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June 18, 2018

**BY HAND DELIVERY**

Joel H. Peck, Clerk  
Document Control Center  
State Corporation Commission  
1300 East Main Street  
Tyler Building – 1st Floor  
Richmond, Virginia 23219

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*Application of Virginia Electric and Power Company  
For approval and certification of electric facilities:  
Lanexa-Northern Neck Line #224  
230 kV Transmission Line Partial Rebuild Projects  
Case No. PUR-2018-00090*

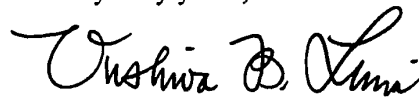
Dear Mr. Peck:

Please find enclosed for filing in the above-captioned proceeding an unbound original and fifteen (15) copies of the application for approval of electric facilities on behalf of Virginia Electric and Power Company (the "Company"). This filing contains the Application, Appendix, Direct Testimony, and DEQ Supplement, including attachments.

As indicated in Section II.A.12.b of the Appendix, three (3) copies of the map of the Virginia Department of Transportation "General Highway Map" for New Kent, King William, and King and Queen Counties have been marked as required and were hand delivered to the Commission's Division of Energy Regulation today. The Company also hand delivered to the Division of Energy Regulation a CD-ROM containing the digital geographic information system ("GIS") map required by § 56-46.1 of the Code of Virginia, which is Attachment II.A.2 to the Appendix.

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

Very truly yours,



Vishwa B. Link

Enclosures

cc: William H. Chambliss, Esq.  
David J. DePippo, Esq.



**Dominion  
Energy<sup>®</sup>**

**Application, Appendix,  
DEQ Supplement, Direct  
Testimony and Exhibits of  
Virginia Electric and Power  
Company**

**Before the State Corporation  
Commission of Virginia**

**Lanexa-Northern Neck Line  
#224 230 kV Transmission  
Line Partial Rebuild Projects**

**Application No. 287**

**Case No. PUR-2018-00090**

**Filed: June 18, 2018**

**Volume 1 of 2**

COMMONWEALTH OF VIRGINIA  
BEFORE THE  
STATE CORPORATION COMMISSION

APPLICATION OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL AND CERTIFICATION  
OF ELECTRIC FACILITIES

**Lanexa-Northern Neck Line #224  
230 kV Transmission Line Partial Rebuild Projects**

Application No. 287

Case No. PUR-2018-00090

Filed: June 18, 2018

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COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION

APPLICATION OF )  
 )  
VIRGINIA ELECTRIC AND POWER COMPANY ) Case No. PUR-2018-00090  
 )  
For approval and certification of electric )  
transmission facilities: Lanexa-Northern Neck )  
Line #224 230 kV transmission line )  
partial rebuild projects )

**APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL AND CERTIFICATION OF ELECTRIC FACILITIES:  
LANEXA-NORTHERN NECK LINE #224 230 KV TRANSMISSION LINE  
PARTIAL REBUILD PROJECTS**

Pursuant to § 56-46.1 of the Code of Virginia (“Va. Code”) and the Utility Facilities Act, Va. Code § 56-265.1 *et seq.*, Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”), by counsel, files with the State Corporation Commission of Virginia (the “Commission”) this application for approval and certification of electric facilities (the “Application”). In support of its Application, Dominion Energy Virginia respectfully shows as follows:

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia’s electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

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2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system.

3. In this Application, in order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation (“NERC”) Reliability Standards, Dominion Energy Virginia proposes to rebuild, entirely within existing right-of-way, four separate segments of its existing Lanexa-Northern Neck Line #224 230 kilovolt (“kV”) transmission line in King and Queen, King William, and New Kent Counties based on the condition of the foundations and structures.

4. In the four separate segments, the Company proposes to: (i) remove and replace nine structures and foundations spanning the Pamunkey River and crossing adjacent tidal marshlands (the “Pamunkey River Rebuild”); (ii) remove and replace seven structures and foundations spanning the Mattaponi River and crossing adjacent tidal marshlands (the “Mattaponi River Rebuild”); (iii) remove and replace two double circuit COR-TEN<sup>®1</sup> lattice structures and two adjacent wood H-frame structures, which are currently carrying a single transmission circuit, and foundations on the existing 230 kV Line #224 crossing I-64 in New Kent County west of the intersection of I-64 and Route 3 (the “I-64 Rebuild”); and (iv) remove and replace one double circuit COR-TEN<sup>®</sup> lattice structure, which is currently carrying one transmission circuit for Line #224 and another for Line #2016, and foundation, with two double deadend 2-pole structures and foundations (the “Diascund Rebuild”) (collectively, the Pamunkey River Rebuild, Mattaponi River

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<sup>1</sup> Registered trademark of United States Steel Corporation.

Rebuild, I-64 Rebuild, and Diascund Rebuild are referred to as the “Line #224 Partial Rebuild Projects” or the “Rebuild Projects”).

5. The proposed Line #224 Partial Rebuild Projects will replace aging infrastructure that is at the end of its service life in order to comply with the Company’s mandatory transmission planning criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system and to maintain the overall generating capabilities of the system. Specifically, the need for the proposed Rebuild Project is described in detail in Section I of the appendix (“Appendix”) attached to this Application, and is as follows for each of the four segments:

- a. The purpose of the Pamunkey River Rebuild is to remove and replace six double circuit COR-TEN® lattice structures (Structures #224/228 - #224/233), one tubular 3-pole steel structure (Structure #224/227), and two wood H-frame structures (Structures #224/226 and #224/234), which are currently carrying a single transmission circuit, and foundations spanning the Pamunkey River and crossing adjacent tidal marshlands due to the deteriorating condition of the COR-TEN® lattice structures’ foundations. Severe concrete and steel deterioration has reduced the structural capacity of these foundations, jeopardizing the reliability of Line #224.
- b. The purpose of the Mattaponi Rebuild Project is to remove and replace three double circuit COR-TEN® lattice structures (Structures #224/182 - #224/184), two tubular 3-pole steel structures (Structures #224/181 and #224/185), and two wood H-frame structures (Structures #224/180 and #224/186), which are currently carrying a single transmission circuit and a single distribution circuit, and foundations spanning the Mattaponi River and crossing adjacent tidal marshlands due to the

deteriorating condition of the COR-TEN<sup>®</sup> lattice structures' foundations. Severe concrete deterioration has reduced the structural capacity of these foundations, jeopardizing the reliability of the Line #224.

- c. The purpose of the I-64 Rebuild is to replace two double circuit COR-TEN<sup>®</sup> lattice structures (Structures #224/269 and #224/270), which are currently carrying a single transmission circuit, and foundations crossing I-64 in New Kent County west of the intersection of I-64 and Route 33 because of the corrosion of the COR-TEN<sup>®</sup> material, which results in loss of base steel from the structural members. This type of tower has inherent problems stemming from the effects of "pack-out."<sup>2</sup> These structures have experienced inherent corrosion and deterioration, requiring repairs, including replacement of tower members. In addition, the I-64 Rebuild will replace two wood H-frame structures (Structures #224/268 and #224/271) that are adjacent to the two COR-TEN<sup>®</sup> lattice structures carrying the conductor and shield wire across Interstate I-64 and would experience a change in load due to the displacement of the conductor as a result of replacing the two COR-TEN<sup>®</sup> lattice structures. As a result of the change in load, the two existing wood H-frames were determined to no longer be adequate and are being proposed for replacement as a part of the I-64 Rebuild.
- d. The purpose of the Diascund Rebuild is to replace one double circuit COR-TEN<sup>®</sup> lattice structure, which is currently carrying one transmission circuit for Line #224 and another for Line #2016, and foundation because of the corrosion of the COR-

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<sup>2</sup> The term "pack-out" describes deformation of tower joints caused by the in-place corrosion of the steel. This pack-out is known to cause member cracking and fastener failure due to the deformation resulting from the phenomenon.



TEN<sup>®</sup> material, which results in loss of base steel from the structural members. This type of tower has inherent problems stemming from the effects of “pack-out.” The structure has experienced inherent corrosion and deterioration, requiring repairs, including replacement of tower members. The Company plans to replace one structure with two structures to minimize the overall scope of the work as conductor work would be required if the Diascund Rebuild proceeded as a one-for-one structure replacement. Therefore, no conductor work is anticipated by replacing the existing structure with two structures.

6. The line length of the existing right-of-way to be used for the Line #224 Partial Rebuild Projects is broken down by each of the four segments and is as follows:
  - a. The length of the existing right-of-way to be used for the Pamunkey River Rebuild is approximately 1.7 miles long from the northern side of Sweet Hall Road (SR 634) to the southern side of Old Sweet Hall Ferry Crossing (SR 624).
  - b. The length of the existing right-of-way to be used for the Mattaponi River Rebuild is approximately 1.3 miles long from the eastern side of Court House Landing Road (SR 655) to the northern side of Wakema Road (SR 640).
  - c. The length of the existing right-of-way to be used for the I-64 Rebuild is 0.5 mile long from the northern side of Stage Road (SR 632) to the eastern side of Good Hope Road (SR 627).
  - d. The Diascund Rebuild will consist of replacing a single structure with two structures, Structure #224/297, 2016/6, located east of North Waterside Drive (SR 627), on the western bank of the Diascund Creek Reservoir.

7. The conceptual cost of the Line #224 Partial Rebuild Projects, which assumes completion by May 2021, is approximately \$30.7 million (2018 dollars). Approximately \$1.0 million of that total is for substation- and distribution-related costs.

8. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for the Line #224 Partial Rebuild Projects. The impact of the proposed Rebuild Projects on scenic, environmental, and historical features is described in detail in Section III of the Appendix attached to this Application.

9. Based on consultations with the Virginia Department of Environmental Quality (“DEQ”), the Company has developed a supplement (“DEQ Supplement”) containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

10. Based on the Company’s experience, the advice of consultants, and a review of published studies by experts in the field, the Company believes that there is no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company’s existing or proposed facilities. Section IV of the Appendix provides further details on Dominion Energy Virginia’s consideration of the health aspects of electric and magnetic fields.

11. Section V of the Appendix provides a proposed route description for public notice purposes and a list of federal, state, and local agencies and officials that the Company has or will notify about the Application.

12. In addition to the information provided in the Appendix and the DEQ Supplement, this Application is supported by the prefiled direct testimony of Company Witnesses Robert B.

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Smith; Sarah Rana; Furmose J. Gomez; W. Chase Bland; and John A. Mulligan filed with this Application.

WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

- (a) direct that notice of this Application be given as required by § 56-46.1 of the Code of Virginia;
- (b) approve pursuant to § 56-46.1 of the Code of Virginia the construction of the Rebuild Projects or find the I-64 Rebuild and the Diascund Rebuild ordinary extensions or improvements in the usual course of business; and,
- (c) grant a certificate of public convenience and necessity for the facilities under the Utility Facilities Act, § 56-265.1 *et seq.* of the Code of Virginia.

VIRGINIA ELECTRIC AND POWER COMPANY

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June 18, 2018