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January 5, 2018

VIA HAND DELIVERY

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

Application of Virginia Electric and Power Company
For approval and certification of electric transmission facilities:
Haymarket 230 kV Double Circuit Transmission Line and 230-34.5 kV Haymarket Substation
Case No. PUE-2015-00107

Dear Mr. Peck:

Enclosed for filing in the above-captioned proceeding, please find the PUBLIC version of Virginia Electric and Power Company's *Remand Direct Testimony and Exhibits*. 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.

Best regards,

Vishwa B. Link

Vishwa B. Link

Enc.

cc: Hon. Glenn P. Richardson, Hearing Examiner
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CERTIFICATE OF SERVICE

I hereby certify that on this 5th day of January 2018, a true and accurate copy of the foregoing filed in Case No. PUE-2015-00107 was sent via electronic mail and hand-delivered or mailed first class, postage pre-paid, to the following:

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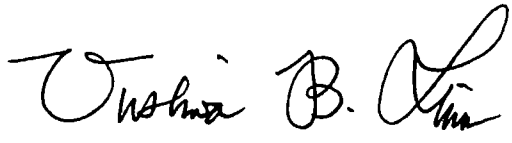

Remand Direct Testimony, Exhibits and Schedules of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

Haymarket 230 kV Double Circuit Transmission Line and 230-34.5 kV Haymarket Substation

Case No. PUE-2015-00107

Filed: January 5, 2018

Public Volume 1 of 1

Virginia Electric and Power Company
Haymarket 230 kV Double-Circuit Transmission Line and 230-34.5 kV Haymarket Substation

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Remand Direct Testimony and Exhibits

POTTER

REMAND DIRECT TESTIMONY
OF
HARRISON S. POTTER
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUE-2015-00107

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Harrison S. Potter, and I am an Engineer III in the Distribution System Planning Department of the Company. My business address is 701 East Cary Street, Richmond, Virginia 23219.

Q. Have you previously submitted testimony in this proceeding?

A. Yes. I submitted pre-filed direct testimony on behalf of Dominion Energy Virginia to the State Corporation Commission of Virginia (the "Commission") in this proceeding on November 6, 2015. I also submitted pre-filed rebuttal testimony on behalf of the Company on June 9, 2016. Finally, I testified at the evidentiary hearing on direct and rebuttal on June 21, 2016, and June 22, 2016, respectively.

Q. What is the purpose of your remand direct testimony?

A. I am providing remand direct testimony in continuing support of the Company's application to (i) convert its existing 115 kV Gainesville-Loudoun Line #124, located in Prince William and Loudoun Counties, to 230 kV operation; (ii) construct in Prince William County, Virginia and the Town of Haymarket, Virginia a new 230 kV double circuit transmission line from a tap point approximately 0.5 mile north of the Company's existing Gainesville Substation on the converted Line #124 to a new 230-34.5 kV

Haymarket Substation; and (iii) construct a 230-34.5 kV Haymarket Substation on land in Prince William County to be owned by the Company (collectively, the "Project").

Specifically, I will provide an update to my testimony about the continuing need for the Project from a distribution planning perspective.

Q. Are you sponsoring any exhibits as part of your remand direct testimony?

A. Yes. Company Exhibit No. __, HSP, consisting of Confidential Remand Direct Schedule 1.

Q. Has the Commission previously found that the Project is needed?

A. Yes. On April 6, 2017, the Commission entered an Interim Order, which, among other things, found that the public convenience and necessity require the Company to construct the Project and that a certificate of public convenience and necessity should be issued authorizing the Project as set forth in the Interim Order. (Interim Order at 7.) On June 23, 2017, the Commission entered its Final Order wherein the Commission restated "that the proposed Project is needed." (Final Order at 3.)

In its December 6, 2017 Order Remanding for Further Proceedings, the Commission directed the Hearing Examiner to "recommend whether the Commission should continue to find that this [P]roject is needed." (Remand Order at 2.)

Q. Is the Project still necessary to support load growth in the Haymarket Load Area?

A. Yes. As I testified as part of my direct testimony, the Haymarket Load Area (which encompasses the area west of Route 29 and paralleling Route 50 and Heathcote Boulevard) is currently served by three 34.5 kilovolt ("kV") distribution circuits

("DC")—DC #379, #695, and #378. Gainesville DC #379 and #695 are rated for 36 Mega Volt Amps ("MVA") and Gainesville DC #378 is rated for 54 MVA, for a total of 126 MVA for all three lines. I explained how the DCs would soon become overloaded with the projected loads from the data center projects, along with the existing load in the Haymarket Load Area and the approximately 1% projected load growth separate from the data center projects. As of the filing of this Remand Direct Testimony on January 5, 2018, loading issues continue to exist and will worsen as load growth in the Haymarket Load Area continues.

Q. What is the existing and subscribed load on DC #379, #695, and #378 from customers in the Haymarket Load Area?

A. As of the date of filing for this Remand Direct Testimony, the existing and subscribed load on these three DCs is as follows:

Circuit	2017 Load (MVA)	Max. Capacity (MVA)	% Loaded
DC #379	30.7	36	85.3%
DC #695	35.7	36	99.2%
DC #378	45.7	54	84.6%

These numbers include the Customer's existing data center buildings, Customer Building "0" (i.e., the building that is adjacent to the Haymarket Campus) and 1 (i.e., the first of the new buildings on the Haymarket Campus), and other customers. These numbers do not include any of the anticipated load from Customer Buildings 2 and 3. Currently, there is a total of 13.9 MVA of available capacity on these three DCs available for additional load growth in the Haymarket Load Area.

Q. The remand direct testimony of Company Witness Mark R. Gill addresses certain aspects of likely load growth in the Haymarket Load Area from a transmission planning perspective. On the distribution side, do you know of any existing or imminent load growth in the Haymarket Load Area fed from these three DCs?

A. Yes. I am able to provide information regarding the following projects in the Haymarket Load Area that will contribute additional load in 2018. The table below describes projects that are currently in the distribution design or construction queue for the Haymarket Load Area in 2018, and the DC from which each project will be served.

[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

This new connected load represents approximately 5% load growth for the Gainesville Substation in 2018 without accounting for any additional customers or additional load from the Customer's data center campus.

There has also been discussion in this proceeding regarding potential developments at Haymarket Crossing (i.e., the Home Depot development across Route 55 from the proposed Haymarket Substation) and Carter's Mill (i.e., new age-restricted community immediately to the west of the proposed Haymarket Substation). The Company is not aware of firm dates for connection to the distribution grid for either of these customers. However, anticipated connected loads are described in the following table.

Development	*Anticipated Connected Load (MVA)	Circuit
Home Depot (James Madison Marketplace)	0.75	695
Ancillary Shopping around Home Depot	1	695
Carter's Mill Residential Development	2	695
Total	**3.75**	

*Anticipated connected load values were generated from similar types of developments.

Assuming these developments occur in 2019, this load alone would represent another 2.8% load growth in that year again without accounting for any additional customers or load from the Customer's data center campus.

Q. How do these known and anticipated additional loads impact the available capacity on the three DCs discussed earlier in your testimony?

A. As noted previously, currently, there are 13.9 MVA of available capacity on DC #379, #695, and #378 combined. Upon connection of Customer Buildings 2 and 3 **[BEGIN**

CONFIDENTIAL] [redacted] [BEGIN CONFIDENTIAL], there will only be approximately 3.65 MVA available for future load growth in the Haymarket Load Area. And again, this does not count any actual load from Customer Buildings 2 or 3, which will add significant load in the future.

Q. What sort of issues arise with fully loaded distribution circuits generally?

A. As I explained in my rebuttal testimony, fully loaded distribution circuits prevent the Company from effectively responding to planned and unplanned outage events. During unplanned outage events, such as a car hitting a pole, a tree falling on the lines, or lightning striking, the Company typically operates in a "switch-before-fix" method. In a "switch-before-fix" method, the Company switches load from the affected circuit to an adjacent circuit with capacity to quickly restore electricity to as many customers as possible. When distribution circuits are as overloaded as DC #379, #695, and #378, the Company may not have the available capacity to switch any load during an outage event. This means that the Company cannot operate in a "switch-before-fix" method, and instead has to operate in a "fix-before-restore" method. The "fix-before-restore" method leads to longer outage times for all customers on the affected circuit. Moreover, in the event the Company needs to take planned outages for maintenance operations, connecting new customers, or other purposes, existing customers in the Haymarket Load Area may experience extended outage times due to the lack of available capacity on the circuits in the load area that they otherwise would have not experienced.

Q. Could you provide a practical example of this problem?

A. Yes. On June 3, 2017, the Company experienced equipment failure on DC #379 that could have resulted in an 8 to 9 hour outage for the Novant Health UVA Haymarket

Medical Center if the temperature would have been 10 to 15 degrees warmer. This is because the higher temperatures would have created additional load that would have prevented the Company from operating in the "switch-before-fix" method. Considering that the high temperature that day in Haymarket was only 84°F with 34% humidity, it is not hard to imagine that, under the current electrical circumstances, the risk of longer outages due to the necessity of the "fix-before-restore" method is significant.

Q. What sort of issues could arise with DC #695 specifically?

A. DC #695 runs to the western portion of the Haymarket Load Area. The remaining 0.3 MVA of capacity on DC #695 could be overloaded by the addition of a commercial building or new large residential development. The Remand Direct Testimony of Company Witness Gill addresses examples of recently announced and planned development in the Haymarket Load Area, which could—and likely will—account for additional demand on the area's DCs in the near future beyond the projects I have discussed herein.

Q. Could Dominion Energy Virginia serve the Haymarket Load Area's anticipated load growth without the proposed Project?

A. No. The existing distribution infrastructure is not adequate to serve the Haymarket Load Area's planned and anticipated load growth from the Company's existing Gainesville Substation.

Q. Does the Company have any reason to believe that additional data center load growth will not materialize in the Haymarket Load Area?

A. No. The Company has been repeatedly assured by the Customer developing a data center

campus in western Prince William County that it is committed to its development plans and intends to move forward with construction of two additional data center buildings. My Confidential Remand Direct Schedule 1 addresses this further.

Moreover, Prince William County continues to be a desirable and dynamic area for residential, commercial and other development, all of which means additional load on the distribution system.

Q. Would the proposed Project accommodate the area's load growth?

A. Yes. Upon energization of the Haymarket Substation, the Company will use that station to serve all customers west of Route 15. At the time of my rebuttal, this was 456 customers including Haymarket Village Center and the Novant Health Medical Center for a total of approximately 5.5 MVA. As of December 2017, the number of customers west of Route 15 has grown to 478. I would also expect the Haymarket Substation to serve any other additional development that may arise in this area prior and subsequent to its energization.

Also upon energization of the Haymarket Substation, a new distribution circuit from that station will be installed to regularly serve all customers west of Route 15. This new circuit will include two automated loop schemes or restoration schemes that will restore commercial and residential load (over 2,800 customers) currently being served by DC #379 and #695 in under two minutes during certain outage scenarios. These schemes will decrease the outage time per event and give the Company operational flexibility, as previously discussed in my Rebuttal Testimony in this proceeding.

Q. When is the Project now needed?

A. As set forth in my Confidential Remand Direct Schedule 1, **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

Thus, the 3.65 MVA of total available capacity discussed earlier on the Haymarket Load Area's three DCs will be fully consumed by the end of 2019, if not sooner. Therefore, the revised need date for the Project is **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** approximately by June 1, 2019.

The Company anticipates that if the Project is approved for construction and operation on an overhead route, the Project's in-service date will be approximately 20–24 months from the date of a final Commission Order. If the Commission approves the Project on the I-66 Hybrid Route, the Project's in-service date will be approximately 32–36 months from the date of a final Commission Order.

From my discussions with the Project Manager, I understand these construction estimates are slightly longer than originally presented through the Company's rebuttal testimony in this proceeding in an attempt to account for and represent the uncertainty regarding the time needed for the substation permitting, real estate acquisition, and other unanticipated construction delays.

Q. Does this conclude your remand direct testimony?

A. Yes, it does.

Confidential Remand Direct Schedule 1
Entirely Redacted