

BY CERTIFIED U.S. MAIL

Aug 20, 2024

Mr. James E. Kyle Air Permit Manager Piedmont Regional Office Virginia Department of Environmental Quality 4949-A Cox Road Glen Allen, VA 23060

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

Dear Mr. Kyle:

Virginia Electric and Power Company d/b/a Dominion Energy (Dominion Energy) previously submitted to the Department on August 1, 2023, a revised air permit application ("Application") to construct the proposed Chesterfield Energy Reliability Center (CERC) at the James River Industrial Park adjacent to the Chesterfield Power Station. Dominion Energy is now proposing to construct CERC at the Chesterfield Power Station and is providing the attached supplemental revisions to the Application to address this relocation. Dominion Energy currently operates the Chesterfield Power Station under VA DEQ Title V Operating Permit No. PRO50396.

Dominion is providing the following revised pages to replace their counterparts in the Application:

- Section 1.0, and 1.2
- Figures 1-1 and 1-2
- Appendix D Plot Plan
- Form 7:
 - Document Certification Form
 - General Information Page
 - Signed Local Governing Body Certification Form

If you have any questions regarding this submittal, please contact T.R. Andrake at (804) 839-2760 or via email at thomas.r.andrake@dominionenergy.com.

Sincerely,

Jason P. Ericson Director, Environmental Services

Attachments

cc: Alison Sinclair, VA DEQ

1.0 Introduction

Virginia Electric and Power Company, d/b/a Dominion Energy Virginia (Dominion, formerly d/b/a Dominion Virginia Power), is proposing to install the Chesterfield Energy Reliability Center (CERC) to be located at the existing Chesterfield Power Station (CPS). The CERC project will consist of four dual fuel simple-cycle combustion turbines (SCCT) firing primarily pipeline quality natural gas, as well as having the capability to fire No. 2 fuel oil with a maximum sulfur content of 15 ppm (fuel oil). Additionally, the SCCTs will be capable of operating on an advanced gaseous fuel blend consisting of natural gas with up to 10% hydrogen (H₂ fuel blend). One benefit of combusting H₂ fuel blend is the reduction in air emissions – especially greenhouse gas (GHG) emissions. The purpose and design of the CERC project is to respond quickly with reliable, dispatchable power generation to the grid when needed by the PJM Regional Transmission Operator (RTO)¹. This includes during high demand periods, seasonal peaks, and extreme temperature events, as well as when intermittent generation resources (such as solar and wind) are unavailable or insufficient to meet customer needs. The proposed CERC dual-fuel SCCTs are focused on supporting the clean energy transition while also optimizing reliability and economics for our system customers.

PJM continues to add significant amounts of both solar and wind renewable generation capacity to its grid. Those resources are intermittent, in the sense that they depend on the availability of energy sources that fluctuate. While renewable generation reduces GHG emissions at the system-wide level, solar and wind capacity is operationally undependable with significant day-ahead and intra-day energy production variability, volatility, and intermittency. For grid stability and reliability, generating resources are required to be available to respond rapidly to changes in generation from both the renewable sources and normal changes in power demand. Failure to match generation to demand leads to frequency deviations in the interconnection, which, if severe enough, can cause customer load interruption or generators to trip offline through automated, protective action. To ensure reliability of the bulk power system, the North American Electric Reliability Corporation (NERC) has established operational requirements that must be adhered to by all responsible parties (including Dominion and PJM), such as NERC Resource and Demand Balancing (BAL) standards. This project is designed specifically to help meet these operational requirements.

¹ PJM is an RTO that is part of the Eastern Interconnection grid operating an electric transmission system serving parts of Virginia, Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, West Virginia, and the District of Columbia.



The proposed CERC SCCT units will help address PJM needs for peak firing capacity with the ability of coming online quickly. The project is being designed and permitted to follow market demand. The proposed General Electric 7FA.05 gas turbines will have a nominal power output of 250 MW-electric per turbine.

The simple-cycle turbines will be equipped with dry low-NO_x (DLN) burners, which will reduce nitrogen oxides (NO_x) emissions when combusting natural gas or H₂ fuel blend; water injection will be utilized when combusting fuel oil, to reduce NO_x emissions. In addition, a selective catalytic reduction (SCR) system will be installed to further reduce emissions of NO_x, as well as an oxidation catalyst to further reduce emissions of carbon monoxide (CO) and volatile organic compounds (VOC). Good combustion practices (GCP) and the use of clean burning fuels will reduce emissions of all pollutants including NO_x, CO, particulate matter (PM), particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), sulfuric acid mist (H₂SO₄), VOC, and Greenhouse Gas Pollutants (GHGs).

Dominion is also proposing to add black start capability to CERC with the four (4) new SCCTs and six (6) new 3,500 kilowatt-electric (kWe) (nominal) fuel oil-fired emergency generators. The SCCTs are configured to startup using electrical power provided by the grid. In the event of electrical grid failure, the emergency generators will provide the required electrical power to start up a SCCT. During black start events, each of the proposed SCCTs will have the ability to operate in low load emergency (LLE) mode, which is defined as emergency operation below minimum emission compliance load (MECL) to restore the electrical grid. One of the SCCTs could operate in LLE mode during a period of grid restoration and would continue LLE mode operation until system restoration is achieved.

The proposed project will also include the following ancillary equipment:

- One natural gas-fired fuel gas heater nominally rated at 18.8 MMBtu/hr.
- One nominal 190 bhp emergency firewater pump operating on fuel oil.

The proposed CERC project, as indicated above, will be located at and considered single source with CPS. The CERC project will be considered a "major modification" under Title I of the Clean Air Act



(CAA). Dominion is applying to the Virginia Department of Environmental Quality (VDEQ) for a prevention of significant deterioration (PSD) and minor stationary source air construction permit, as required by VDEQ. VDEQ has a U.S. Environmental Protection Agency (EPA) state implementation plan (SIP)-approved PSD and minor stationary source air construction permit program.

This application addresses the permitting requirements specified by VDEQ under the Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution, Title 9, Agency 5, Chapter 80, found in the Virginia Administrative Code (VAC) at 9 VAC 5-80.

1.1 Applicant Information

To facilitate VDEQ's review of this document, Dominion's permitting contact is identified below. VDEQ should contact this individual if additional information or clarification is required during their review process. The permitting contact information is as follows:

T.R. Andrake Environmental Consultant Dominion Energy Services, Inc. DEES – Corporate Air Programs 120 Tredegar Street Richmond, VA 23219 804-839-2760 Thomas.R.Andrake@dominionenergy.com

1.2 <u>Project Location</u>

The proposed CERC project will be constructed in Chesterfield County approximately 4 miles northeast of Chester, Virginia, at the existing CPS which is located at 500 Coxendale Road as shown in Figure 1-1 and Figure 1-2. Appendix D presents a detailed site plan of the proposed modification, along with a designated area for a future hydrogen fuel gas yard to support the CERC project.

1.3 Facility Classification

There are two major classification criteria for the proposed project, one related to its industrial character and the other to its potential to emit (PTE) air pollutants. The designation of the facility under each of these is reviewed in the following subsections.













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:	Aug 20, 2024
SIGNATURE:	Robert W. Samer
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), <u>9VAC5-20-230B</u> and <u>9VAC5-80-1140E</u>.

GENERAL INFORMATION

Person Completing Form: Adam George			Date: August 19, 2024	Registration Number: PRO-50396-26	
Company and Division Name: Virginia Electric and Power Comp	any			FIN: 54-0418825	
Mailing Address: 600 Canal Street Richmond, Virgi	nia 23219				
Exact Source Location – Include N 500 Coxendale Road Chester (Chesterfield County), VA	Name of City (County) and Fu ນ 23836	ıll Stre	et Address or	Directions:	
Facility Phone Number:	No. of Employees: TBD		Property A TBD	Area at Site:	
Person to Contact on Air Pollution	Matters – Name and Title:	Conta	act Phone Nu	mber: (804) 839-2760	
Name: T.R. Andrake			Contact Email: thomas.r.andrake@dominionenergy.com Contact Fax:		
Latitude and Longitude Coordinate 37°22'54.43" N, 77°23'02.86"W	es OR UTM Coordinates of F	acility	:		
Reason(s) for Submission (Chec	k all that apply):				
State Operating Permit	This permit is applied for p Administrative Code, 9 VA	ursua C 5 C	nt to provision hapter 80, Arti	s of the Virginia icle 5 (SOP)	
New Source	This permit is applied for p Virginia Administrative Coo	ursua le:	nt to the follow	ving provisions of the	
X Modification of a Source	9 VAC 5 Chapter 80, Article 6 (Minor Sources) X 9 VAC 5 Chapter 80, Article 8 (PSD Major Sources)				
Relocation of a Source	9 VAC 5 Chapter 80	, Artic	e 9 (Non-Atta	inment Major Sources)	
Amendment to a Permit Date	d: Permit Type	e:	SOP (Art. 5)	NSR (Art. 6, 8, 9)	
Amendment Type:	This amendment is requested pursuant to the provisions of:				
Administrative Amendment Minor Amendment Significant Amendment	9 VAC 5-80-970 (Art. 5 9 VAC 5-80-980 (Art. 5 9 VAC 5-80-990 (Art. 5 9 VAC 5-80-990 (Art. 5 9 VAC 5-80-1270 (Art. 6 9 VAC 5-80-1280 (Art. 6	Adm.) Minor) Sig.) S Adm. S Minor	9 VAC 9 VAC 9 VAC 9 VAC	5-80-1935 (Art. 8 Adm.) 5-80-1945 (Art. 8 Minor) 5-80-1955 (Art. 8 Sig.) 5-80-2210 (Art. 9 Adm.) 5-80-2220 (Art. 9 Minor)	
	9 VAC 5-80-1290 (Art. 6	Sig.)	9 VAC	5-80-2230 (Art. 9 Sig.)	
Other (specify):					
Explanation of Permit Request (a Dominion is proposing to install the Che Station (CPS) located at 500 Coxendate CERC project will consist of four dual fu well as having the capability to fire No. 2 capable of operating on an advanced ga	Attach documents if needed sterfield Energy Reliability Center e Road in Chesterfield County, app el simple-cycle combustion turbine 2 fuel oil with a maximum sulfur co aseous fuel blend consisting of national stellation (OCR) acternation): (CERC proxima es (SC) ntent o cural ga	C) to be located a ately 4 miles nort CT) firing primari f 15 ppm (fuel oi as with up to 10%	at the existing Chesterfield Power heast of Chester, Virginia. The ily pipeline quality natural gas, as il). Additionally, the SCCTs will be 6 hydrogen (H_2 fuel blend). The	

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VIRGINIA DEPARTMENT OF ENVIRON	MENTAL QUALITY - AIR PERMITS CERTIFICATION FORM		
Business Entity Name (same name on file with the Virginia SCC) Virginia Electric and Power Company	Registration Number: PRO 50396-26		
Applicant's Name: Robert W. Sauer	Name of Contact Person at the site: Troy Breathwaite		
Applicant's Mailing address: 600 Canal Street Richmond, VA 23219	Contact Person Telephone Number: (804) 441-4811		
Facility location (also attach map): 500 Coxendale Road, Chester, VA, Chesterfield County			
Facility type, and list of activities to be conducted: Electric Power Generation			
The applicant is in the process of completing an application for Department of Environmental Quality. In accordance with § 10	an air pollution control permit from the Virginia 1-1321 1. Title 10.1. Code of Virginia (1950), as		
amended, before such a permit application can be considered the governing body of the county, city or town in which the faci facility are consistent with all applicable ordinances adopted pu 15.2. The undersigned requests that an authorized representa- below.	complete, the applicant must obtain a certification from lity is to be located that the location and operation of the ursuant to Chapter 22 (§§ 15.2-2200 <u>et seq</u> .) of Title tive of the local governing body sign the certification		
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[THE LOCAL GOVERNMENT REPRESENTATIVE SHOULD FORWARD THE SIGNED CERTIFICATION TO THE APPROPRIATE DEQ REGIONAL OFFICE AND SEND A COPY TO THE APPLICANT.] Return to "What Pages Do I Fill Out For My Facility?"

