the four prior fiscal years, and on a 13-month average or five-quarter average basis for the test period. The data shall be provided for the entity whose capital structure was approved for use in the applicant's last rate case.*

See attached Filing Schedule 3A for a reconciliation of capitalization for ratemaking to balance sheet for 2020, with the weighted average cost of capital calculated using the currently authorized ROE of 9.35%.

VIRGINIA ELECTRIC AND POWER COMPANY  
 RECONCILIATION OF CAPITALIZATION FOR RATEMAKING TO BALANCE SHEET  
 (\$000)

	<b>31-Dec-2020</b>
	43,686,661
	28,128,354
	15,558,308

Capital Structure per Balance Sheet  
 Capital Structure for Ratemaking  
 Difference

Reconciliation:

Short-Term Debt: average daily balance vs. end of period balance	77,182
LT Debt - ratemaking vs GAAP	661,397
Customer Deposits	113,790
Other Current Liabilities *	2,320,829
Accumulated Other Comprehensive Income	0
Accumulated Deferred Income Taxes	2,628,014
Other Deferred Credits	9,803,577
ASU 2016.01 NDT R/E Equity Adjustment	0
Other/Rounding	1
Total	15,558,308

\* Excludes securities due within one year of \$350,028

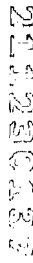
**Application of Virginia Electric and Power Company,  
For Revision of Rate Adjustment Clause:  
Rider S, Virginia City Hybrid Energy Center, for the Rate Years Commencing  
April 1, 2022 and April 1, 2023**

**Filing Schedule 4**

Schedules of Long-Term Debt, Preferred Stock, Investment Tax Credits, and Any Other  
Component of Ratemaking Capital

*Instructions: For each applicable capital component, provide a schedule that shows, for each issue, the amount outstanding, its percentage of the total capital component, and the effective cost rate. This data shall support the amount and cost rate of the respective capital components contained in Schedule 3, consistent with the methodology approved in the applicant's last rate case. In addition, a detailed breakdown of all investment tax credits should be provided that reconciles to the per books balance of investment tax credits. These schedules should reflect disclosure of any associated hedging/derivative instruments, their respective terms and conditions (instrument type, notional amount and association series of debt or preferred stock hedged, period in effect, etc.), and the impact of such instruments on the cost of debt or preferred stock.*

See attached Filing Schedule 4 for responsive information for the 12 months ended December 31, 2020.



**VIRGINIA ELECTRIC AND POWER COMPANY**  
**12 Months Ended December 31, 2020**

**Schedule of Bonds, Mortgages, Other Long-Term Debt,  
and Preferred and Preference Stock,  
and Common Equity for Ratemaking**

There were no outstanding Preferred Securities for VEPCO during 2020.

LETTZ

**Virginia Electric and Power Company**

**Common Equity for Ratemaking - Virginia**  
**As of December 31, 2020**

Description	Amount
Other Paid-In Capital	\$1,112,875,284
Common Stock	\$5,737,401,834
<b>Subtotal - Common Stock</b>	<b>\$6,850,277,118</b>
Retained Earnings	\$7,759,107,191
<b>Subtotal - Retained Earnings</b>	<b>\$7,759,107,191</b>
Accumulated Other Comprehensive Income	-\$52,423,500
Adjustments to AOCI	\$46,482,221
<b>Subtotal - Accumulated Other Comprehensive Income</b>	<b>-\$5,941,279</b>
Other	\$0
<b>Total Common Equity</b>	<b>\$14,603,443,030</b>

Virginia Electric and Power Company  
Long Term Debt  
December 31, 2020

	Issue Date	Maturity Date	Principal Amount Outstanding	Net Amount Outstanding	Coupon Rate	Effective Rate	Annualized Embedded Cost
<u>Mortgage Bonds</u>							
Amortization of LOR - Various							\$21,935
<u>Pollution Control Bonds</u>							
Halifax 10-A	12/23/2010	12/2/2041	\$100,000,000	\$99,757,382	0.450%	0.461%	\$460,357
Wise 09-A	9/30/2009	10/1/2040	\$160,000,000	\$159,391,512	0.750%	0.771%	\$1,228,450
Wise 10-A	11/16/2010	11/1/2040	\$105,000,000	\$104,600,710	1.200%	1.219%	\$1,275,194
Chesapeake 08-A	1/30/2008	2/2/2032	\$30,000,000	\$29,861,457	1.900%	1.964%	\$586,354
Louisa 08-A	11/20/2008	11/1/2035	\$60,000,000	\$59,870,435	1.900%	1.923%	\$1,151,403
Louisa 08-B	11/20/2008	11/1/2035	\$62,000,000	\$61,758,918	0.750%	0.777%	\$479,849
Louisa 08-C	11/20/2008	11/1/2035	\$37,500,000	\$37,405,353	1.800%	1.835%	\$686,465
York 09	5/19/2009	5/2/2033	\$70,000,000	\$69,863,403	1.900%	1.925%	\$1,344,532
<u>Senior Unsecured Notes</u>							
06-B	1/13/2006	1/15/2036	\$550,000,000	\$545,425,609	6.000%	6.086%	\$33,193,800
07-A	5/17/2007	5/15/2037	\$600,000,000	\$594,606,588	6.000%	6.088%	\$36,200,470
07-D	12/4/2007	11/30/2037	\$450,000,000	\$445,971,697	6.350%	6.438%	\$28,712,961
08-B	11/6/2008	11/15/2038	\$700,000,000	\$702,694,992	8.875%	8.831%	\$62,058,094
10-A	9/1/2010	9/1/2022	\$300,000,000	\$299,479,709	3.450%	3.558%	\$10,656,770
12-A	1/12/2012	1/18/2022	\$450,000,000	\$445,527,172	2.950%	3.933%	\$17,523,475
13-B	1/8/2013	1/15/2043	\$500,000,000	\$452,505,789	4.000%	4.790%	\$21,673,160
13-C	5/28/2126	5/29/2146	\$500,000,000	\$495,601,050	2.750%	3.168%	\$15,701,564
13-C Re-open	5/28/2126	5/29/2146	\$200,000,000	\$199,398,908	2.750%	2.984%	\$5,950,796
13-D	8/15/2013	8/17/2043	\$585,000,000	\$598,628,371	4.650%	4.484%	\$26,843,445
14-A	2/7/2014	2/15/2024	\$350,000,000	\$354,422,124	3.450%	3.021%	\$10,706,498
14-B	3/18/2128	4/4/2188	\$400,000,000	\$398,689,799	4.450%	4.473%	\$17,833,421
14-B Re-open	3/18/2128	4/4/2188	\$200,000,000	\$212,044,399	4.450%	4.026%	\$8,536,871
15-A	5/13/2015	5/15/2025	\$350,000,000	\$331,185,836	3.100%	4.477%	\$14,828,020
15-B	5/13/2015	5/15/2045	\$350,000,000	\$338,819,538	4.200%	4.455%	\$15,096,090
16-A	1/14/2016	1/15/2026	\$750,000,000	\$713,156,393	3.150%	4.254%	\$30,337,111
16-B	11/16/2016	11/16/2026	\$400,000,000	\$405,632,380	2.950%	2.689%	\$10,907,466
16-C	11/16/2016	11/15/2046	\$500,000,000	\$469,032,160	4.000%	4.406%	\$20,665,709
17-A	3/16/2017	3/15/2027	\$750,000,000	\$747,725,247	3.500%	3.555%	\$26,583,962
17-B	9/13/2017	9/16/2047	\$550,000,000	\$509,179,061	3.800%	4.271%	\$21,747,119
18-A	3/22/2018	4/3/2028	\$700,000,000	\$704,044,438	3.800%	3.708%	\$26,105,477
18-B	11/28/2018	12/1/2048	\$600,000,000	\$633,245,929	4.600%	4.257%	\$26,957,846
19-A	7/10/2019	7/16/2029	\$500,000,000	\$472,831,298	2.875%	3.625%	\$17,141,617
19-B	12/5/2019	12/1/2049	\$550,000,000	\$413,870,874	3.300%	4.923%	\$20,373,065
20-A	12/15/2020	12/15/2050	\$900,000,000	\$471,636,622	2.450%	5.857%	\$27,622,296
Fort Eustis	12/15/2004	12/16/2024	\$96,338	\$96,338	7.250%	7.250%	\$6,985
Fort Lee	4/1/2005	4/1/2032	\$3,971,607	\$3,971,607	7.250%	7.250%	\$287,942
Fort Story	12/15/2004	12/15/2024	\$46,999	\$46,999	7.250%	7.250%	\$3,407
Restructured Derivatives	8/31/2020	12/31/2023	\$444,303,383	\$444,303,383	0.340%	0.340%	\$1,510,632
			\$13,757,918,327	\$13,026,283,483			\$563,000,609

Effective Cost of Debt

4.322%



VA POWER  
 COST OF CAPITAL AND CAPITAL STRUCTURE  
 EARNINGS TEST  
 SUPPORTING CALCULATIONS  
 As of December 31, 2020

Net Amount OIS for Va (lings - input from Treasury modify reports (reformatting))

SUM of C - H

Sum of J - O

	LTD check	MTNs	Mortgage Bonds	Preferred Capital	Derivative Restructure Debt	Senior Notes	Other PIC	Common Stock	OCI	Adjustments (OCI)	Retained Earnings	Retained Earnings Adjustments	CE check	Pfd Stock	JOC
12/31/2019	12,085,529,684	-	-	623,549,059	-	11,461,980,823	1,112,975,284	5,737,401,834	(29,200,805)	17,817,257	7,188,179,892	-	14,007,073,482	-	11,168,343
1/31/2020	12,087,708,534	-	-	623,595,313	-	11,464,113,221	1,112,975,284	5,737,401,834	(27,764,717)	17,695,483	7,339,078,831	-	14,179,286,715	-	10,963,442
2/29/2020	12,089,891,611	-	-	623,641,628	-	11,468,249,884	1,112,975,284	5,737,401,834	(26,914,727)	17,573,088	7,440,492,875	-	14,291,428,564	-	10,818,542
3/31/2020	12,092,076,766	-	-	623,687,998	-	11,468,362,766	1,112,975,284	5,737,401,834	(74,680,539)	17,451,029	6,800,764,422	-	13,573,612,030	-	10,643,641
4/30/2020	12,094,270,603	-	-	623,734,429	-	11,470,538,174	1,112,975,284	5,737,401,834	(73,523,484)	17,328,057	6,901,958,258	-	13,696,039,849	-	10,488,740
5/31/2020	12,096,469,287	-	-	623,780,918	-	11,472,688,389	1,112,975,284	5,737,401,834	(71,840,680)	16,874,884	7,028,246,279	-	13,823,657,721	-	10,263,839
6/30/2020	12,098,108,230	-	-	623,828,908	-	11,474,725,280	1,112,975,284	5,737,401,834	(70,274,000)	16,852,375	7,183,488,488	-	13,960,353,191	-	10,118,938
7/31/2020	12,100,331,760	-	-	623,878,326	-	11,476,905,434	1,112,975,284	5,737,401,834	(68,628,487)	16,729,615	7,425,476,812	-	14,223,865,059	-	99,944,037
8/31/2020	12,102,574,187	-	-	623,924,247	443,811,756	11,478,905,434	1,112,975,284	5,737,401,834	(68,697,479)	16,606,387	7,656,194,174	-	14,454,300,180	-	12,039,868
9/30/2020	12,547,425,358	-	-	622,232,080	443,929,267	11,481,264,010	1,112,975,284	5,737,401,834	(65,339,269)	16,464,188	7,530,424,988	-	14,331,847,025	-	11,680,865
10/31/2020	12,549,831,260	-	-	622,331,608	444,053,837	11,483,445,714	1,112,975,284	5,737,401,834	(65,778,683)	16,361,577	7,738,074,577	-	14,229,436,978	-	11,515,183
11/30/2020	12,552,243,703	-	-	622,431,258	444,178,643	11,485,635,602	1,112,975,284	5,737,401,834	(64,539,565)	16,238,476	7,738,074,577	-	14,540,050,608	-	150,739,261
12/31/2020	13,026,283,483	-	-	622,598,171	444,303,383	11,969,470,830	1,112,975,284	5,737,401,834	(62,473,500)	46,482,221	7,759,107,191	-	14,603,443,030	-	150,739,261
13-mo avg	12,270,980,056	-	-	623,214,537	170,760,537	11,476,974,961	1,112,975,284	5,737,401,834	(58,446,670)	19,278,548	7,350,774,889	-	14,161,861,885	-	114,022,860
				St & MTNs		11,476,974,961	CS & OPIC	6,850,277,118							

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**Application of Virginia Electric and Power Company,  
For Revision of Rate Adjustment Clause:  
Rider S, Virginia City Hybrid Energy Center, for the Rate Years Commencing  
April 1, 2022 and April 1, 2023**

**Filing Schedule 5**

**Schedules of Short-Term Debt, Revolving Credit Agreements, and Similar Short-Term  
Financing Arrangements**

*Instructions: Investor-owned electric utilities subject to § 56-585.1 of the Code of Virginia shall file data consistent with the utility's end of test period capital structure and cost of short-term debt. This schedule should also provide detailed disclosure of any hedging/derivative instruments related to short-term debt, their respective terms and conditions (instrument type, notional amount and associated series of debt hedged, period in effect, etc.), and the impact of such instruments on the cost of short-term debt.*

See attached Filing Schedule 5 for responsive information for the 12 months ended December 31, 2020.

Short-Term Debt

2020

Commercial Paper Program

Cost Rates:

October 2020	0.254%
November 2020	0.257%
December 2020	0.277%

Average for 3-months ended 12/31/20 0.263% 0.147% WEIGHTED AVERAGE COST

Inter-Company Loans

Cost Rates:

October 2020	0.273%
November 2020	0.250%
December 2020	0.268%

Average for 3-months ended 12/31/20 0.270% 0.120% WEIGHTED AVERAGE COST  
0.266% TOTAL WEIGHTED STD COST

Computation of 13-month Average Balances

	Commercial Paper	VEPCO InterCompany Note	VPSE Inter-Company Note	
<u>Date</u>	<u>Balance</u>	<u>Balance</u>	<u>Balance</u>	<u>Balance</u>
12/31/2019	\$242,500,000	\$106,653,000	\$0	\$0
01/31/2020	\$296,000,000	\$21,184,000	\$0	\$0
02/29/2020	\$100,000,000	\$108,252,000	\$0	\$0
03/31/2020	\$135,000,000	-	\$0	\$0
04/30/2020	\$41,000,000	-	\$0	\$0
05/31/2020	-	\$283,534,000	\$0	\$0
06/30/2020	-	\$339,764,321	\$0	\$0
07/31/2020	\$50,000,000	\$381,048,321	\$0	\$0
08/31/2020	\$541,500,000	\$45,539,321	\$0	\$0
09/30/2020	\$421,500,000	\$230,466,000	\$0	\$0
10/31/2020	\$546,504,000	\$140,199,000	\$0	\$0
11/30/2020	\$185,000,000	\$572,783,000	\$0	\$0
12/31/2020	\$45,000,000	\$380,070,000	\$0	\$0
13 Month Average:	<u>\$200,308,000</u>	<u>\$200,576,382</u>	<u>\$0</u>	<u>\$400,884,382</u>
Daily Average:	<u>\$193,947,552</u>	<u>\$153,940,182</u>	<u>\$0</u>	<u>\$347,887,714</u>

\* In months, where no month-end balance occurs, the cost rate is based on the CP proxy rate

**Application of Virginia Electric and Power Company,  
For Revision of Rate Adjustment Clause:  
Rider S, Virginia City Hybrid Energy Center, for the Rate Years Commencing  
April 1, 2022 and April 1, 2023**

**Filing Schedule 8**

**Proposed Cost of Capital Statement**

*Instructions: Provide the applicant's proposed capital structure/cost of capital schedule. In conjunction, provide schedules that support the amount and cost rate of each component of the proposed capital structure and explain all assumptions used.*

See attached Filing Schedule 8 for responsive information for the 12 months ended December 31, 2020, with the weighted average cost of capital calculated using the currently authorized ROE of 9.35%.

# Virginia Electric and Power Company

## Cost of Capital and Capital Structure

As of December 31, 2020

Total Capital	Net Outstanding Principal	Weighting	Annual Cost	Embedded Cost	Weighted Cost
Total long-term debt	13,026,283,483	46.310%	563,000,609	4.322%	2.002%
Inter-company debt (13-mo avg balance, 3-mo avg cos)	153,940,162	0.547%	415,878	0.270%	0.001%
Commercial Paper (13-mo avg balance, 3-mo avg cost)	193,947,552	0.690%	509,700	0.263%	0.002%
Total short-term debt	347,887,714	1.237%	925,578	0.266%	0.003%
Total preferred stock	-	0.000%	-	0.000%	0.000%
Common stock	5,737,401,834	20.397%	-	9.350%	1.907%
Other paid-in capital	1,112,875,284	3.956%	-	9.350%	0.370%
Retained earnings	7,759,107,191	27.585%	-	9.350%	2.579%
AOCI	(52,423,500)	-0.186%	-	9.350%	-0.017%
Adjustments <sup>1</sup>	46,482,221	0.165%	-	9.350%	0.015%
Total common equity (excl AOCI)	14,603,443,030	51.917%	-	9.350%	4.854%
Income tax credits	-	-	-	-	-
Allocation: debt	71,067,392	0.253%	-	4.322%	0.011%
Allocation: preferred stock	-	0.000%	-	0.000%	0.000%
Allocation: equity	79,671,889	0.283%	-	9.350%	0.026%
Total income tax credits	150,739,281	0.536%	-	6.980%	0.037%
<b>Total Capital</b>	<b>28,128,353,508</b>	<b>100.00%</b>			<b>6.896490%</b>
<b>Capitalized Interest Rate</b>					
Long-term debt	13,026,283,483	97.399%		4.322%	4.210%
Short-term debt	347,887,714	2.601%		0.266%	0.007%
<b>Total debt</b>	<b>13,374,171,197</b>	<b>100.000%</b>			<b>4.217%</b>

**CERTIFICATE OF SERVICE**

I hereby certify that on this 20<sup>th</sup> day of December 2021, a true and accurate copy of the foregoing filed in Case No. PUR-2021-00114 was hand delivered, electronically mailed, and/or mailed first class postage pre-paid to the following:

K. Beth Clowers, Esq.  
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/s/ Timothy D. Patterson