



BY ELECTRONIC MAIL

September 26, 2024

Ms. Alison Sinclair
Air Permit Writer, Sr. II
Piedmont Regional Office
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, VA 23060

**RE: Virginia Electric and Power Company d/b/a Dominion Energy
Chesterfield Power Station (Reg. No. 50396)
Relocation of Proposed Chesterfield Energy Reliability Center Project**

Dear Ms. Sinclair:

This letter responds to your September 4, 2024, request for additional information in support of Dominion Energy's air permit application, dated August 1, 2023 and supplemented August 21, 2024, to construct and operate the Chesterfield Energy Reliability Center (CERC). Your requests are repeated in italics below, followed by the response.

Request 1: *Update Section 10.0 and Appendix H of the August 1, 2023 application to reflect the revised location and any information on related activities conducted subsequent to the August 1, 2023 application date.*

An update to Section 10.0 and Appendix H of the August 1, 2023 application are included as Attachment 1 of this letter.

Request 2: *Provide any additional information relevant to fulfilling the requirements of §10.1-1307.E.2 and §10.1-1307.E.3 of the Code of Virginia.*

Additional information relevant to §10.1-1307.E.2 and §10.1-1307.E.3 of the Code of Virginia is provided in a supplementary section within Appendix H of the August 1, 2023 application is included as Attachment 2 of this letter.

Further information relevant to §10.1-1307.E will be provided upon completion of the ambient air impact analysis.

Additionally, included as Attachment 3 is the signed Document Certification Form. If you have any questions regarding this submittal, please contact T.R. Andrade at (804) 839-2760 or via email at thomas.r.andrade@dominionenergy.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Jason P. Ericson", with a small "for" written below it.

Jason P. Ericson
Director, Environmental Services

Attachments

cc: James Kyle, VA DEQ

Letter Attachment 1



10.0 Site Suitability and Environmental Justice

Consideration of site suitability and Environmental Justice (EJ) are among the requirements for obtaining an air permitting (Va. Code §10.1-1307.E; Va. Code § 2.2-234, and Va. Code § 10.1-1183). The site suitability provisions (Va. Code § 10.1-1307.E and 9 VAC 5-170-170) require VADEQ, before issuing a permit, to “consider facts and circumstances relevant to the reasonableness of the activity involved,” including consideration of the following:

1. The character and degree of injury to, or interference with safety, health, or the reasonable use of property which is caused or threatened to be caused;
2. The social and economic value of the activity involved;
3. The suitability of the activity to the area in which it is located, except that consideration of this factor shall be satisfied if the local governing body of a locality in which a facility or activity is proposed has resolved that the location and operation of the proposed facility or activity is suitable to the area in which it is located; and
4. The scientific and economic practicality of reducing or eliminating the discharge resulting from the activity.

Additional information regarding social and economic value and site suitability of the Chesterfield Power Station site also is provided in Appendix H.

Generally, there are three steps to an EJ analysis: (1) identify whether an EJ community is implicated; and if so, (2) provide enhanced public participation to ensure EJ communities have a meaningful voice; and (3) ensure no negative disproportionate impacts on any EJ community.

An EJ Screening Phase I report is provided in Appendix H for the Chesterfield Power Station location, updated in September 2024. Further information will be provided upon completion of the ambient air impact analysis to demonstrate compliance with Va. Code § 10.1-1307.E and EJ requirements.

Appendix H Site Suitability and Environmental Justice Evaluation

H1: Environmental Justice Screening Reports

- Report, July 28, 2023
- Updated Report, September 23, 2024

H2: CERC - Social and Economic Value & Site Suitability

Appendix H1: Environmental Justice Screening Report



Memo

To	Katie MacCormick
From	Renee Hoyos
Date	23 September 2024
Subject	Environmental Justice Desktop Review for the Chesterfield Energy Reliability Center Project, Chesterfield County, Virginia - Revised

INTRODUCTION

Dominion Energy Virginia (Dominion) submitted an air permit to the Virginia Department of Environmental Quality (VA DEQ) on December 19, 2019, for the Chesterfield Energy Reliability Center Project (CERC Project or Project). The Environmental Justice (EJ) Screening Phase 1 Report was completed in July 2023. This memo provides an updated desktop review for the Chesterfield Power Station location for the Project.

DOMINION'S ENVIRONMENTAL JUSTICE POLICY

Dominion adopted an environmental justice policy through which it is committed to hearing, considering, and responding to the concerns of all stakeholders. This commitment includes ensuring that a voice in decisions about siting and operating electric energy infrastructure is given to all people, regardless of race, color, national origin, or income. Dominion supports that communities should have ready access to accurate information and a meaningful voice in the project development process.

ENVIRONMENTAL JUSTICE DEFINITIONS AND METHODS

The purpose of conducting the desktop review was to expand the study area and use the most current U.S. Census data available.

According to USEPA guidance (USEPA 2016a), EJ analyses must address disproportionately high or adverse impacts on populations of color (i.e., who are non-white, or who are white but have Hispanic ethnicity) when these populations represent over 50 percent of the population of an affected area or when the percentage of populations of color or low-income populations in the affected area is “meaningfully greater” than the population of color percentage in the “reference population”—defined as the population of a larger area in which the affected population resides (e.g., a county, state, or region depending on the geographic extent of the analysis area). Low-income populations are those that fall within the annual statistical poverty thresholds from the U.S. Bureau of the Census, Population Reports, Series P-60 on Income and Poverty (USEPA 2016b).

The Commonwealth of Virginia’s General Assembly adopted a new statute, the Virginia Environmental Justice Act (VEJA) in July 2021 (Va. Code § 2.2-234 through 2.2-235). The VEJA defines “Environmental Justice” and “Environmental Justice Community” as follows (Va. Code § 2.2-234):

- “Environmental Justice” means the fair treatment and meaningful involvement of every person, regardless of race, color, national origin, income, faith, or disability, regarding the development, implementation, or enforcement of any environmental law, regulation, or policy.
 - “Fair treatment” means the equitable consideration of all people whereby no group of people bears a disproportionate share of any negative environmental consequence resulting from an industrial, governmental, or commercial operation, program, or policy.
 - “Meaningful involvement” means the requirements that (i) affected and vulnerable community residents have access and opportunities to participate in the full cycle of the decision-making process about a proposed activity that will affect their environment or health and (ii) decision makers will seek out and consider such participation, allowing the views and perspectives of community residents to shape and influence the decision.
- “Environmental Justice Community” means any low-income community, population of color, or community of color.
 - “Low-income community” means any census block group in which 30 percent or more of the population is composed of people with low income.
 - “Population of color” means a population of individuals who identify as belonging to one or more of the following groups: Black, African American, Asian, Pacific Islander, Native American, other non-white race, mixed race, Hispanic, Latino, or linguistically isolated.
 - “Community of color” means any geographically distinct area where the population of color, expressed as a percentage of the total population of such area, is higher than the population of color in the Commonwealth expressed as a percentage of the total population of the Commonwealth. If a community of color is composed primarily of one of the groups listed in the definition of “population of color,” however, the percentage population of such group in the Commonwealth is used instead of the percentage population of color in the Commonwealth.

ERM used the Census Block Group (CBG) as the primary geographic unit for this EJ analysis because it is the smallest unit for which U.S. Census Bureau demographic data is available, providing information at a sub-county level. Demographic and socioeconomic data for CBGs in the study area are provided in Table 1 and are depicted on Figure 1 included in Attachment A.

While Commonwealth of Virginia is the reference population for this analysis, data for Chesterfield and Henrico counties were also considered in the review to assess regional demographic variations. Demographic data for the Commonwealth were compared with individual CBGs to help identify the presence of potential EJ populations. For example, if the reported percentage of population of color within an individual CBG is greater than the percentage of population of color in Virginia as a whole (40 percent), then a potential EJ population was identified in that CBG. The U.S. Census Bureau American Community Survey, 5 Year Estimates (2018-2022) was used to collect demographic data for the state, counties, and CBGs (U.S. Census Bureau 2022a, 2022b, 2022c, 2022d, 2022e).

Virginia defines “population of color” as a group of individuals belonging to one or more of the following racial and ethnic categories: “Black, African American, Asian, Pacific Islander, Native American, other, nonwhite race, mixed race, Hispanic, Latino or linguistically isolated” (Va. Code §§ 2.2-234). The USEPA’s definition of a population of color is analogous to Virginia’s definition of population of color but does not include the linguistically isolated population. However, the U.S. Census Bureau American Community Survey has a separate table for limited English-speaking households in which all members over age 14 speak a language other than English and also speak English less than very well.

Virginia's criteria for an identified "population of color" and what constitutes an EJ population have a lower threshold and are more inclusive than that suggested in federal guidance. Therefore, the Commonwealth's criteria are used to identify CBGs that contain populations of color for this study. The same approach is used to identify limited English speakers, which is included in the state's definition for a population of color, although considered separately in federal guidance.

Federal guidelines recommend using an appropriate poverty threshold and comparing the analysis area with a reference population to identify low-income populations. Virginia defines a "low-income community" as any CBG in which 30 percent of the population is composed of low-income residents. It defines low income as "having an annual household income equal to or less than the greater of (i) an amount equal to 80 percent of the median income of the area in which the household is located, as reported by the Department of Housing and Urban Development, and (ii) 200 percent of the Federal Poverty Level" (Va. Code § 2.2-234). For this review, a low-income community is considered present when the low-income population percentage in the CBG exceeds 30 percent.

This EJ analysis also assesses the potential for other socioeconomic indicators to identify areas that may have higher environmental burdens and vulnerable populations when considered in combination with demographic and socioeconomic information meeting the EJ criteria and definition under VEJA. These other indicators include education attainment (the percent of people over age 25 in a CBG with less than a high school education) and age-based vulnerabilities (i.e., the percent of people in a CBG under age 5 or over age 64). There is no equivalent VEJA definition for these groups, so age-based communities are identified using the federal guidance of a meaningfully greater threshold. A CBG is considered to contain a potential age-based vulnerable community (or community with low education attainment) when the percentage of the population either below age 5 or above age 64 (or with less than a high school education) exceeds twice the corresponding state averages.

ENVIRONMENTAL JUSTICE DESKTOP RESULTS

The desktop review identified 24 CBGs within a 3-mile buffer of the Project (the EJ study area). Based on the EJ criteria thresholds identified above, 22 CBGs containing potential EJ communities are within the EJ study area.

The Project is in CT 1004.03 BG 3 that exceeds the thresholds for total population of color (84 percent) and low-income populations (73 percent) (see Table 1 and Attachment A). Spanish language speakers represent 26 percent of limited English-speaking households in this CBG. Additionally, 32 percent of the population over age 24 in this CBG has less than a high school education.

Throughout the EJ study area there are significant pockets of linguistic isolation, with 8 of the 24 CBGs meeting VEJA's threshold for a potential EJ community based on linguistic isolation. In all these CBGs, Spanish is the most commonly spoken language after English and the most common language of linguistically isolated households.

Table 1: Demographic and Socioeconomic Characteristics within 3-mile Buffer of Project

State/County Census Block Group (Census Tract, Block Group)	Population	Total Populations of Color (%) ^a	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Low-Income Population ^b (%)	Limited English- Speaking Household ^c (%)	Population with Less than High School Education ^d (%)	Population Under Age 5 ^e (%)	Population Over Age 64 ^e (%)
VIRGINIA	8,624,511	40	60	19	0.1	7	0.1	0.5	4	10	23	3	9	6	16
Chesterfield County	366,019	41	59	23	0.1	3	0.1	0.6	4	10	18	2	7	6	16
510411004031 (CT 1004.03, BG 1)	1,903	63	37	26	0.0	25	0.0	0.0	0	12	2	0	4	7	9
510411004032 (CT 1004.03, BG 2)	1,553	40	60	14	0.0	0	0.0	0.0	2	24	1	6	0	3	12
510411004033 (CT 1004.03, BG 3)	442	84	16	0	0.0	10	0.0	0.0	33	41	73	26	32	3	9
510411004034 (CT 1004.03, BG 4)	839	66	34	64	0.0	0	0.0	0.0	2	0	30	0	9	0	16
510411004035 (CT 1004.03, BG 5)	1,558	39	61	8	0.0	14	0.0	0.0	8	9	3	0	0	1	17
510411004041 (CT 1004.04, BG 1)	578	55	45	22	0.5	4	0.0	0.0	0	29	55	6	40	2	8
510411004061 (CT 1004.06, BG 1)	1,565	67	33	37	0.0	1	0.0	0.0	6	23	51	11	31	5	21
510411004071 (CT 1004.07, BG 1)	453	69	31	30	0.0	0	2	0.0	9	28	55	4	36	12	6
510411004072 (CT 1004.07, BG 2)	1,752	73	27	40	0.0	0	0.0	0.0	1	32	28	6	18	7	6
510411004073 (CT 1004.07, BG 3)	2,025	56	44	21	0.0	3	0.0	0.5	13	18	44	4	13	4	15
510411004091 (CT 1004.09, BG 1)	1,582	34	66	20	0.0	1	0.0	0.0	3	9	17	0	11	9	18
510411004093 (CT 1004.09, BG 3)	297	12	88	12	0.0	0	0.0	0.0	0	0	23	0	14	0	20

State/County Census Block Group (Census Tract, Block Group)	Population	Total Populations of Color (%) ^a	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Low-Income Population ^b (%)	Limited English- Speaking Household ^c (%)	Population with Less than High School Education ^d (%)	Population Under Age 5 ^e (%)	Population Over Age 64 ^e (%)
VIRGINIA	8,624,511	40	60	19	0.1	7	0.1	0.5	4	10	23	3	9	6	16
510411004094 (CT 1004.09, BG 4)	2,310	39	61	31	0.0	0	5	0.0	1	2	31	0	4	6	12
510411004095 (CT 1004.09, BG 5)	1,458	51	49	27	0.0	5	0.0	0.0	5	14	17	0	10	7	10
510411005051 (CT 1005.05, BG 1)	1,862	30	70	5	0.0	0	0.0	0.9	9	15	45	2	12	9	11
510411005053 (CT 1005.05, BG 3)	1,101	57	43	30	0.0	11	0.0	0.0	7	9	12	0	0	2	8
510411005063 (CT 1005.06, BG 3)	1,262	82	18	2	0.0	0	0.0	0.0	0	80	85	27	73	4	16
510411005091 (CT 1005.09, BG 1)	2,918	48	52	24	0.0	7	0.0	0.0	0	17	6	0	0	2	13
510411005092 (CT 1005.09, BG 2)	270	23	77	23	0.0	0	0.0	0.0	0	0	18	0	6	0	40
510411005094 (CT 1005.09, BG 4)	2,717	66	34	63	0.0	0	0.0	0.0	3	0	8	0	1	6	9
510411005093 (CT 1005.09, BG 3)	1,135	37	63	15	0.0	0	0.0	0.0	3	18	12	0	0	1	15
Henrico County	333,120	49	51	29	0.1	9	0.0	0.4	4	6	21	3	7	6	16
510872016021 (CT 2016.02, BG 1)	451	29	71	29	0.0	0	0.0	0.0	0	0	19	0	18	0	36
510872016022 (CT 2016.02, BG 2)	1,351	55	45	50	0.0	0	0.0	0.0	1	4	7	0	1	4	36
510872016024 (CT 2016.02, BG 4)	1,600	15	85	3	0.0	5	0.0	0.0	3	4	8	0	0	1	25

Source: U.S. Census Bureau (2022). American Community Survey, 5 Year Estimates (2018-2022), Tables B03002, C17002, C16002, B15002, B01001.

^a U.S. Census Bureau American Community Survey 5 Year Estimates (2018-2022), Table B03002.

^b U.S. Census Bureau American Community Survey 5 Year Estimates (2018-2022), Table C17002.

^c U.S. Census Bureau American Community Survey 5 Year Estimates (2018-2022), Table C16002.

^d U.S. Census Bureau American Community Survey 5 Year Estimates (2018-2022), Table B15002.

^e U.S. Census Bureau American Community Survey 5 Year Estimates (2018-2022), Table B01001.

Bold font indicates a CBG crossed by the Project.

Gray shaded cells include reference populations.

Blue shaded cells indicate populations of color, including communities of color composed primarily of one of the groups listed in the VEJA definition of “population of color” or the analysis area has a greater percentage of a community of color than the state as a whole.

Green shaded cells indicate low-income populations per VEJA guidelines.

Yellow shaded cells indicate significant populations with language barriers.

Orange shaded cells indicate significant populations over age 24 with less than high school education.

Pink shaded cells indicate significant populations under age 5 or over age 64.

SUMMARY

The results of this EJ review will be incorporated into the application EJ assessment, which will describe how stakeholders' views were considered, assess impacts on potential EJ communities and identify ways to avoid or minimize impacts.

REFERENCES

- U.S. Census Bureau. 2022a. *American Community Survey 5-year Estimates Census Data (2018-2022)*. File No. B03002, Hispanic or Latino Origin by Race. Available online at: <https://data.census.gov/cedsci/>. Accessed February 2024.
- U.S. Census Bureau. 2022b. *American Community Survey 5-year Estimates Census Data (2018-2022)*. File No. C17002, Ratio of Income to Poverty Level in the Past 12 Months. Available online at: <https://data.census.gov/cedsci/>. Accessed February 2024.
- U.S. Census Bureau. 2022c. *American Community Survey 5-year Estimates Census Data (2018-2022)*. File No. C16002, Household Language by Household Limited English Speaking Status. Available online at: <https://data.census.gov/cedsci/>. Accessed February 2024.
- U.S. Census Bureau. 2022d. *American Community Survey 5-year Estimates Census Data (2018-2022)*. File No. B15002, Sex by Educational Attainment for the Population 25 Years and Over. Accessed July 2023. Available online at: <https://data.census.gov/cedsci/>. February 2024.
- U.S. Census Bureau. 2022e. *American Community Survey 5-year Estimates Census Data (2018-2022)*. File No. B01001, Sex by Age. Available online at: <https://data.census.gov/cedsci/>. February 2024.
- U.S. Environmental Protection Agency (USEPA). 2016a. Promising Practices for the EJ Methodologies in NEPA Reviews. Available online at: Promising Practices For EJ Methodologies IN NEPA Reviews. February 2024.
- U.S. Environmental Protection Agency (USEPA). 2016b. "Technical Guidance for Assessing Environmental Justice in Regulatory Analysis". Available online at: Technical Guidance for Assessing Environmental Justice in Regulatory Analysis | US EPA. February 2024.

Chesterfield Energy Reliability Center Project

Attachment A

Figure 1: Map of Demographics in the Study Area

Letter Attachment 2

Appendix H2: CERC - Social and Economic Value & Site Suitability

CERC – Social and Economic Value & Site Suitability

In accordance with §10.1-1307.E.2 and §10.1-1307.E.3 (*see also 9VAC5-170*), “facts and circumstances relevant to the reasonableness of [CERC] and the regulations proposed to control it,” including its “social and economic value” and “suitability of the activity to the area in which it is located,” follow.

Social and Economic Value

Virginia Electric and Power Company’s, d/b/a Dominion Energy Virginia (Dominion) mission is to provide reliable, affordable, and increasingly clean energy – which our customers, including the over 160,000 customers in Chesterfield County, expect and rely on around the clock. CERC will provide reliable, dispatchable power for Dominion customers while supporting Dominion’s, and the Commonwealth’s, clean energy transition. Affordable and reliable energy, just like clean air and clean water, is essential to the health of any community.

Maintaining a reliable electric grid and meeting the region’s growing demand is in the public interest as it supports the well-being of the public and economic development in Virginia. Power demand in Virginia is growing at an unprecedented pace as a result of several factors including the growth of data centers and electrification. PJM projects Dominion’s summer load growth to increase approximately 5% annually over the next 10 years, causing Dominion to anticipate load to nearly double in the next 15 years. Without additional generation, power demand will exceed power supply and there will not be enough power for our customers on the hottest and coldest days of the year.

CERC is designed to respond quickly with reliable, dispatchable power generation that supports the continued increased reliance on intermittent renewable generation, including solar and wind. As of April 1, 2024, Dominion has approximately 8,000 MW of solar in operation or development in Virginia, is constructing the nation’s largest offshore wind project and could pursue future additional offshore wind development in the recently secured lease area adjacent to and to the east of Coastal Virginia Offshore Wind, and is building battery storage in communities across the Commonwealth. CERC will provide power to the grid when the Regional Transmission Operator, PJM, determines it is needed. This includes during high demand periods, seasonal peaks, extreme temperature events, and when intermittent generation resources are unavailable or insufficient to meet customer needs.

CERC will also provide economic support to the immediate community, Chesterfield County, and the Commonwealth. According to a report compiled by Mangum Economics in 2023, the local community will benefit from jobs, economic activity, and increased tax revenue. During construction it is anticipated that CERC will create: (1) 226 direct, indirect, and induced local jobs and an additional 315 non-local construction jobs including a commitment to providing opportunities for the local community and Small, Women-owned, and Minority-owned Business (SWaM) workforce as part of the project; (2) \$10.9 million in associated local wages and benefits; (3) \$52.9 million in local economic output; and (4) \$2.2 million in state and local tax revenue which potentially can be used for community services.

With the retirement of Chesterfield Power Station Units 5 & 6, siting a new generation facility in the county helps ensure a just transition to a clean energy grid, replacing lost tax revenues and

other local economic impacts. During CERC's operational life it is anticipated that CERC will create: (1) 35 direct, indirect, and induced local jobs; (2) \$3.5 million in associated local wages and benefits; (3) \$24.9 million in local economic output; and (4) \$142.6 million in new Chesterfield County tax revenue which potentially can be used for community services. A copy of the Mangum Economics report¹ that was prepared for this project is included as Attachment 1.

Site Suitability

The Chesterfield Power Station location is suitable for the proposed CERC. As reflected in the signed Form 7 provided previously (see also the attached April 5, 2024, Chesterfield County Written Determination included as Attachment 2), Chesterfield County has provided confirmation that CERC is in keeping with permitted site usage. There has been a power station at the site since the 1940s, with peak power production of approximately 1,750 MWs, primarily from coal-fired units. The proposed CERC facility along with the existing natural gas-fired units will provide approximately 1,420 MWs. The environmental impacts (air emissions and water usage) from CERC and continued operation of the existing units will be less as compared to historic baseload coal power use. For example, in 2015 the annual nitrogen oxide emissions were approximately 3,174 tons per year when the site was operating four coal-fired units and two natural gas and fuel oil units. The potential nitrogen oxide emissions from the proposed CERC will be no more than 345 tons per year, with approximately 982 tons per year (based on actual emissions from calendar year 2023) from the existing natural gas and fuel oil power generation units.

During the development of the project the decision was made to move the project from the approximate 94-acre parcel located within the James River Industrial Center on Battery Brooke Parkway to the existing Chesterfield Power Station location. This decision was based on community and locality engagement and careful consideration of both sites over the last several months. Among other advantages, the Power Station site will limit construction and operations to the Company's existing industrial footprint in the area and minimize impacts to wetlands and cultural resources.

Since Chesterfield Power Station was built long before most of the surrounding community was present in this area, it has the benefit of a relatively large buffer area around the fence line. The nearest residences to either site are almost 1-mile away, but moving the project to the existing Chesterfield Power Station location will decrease the number of people residing within a three-mile radius of the CERC facility by almost 30%, including a decrease in environmental justice communities (populations of color, low income, and limited English-speaking residents).

¹ The preliminary report completed in 2023 provides a conservative estimate of economic benefits for the surrounding locality based on tax rates for Chesterfield County. This report will be updated, including reference to the Chesterfield Power Station location, by Mangum Economics later this year.

Appendix H2: Attachment 1 – Mangum Economics Report

CHESTERFIELD ENERGY RELIABILITY CENTER

ECONOMIC CONTRIBUTION TO CHESTERFIELD COUNTY, VIRGINIA*

**DRAFT SUMMARY OF PENDING LARGER REPORT*



Prepared for



**Dominion
Energy®**

APRIL 2023

MANGUM 
economics

4198 COX ROAD, SUITE 104
GLEN ALLEN, VIRGINIA 23060
804-322-7777

MANGUMECONOMICS.COM

About Mangum Economics, LLC

Mangum Economics is a Glen Allen, Virginia based firm that was founded in 2003. Since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Information Technology:** Working with some of the largest names in the business, the Mangum Team has produced analyses of the economic and fiscal impact of data centers at the state and local level across the country.
- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 18 GW of proposed solar, wind, battery storage, and hydro projects spanning nineteen states. Among those projects was Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects. Most recently, we were called upon by Henrico County to provide an analysis of the proposed \$2.3 billion Green City "net-zero eco district." The Mangum Team has also authored multiple economic development plans, including identifying industries that were likely recruitment targets because of the high-speed MAREA and BRUSA sub-sea cable landings in Virginia Beach.
- **Education and Workforce:** The Mangum Team has worked with multiple post-secondary and secondary education institutions to quantify their economic contribution to their host communities as well as their impact on regional and statewide workforce needs.

The Project Team

Martina Arel, M.B.A., *Director – Economic Development & Energy Research*

Rebecca Kyle, *Senior Research Analyst*

A. Fletcher Mangum, Ph.D., *Founder and CEO*



Table of Contents

Executive Summary.....	1
Introduction	2
The Project.....	2
Local Economic Profile	2
Total Employment.....	2
Employment and Wages by Industry Supersector.....	4
Unemployment	6
Economic Impact.....	7
Construction Phase	7
Economic Impact Assumptions	7
Economic Impact.....	7
Ongoing Operations Phase	8
Economic Impact Assumptions	8
Economic Impact.....	8

Executive Summary

This report provides a preliminary summary of the economic contribution that the construction and ongoing operation of the proposed Dominion Energy Chesterfield Energy Reliability Center (C.E.R.C.) project would make to Chesterfield County, Virginia. The primary findings from that assessment are as follows:¹

- 1) The proposed C.E.R.C. development consists of the construction and ongoing operation of four 250 megawatt (MW) dispatchable natural gas combustion turbine facilities. The project would be located on Dominion owned land adjacent to its existing power station in Chesterfield County, Virginia.
- 2) The proposed C.E.R.C. would make a significant economic contribution to Chesterfield County:
 - The proposed C.E.R.C. would provide an estimated one-time pulse of economic activity to Chesterfield County during its construction phase supporting approximately:
 - 226 direct, indirect, and induced local jobs, and an additional 315 non-local construction jobs.
 - \$10.9 million in associated local wages and benefits.
 - \$52.9 million in local economic output.
 - \$2.2 million in state and local tax revenue.
 - The proposed C.E.R.C. would provide an estimated annual economic impact to Chesterfield County during its ongoing operational phase supporting approximately:
 - 35 direct, indirect, and induced local jobs.
 - \$3.5 million in associated local wages and benefits.
 - \$24.9 million in local economic output.

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

¹ Please note that this report is a draft summary of a larger, pending report.

Introduction

This report provides a preliminary summary of the economic contribution that the construction and ongoing operation of the proposed Dominion Energy Chesterfield Energy Reliability Center (C.E.R.C.) would make to Chesterfield County, Virginia. This report was commissioned by Dominion Energy and produced by Mangum Economics.

The Project

The proposed C.E.R.C. development consists of the construction and ongoing operation of four 250 megawatt (MW) dispatchable natural gas combustion turbine facilities. The project would be located on Dominion owned land adjacent to its existing power station in Chesterfield County, Virginia. Project construction is estimated to commence in May 2025 and the facility would begin operations in August 2027.

Local Economic Profile

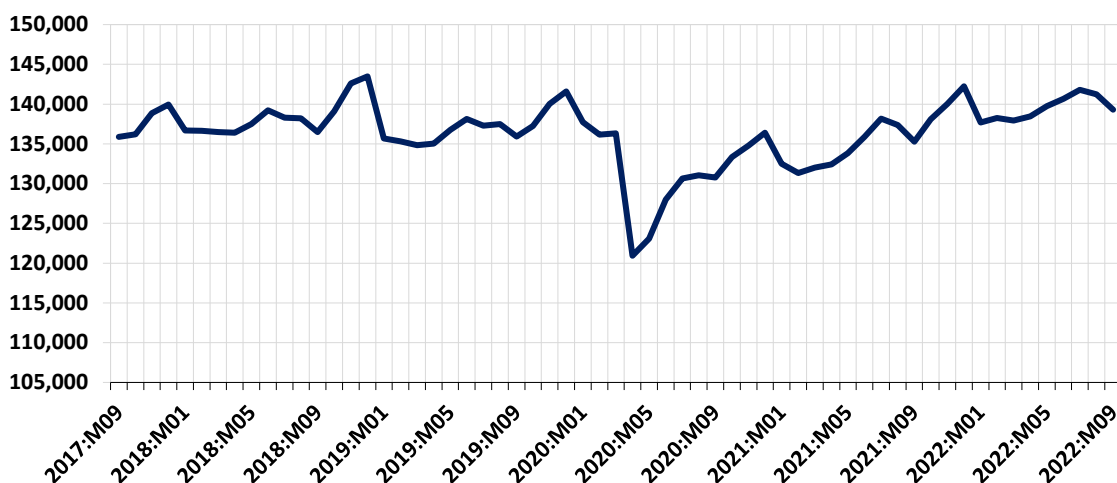
This section provides context for the economic and fiscal impact assessments to follow by profiling the local economy of Chesterfield County.

Total Employment

Figure 1 depicts the trend in total employment in Chesterfield County during the five-year period from September 2017 through September 2022. With the exception of seasonal variations, employment in the county was generally stable through 2019. Then, in April 2020 total employment declined significantly due to the lockdowns imposed as a result of the COVID-19 pandemic. Employment has since recovered to pre-pandemic levels. As of September 2022, total employment in the county stood at 139,292 jobs, which represents an overall increase in employment of 2.5 percent (or 3,400 jobs) over the five-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 3.4 percent.²

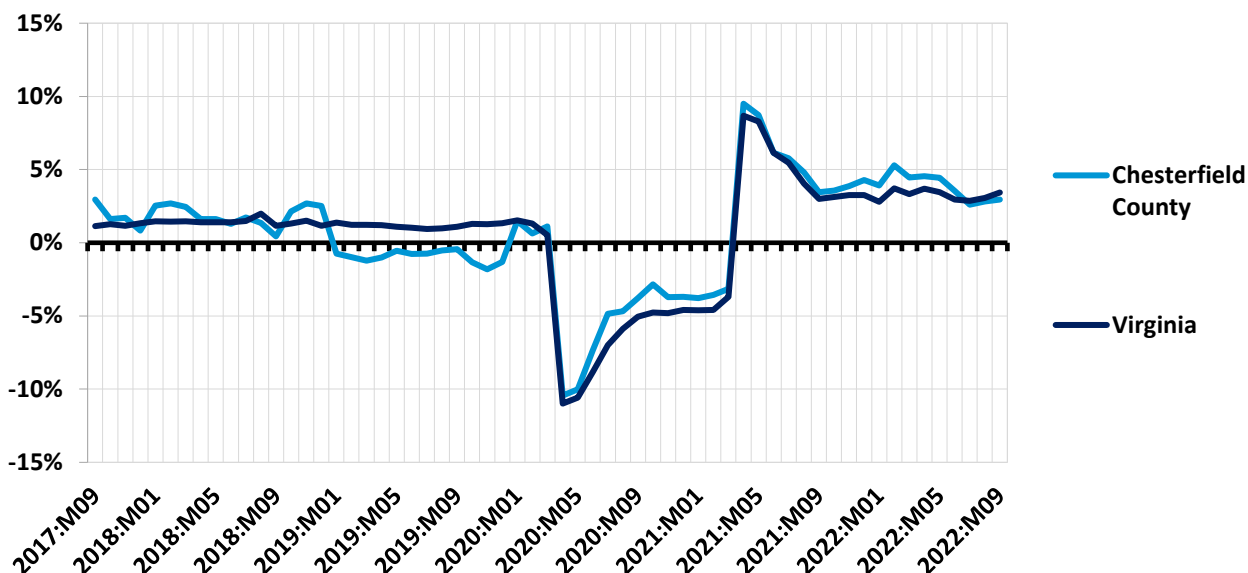
² Data Source: U.S. Bureau of Labor Statistics.

Figure 1: Total Employment in Chesterfield County – September 2017 to September 2022³



To control for seasonality and provide a point of reference, Figure 2 compares the year-over-year change in total employment in Chesterfield County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Chesterfield County tracked closely with the statewide average for most of the period. As of September 2022, the year-over-year change in total employment in Chesterfield County was 3.0 percent as compared to 3.4 percent statewide in Virginia.

Figure 2: Year-Over-Year Change in Total Employment – September 2017 to September 2022⁴



³ Data Source: U.S. Bureau of Labor Statistics.

⁴ Data Source: U.S. Bureau of Labor Statistics.

Employment and Wages by Industry Supersector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 1 and 2, Figures 3 through 5 provide data on private employment and wages in Chesterfield County by industry supersector.⁵

Figure 3 provides an indication of the distribution of private sector employment across industry supersectors in Chesterfield County in the third quarter of 2022. As these data indicate, the county's largest industry sector that quarter was Trade, Transportation, and Utilities (34,191 jobs), followed by Professional and Business Services (20,318 jobs), and Education and Health Services (17,628 jobs).

Figure 3: Private Employment by Industry Supersector in Chesterfield County – 3rd Qu. 2022⁶

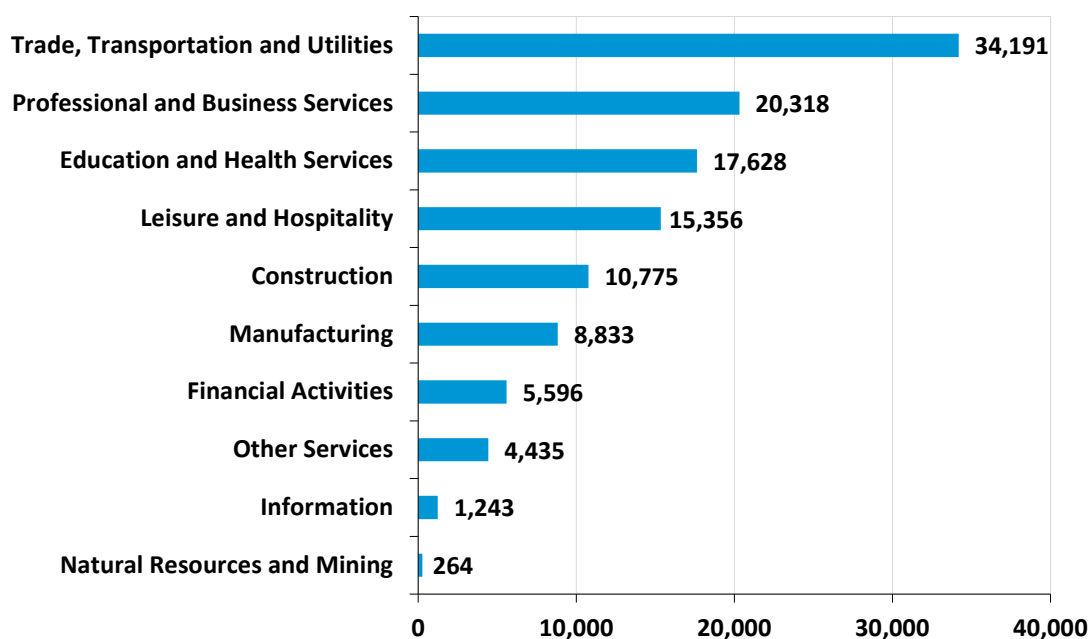


Figure 4 provides a similar ranking for average private sector weekly wages by industry supersector in Chesterfield County in the third quarter of 2022. As these data show, the highest paying industry sectors that quarter were Information (\$1,520 per week), Manufacturing (\$1,489 per week), and Financial Activities (\$1,477 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Chesterfield County that quarter was \$1,110 per week.

⁵ A "supersector" is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.

⁶ Data Source: U.S. Bureau of Labor Statistics.

Figure 4: Average Private Weekly Wages by Industry Supersector in Chesterfield County – 3rd Qu. 2022⁷

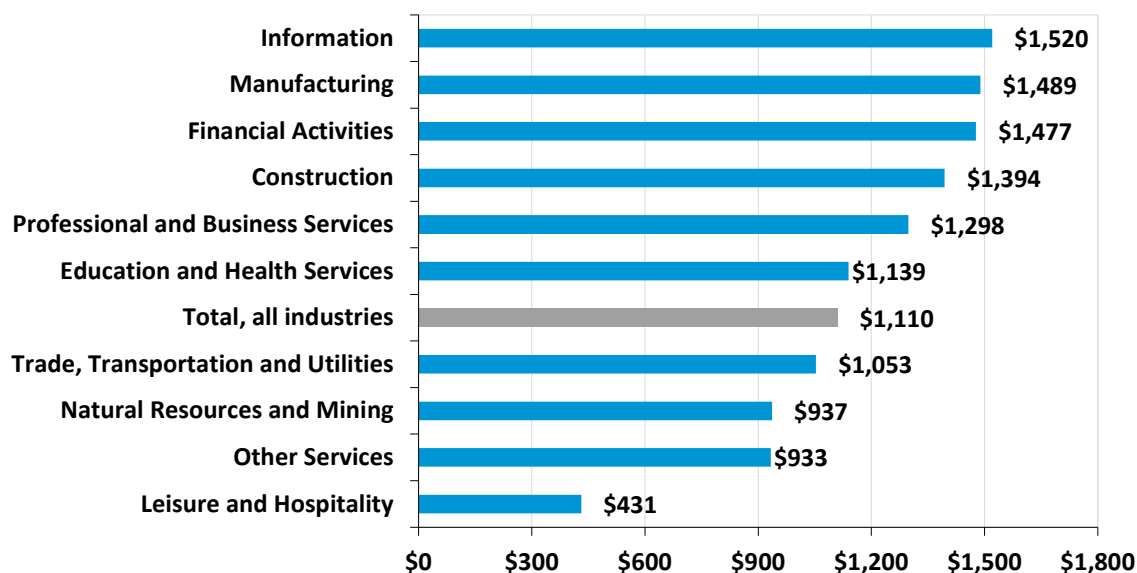
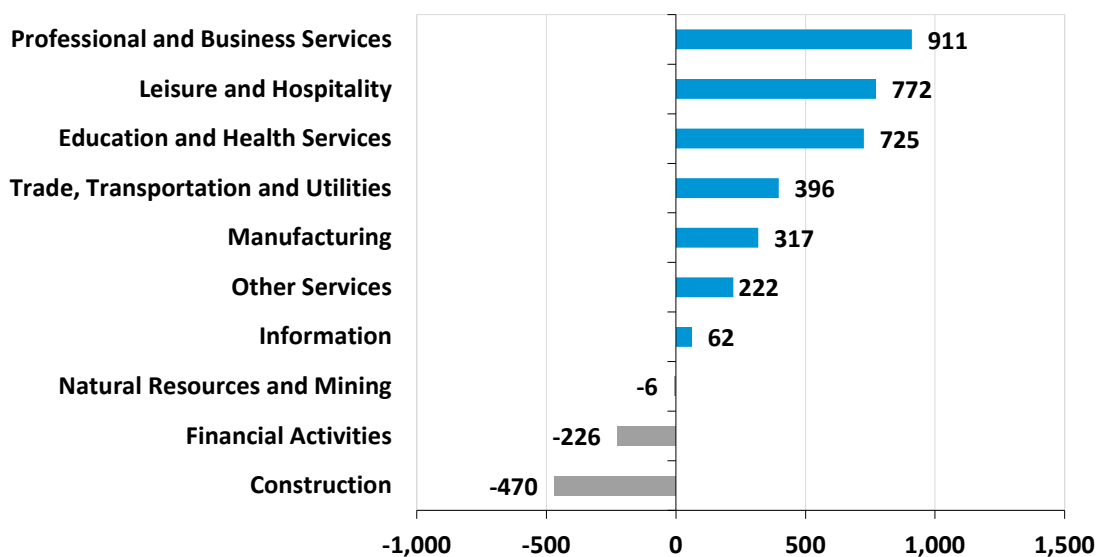


Figure 5 details the year-over-year change in private sector employment from the third quarter of 2021 to the third quarter of 2022 in Chesterfield County by industry supersector. Over this period, the largest employment gains occurred in the Professional and Business Services (up 911 jobs), Leisure and Hospitality (up 772 jobs), and Education and Health Services (up 725 jobs) sectors. The only employment losses occurred in the Construction (down 470 jobs), Financial Activities (down 226 jobs), and Natural Resources and Mining (down 6 jobs) sectors.

Figure 5: Change in Private Employment by Industry Supersector in Chesterfield County from 3rd Qu. 2021 to 3rd Qu. 2022⁸



⁷ Data Source: U.S. Bureau of Labor Statistics.

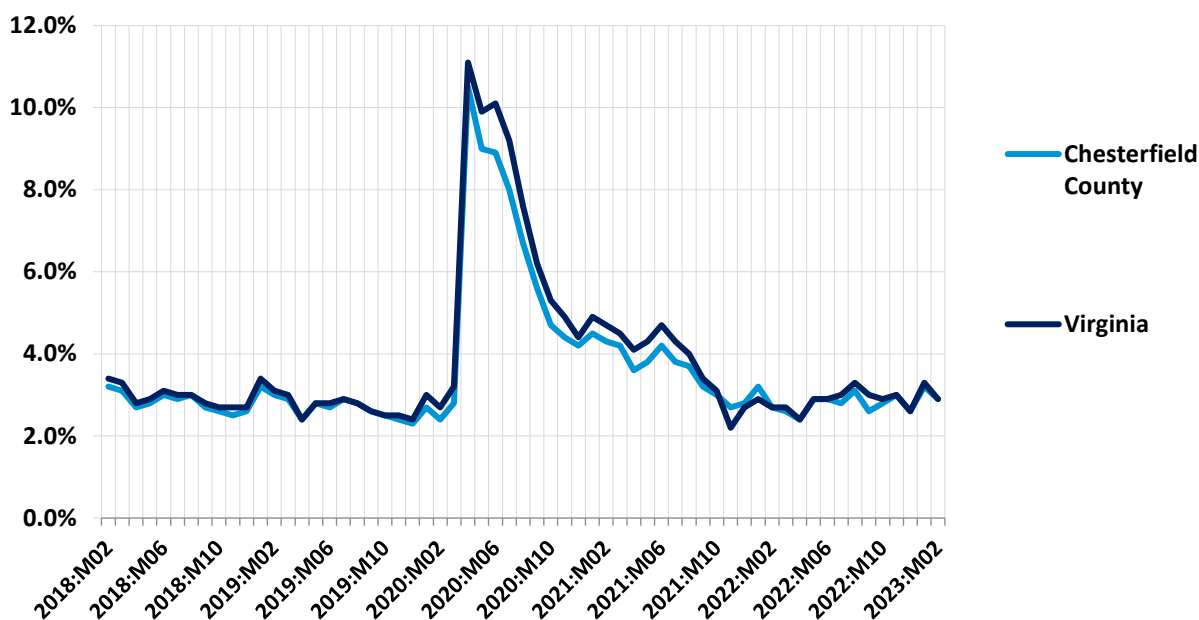
⁸ Data Source: U.S. Bureau of Labor Statistics.



Unemployment

Figure 6 illustrates the trend in Chesterfield County's unemployment rate over the five-year period from February 2018 through February 2023 and benchmarks those data against the statewide trend for Virginia. As these data show, unemployment rates in Chesterfield County tracked closely with the statewide trend throughout the period. In April 2020 unemployment in the county and state significantly rose as a result of the labor dislocations caused by the COVID-19 pandemic. As of February 2023, unemployment stood at 2.9 percent in Chesterfield County compared to 2.9 percent in Virginia as a whole.

Figure 6: Unemployment Rate – February 2018 to February 2023⁹



⁹ Data Source: U.S. Bureau of Labor Statistics.

Economic Impact

The analysis provided in this section quantifies the economic contribution that the proposed C.E.R.C. would make to Chesterfield County. The analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operations phase.

Construction Phase

This portion of the section assesses the economic and fiscal impact that the one-time pulse of activity associated with construction of the proposed C.E.R.C. would have on Chesterfield County.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- Confidential construction expenditure estimates.¹⁰
- Total construction employment is estimated to be 350 workers of which approximately 35 would be local craft jobs.¹¹
- Per diem spending of non-local construction workers is approximately \$157 per day.¹²
- For ease of analysis, construction is assumed to take place in a single year.

Economic Impact

Applying these assumptions in the IMPLAN model¹³ results in the following estimates of one-time economic and fiscal impact. As shown in Table 1, construction of the proposed C.E.R.C. would directly provide a one-time pulse supporting approximately: 1) 35 local jobs and 315 non-local construction jobs, 2) \$2.4 million in local wages and benefits, and 3) \$25.6 million in local economic output to Chesterfield County over the construction period (in 2023 dollars).

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on Chesterfield County would support approximately: 1) 226 local jobs and 315 non-local construction jobs, 2) \$10.9 million in local wages and benefits, 3) \$52.9 million in local economic output, and 4) \$2.2 million in state and local tax revenue over the construction period (in 2023 dollars).

¹⁰ Data Source: Preliminary construction expenditure estimates provided by Dominion Energy. Estimates are confidential and subject to change based on final design and vendor contracts.

¹¹ Data Source: Dominion Energy. Local employment estimate is subject to change based on final design and vendor contracts.

¹² Data Source: U.S. General Services Administration per diem rates for Virginia.

¹³ IMPLAN is produced by IMPLAN Group, LLC.

Table 1: Estimated One-Time Economic and Fiscal Impact on Chesterfield County from Construction of the C.E.R.C. (in 2023 Dollars)

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	35 (+315)	\$2,438,100	\$25,552,200
2nd Round Indirect and Induced Economic Activity	191	\$8,451,700	\$27,372,700
Total Economic Activity	226 (+315)	\$10,889,800	\$52,924,900
Fiscal Impact			
State and Local Tax Revenue			\$2,231,600

**Totals may not sum due to rounding.*

Ongoing Operations Phase

This portion of the section assesses the annual economic impact that the proposed C.E.R.C. would have on Chesterfield County.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- The C.E.R.C. would employ approximately 10 individuals and annual ongoing operational expenditures are estimated to be approximately \$8.8 million, excluding variable costs and capital expenditures.¹⁴

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 2, annual operation of the C.E.R.C. would directly support approximately: 1) 10 jobs, 2) \$1.9 million in wages and benefits, and 3) \$18.1 million in economic output to Chesterfield County (in 2023 dollars).

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Chesterfield County would be approximately: 1) 35 jobs, 2) \$3.5 million in wages and benefits, and 3) \$24.9 million in economic output (in 2023 dollars).

¹⁴ Data Source: Dominion Energy.

Table 2: Estimated Annual Economic Impact on Chesterfield County from the Ongoing Operation of the C.E.R.C. (in 2023 Dollars)

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	10	\$1,942,300	\$18,127,300
2nd Round Indirect and Induced Economic Activity	25	\$1,512,200	\$6,812,800
Total Economic Activity	35	\$3,454,500	\$24,940,100

**Totals may not sum due to rounding.*

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Appendix H2: Attachment 2 – Chesterfield County Written Determination



Chesterfield County, Virginia
Department of Planning

9800 Government Center Parkway – P.O. Box 40 – Chesterfield, VA 23832-0040
Phone: (804) 748-1050 – Fax: (804) 717-6295 – Internet: chesterfield.gov

Andrew G. Gillies, AICP
Director

WRITTEN DETERMINATION

April 5, 2024

Dominion Energy Virginia
120 Tredegar Street
Richmond, VA 23219

McGuireWoods LLP
Gateway Plaza
800 E. Canal
Richmond, VA 23219
Attn: Adena M. Patterson, AICP

RE: 1603 Reymet Rd. (Tax Id 802-665-4390), 11201 Old Stage Rd. (Tax Id 805-662-7764),
1501 Reymet Rd. (Tax Id 805-666-2525), 901 Coxendale Rd. (Tax Id 806-662-8465), 500
Coxendale Rd. (Tax Id 806-664-8063), 701 Coxendale Rd. (Tax Id 808-661-2255, and 451
Coxendale Rd. (Tax Id 811-660-3332) (the “properties”)
Chesterfield County, Virginia

Dear Ms. Patterson:

As requested, we have reviewed our zoning files for the properties referenced above and wish to advise you of the following zoning information:

1. The properties referenced above are currently zoned Heavy Industrial (I-3) with Conditional Use as defined by the Chesterfield County Zoning Ordinance, Chapter 19.1 of the Code of the County of Chesterfield, 1997, as amended.
2. The properties are subject to the Chesterfield County Zoning Ordinance and to the zoning conditions of zoning cases 10SN0114, 15SN0647 and 19SN0554. Therefore, the properties are subject to the development standards contained therein.
3. An “electric power generation plant” is permitted use with Conditional Use approval of Case 10SN0114, approved by the Board of Supervisors on February 24, 2010.
4. The uses permitted on the properties are those identified in the Heavy Industrial (I-3) zoning district of the Chesterfield County Zoning Ordinance (Section 19.1 – 52 et seq. and those permitted by zoning cases 10SN0114, 15SN0647 and 19SN0554.

Page 2 of 2

802-665-4390, 805-662-7764, 805-666-2525, 806-662-8465, 806-664-8063,
808-661-2255, and 811-660-3332 (the "properties")
Chesterfield County, Virginia

5. Development of the properties is subject to obtaining site plan approval and building permit approval.

This certificate addresses zoning issues only. The current zoning ordinance references permitted uses and applicable development standards and is available on our website: www.chesterfield.gov/plan. Please contact the Building Inspections Department at (804) 748-1057 and the Fire Department at (804) 748-1360 for their codes and requirements.

The information provided to you is based on the facts and information you have provided along with current adopted ordinances, regulations and requirements in effect as of the date of this letter. Additional facts or changed circumstances and/or future amendments or revisions to adopted ordinances, regulations or requirements may cause the statements made herein to no longer be accurate and subject to modification.

Should you disagree with this letter, you may file an appeal to the Board of Zoning Appeals within thirty (30) days of the date of this letter. The filing fee for an appeal of staff's decision is \$700.00. The decisions noted herein shall be final and unappealable if not appealed within (30) days. The foregoing applies only to issues pertaining to the Zoning Ordinance. If you have any questions, please call me at (804) 748-1050.

Sincerely,



Andrew G. Gillies, AICP
Director
Planning Department

Letter Attachment 3



DOCUMENT CERTIFICATION FORM

I certify under penalty of law that this document and all attachments [as noted above] were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I certify that I understand that the existence of a permit under [Article 6 of the Regulations] does not shield the source from potential enforcement of any regulation of the board governing the major NSR program and does not relieve the source of the responsibility to comply with any applicable provision of the major NSR regulations.

DATE: Sep 26, 2024

SIGNATURE: Robert W. Sauer

NAME: Robert W. Sauer

TITLE: VP System Operations

PHONE: 804-273-3685

EMAIL: robert.w.sauer@dominionenergy.com

REGISTRATION NO: 50396-26

COMPANY NAME: Virginia Electric and Power Company

ADDRESS: 600 Canal Street
Richmond, Virginia 23219

References: Virginia Regulations for the Control and Abatement of Air Pollution (Regulations), [9VAC5-20-230B](#) and [9VAC5-80-1140E](#).