Dominion Energy Services, Inc.
Law Department
120 Tredegar Street
Richmond, VA 23219

Valerie M. Chafee
Legal Specialist
Direct: (804) 819-2696; Facsimile: (804) 819-2183
Email: valerie.m.chafee@dominionenergy.com

VIA ELECTRONIC DELIVERY

January 9, 2018

William H. Chambliss, Esq.
Alisson P. Klaiber, Esq.
Andrea Macgill, Esq.
Office of General Counsel
Tyler Building – 10th Floor
1300 East Main Street
Richmond, Virginia 23219

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

Dear Counsel:

Enclosed are the responses of Virginia Electric and Power Company to Question Nos. 45(d), 46 and 49-52 of the Interrogatories and Requests for Production of Documents by the Staff of the State Corporation Commission (Sixth Set). The responses to Question Nos. 44, 45(a)-(c) and 47 are confidential and being provided under separate cover.

Should you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

/s/ Valerie M. Chafee

Valerie M. Chafee
Legal Specialist

Enclosure

cc: Mr. Neil Joshipura
Cliona Mary Robb, Esq.
Michael J. Quinan, Esq.
James G. Ritter, Esq.
Todd Sinkins, Esq.
Courtney Harden, Esq.
Michael J. Coughlin, Esq.
Wendy Alexander, Esq.
Vishwa Link, Esq.
Lisa R. Crabtree, Esq.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 45(d) of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

David J. Depippo
Senior Counsel
Dominion Energy Services, Inc.

Question No. 45

For any unconstructed buildings on the Haymarket Campus, please provide the following information:

(d) Copies of all communication between the Company and VADATA, Inc., including legal counsel or other agents or representatives of VADATA, Inc., related to electric service to the Haymarket Campus, including, but not limited to, the projected need dates for each building, dated on and after June 22, 2016.

Response:

(d) The Company is in the process of collecting materials responsive to this request and will provide such materials when available.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 46 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Chris Behrens
Electric T & D Project Manager III
Dominion Energy Technical Solutions

Question No. 46

Please provide an updated in-service date for the proposed Project, taking into account delays in permitting and construction.

Response:

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.

These construction estimates are slightly longer than originally presented through the Company's rebuttal testimony in the 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.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 49 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Harrison S. Potter
Engineer III
Dominion Energy Virginia

The following response to Question No. 49 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

David J. Depippo
Senior Counsel
Dominion Energy Services, Inc.

Question No. 49

According to the Application, there are three 34.5 kV distribution circuits ("DC") serving the Haymarket load area: DC#378, DC#379, and DC#695. Attachment I.B.2 to the Appendix of the Application shows the historical and projected loads for these three 34.5 kV DCs. Provide separate, updated tables that incorporate any anticipated new loads *(e.g.,* Carter's Mill) on these three circuits, and identify when each circuit is projected to experience an overload condition for the following two scenarios:

(a) Buildings 2 and 3 are never placed into service;

(b) Buildings 2 and 3 are placed into service by the Company's updated in-service date.

Response:

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 49 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Harrison S. Potter
Engineer III
Dominion Energy Virginia

The following response to Question No. 49 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

David J. Depippo
Senior Counsel
Dominion Energy Services, Inc.

Question No. 49

According to the Application, there are three 34.5 kV distribution circuits ("DC") serving the Haymarket load area: DC#378, DC#379, and DC#695. Attachment I.B.2 to the Appendix of the Application shows the historical and projected loads for these three 34.5 kV DCs. Provide separate, updated tables that incorporate any anticipated new loads *(e.g.,* Carter's Mill) on these three circuits, and identify when each circuit is projected to experience an overload condition for the following two scenarios:

(a) Buildings 2 and 3 are never placed into service;

(b) Buildings 2 and 3 are placed into service by the Company's updated in-service date.

Response:

(a) The Company objects to this request to the extent it requires original work. Notwithstanding and subject to the foregoing objections, the Company provides the following response. The response below required original work and presents a hypothetical. See the below chart for the load projections for DC#378, DC#379, and DC#695. Please note, these projections exclude any additional data center load growth from the existing buildings, as well as the hypothetical presented in the question that Buildings 2 and 3 are never placed into service. In the hypothetical scenario that Building 2 and Building 3 are never placed into service, DC#695 will overload in 2018 with the existing and subscribed load on the circuit. DC#378 will be loaded to 89% and DC#379 will be loaded to 96% in 2018.

	NOL (MVA)	2016	2017	2018	2019	2020	2021	2022	2023	2024
Gainesville TX#1	**84**	**44.2**	**44.6**	**48.5**	**48.8**	**49.1**	**49.3**	**49.6**	**49.9**	**50.1**
379	36	30.4	30.7	34.5	34.6	34.7	34.8	34.9	35.1	35.2
380	36	13.8	13.9	14.1	14.2	14.4	14.5	14.6	14.8	14.9

Gainesville TX#4	**84.0**	**79.7**	**81.4**	**83.9**	**87.8**	**88.1**	**88.5**	**88.9**	**89.2**	**89.6**
378	54	44.3	45.7	47.8	51.6	51.8	52.0	52.2	52.4	52.6
695	36	35.4	35.7	**36.1**	**36.2**	**36.4**	**36.5**	**36.7**	**36.8**	**36.9**

Continued operation of a distribution network at or near capacity is not prudent utility practice.

The Company objects to this request because it calls for a hypothetical and is vague. The question presumes that Buildings 2 and 3 are placed into service past the dates anticipated by the Customer. Buildings 2 and Buildings 3 cannot be served until Haymarket Substation is energized. See the Remand Direct Testimony of Company Witness Potter which notes that the revised need date for the Project is June 1, 2019, but the I-66 Overhead Route is anticipated to take 20-24 months to construct from Final Order while the Hybrid Route is anticipated to take 32-36 months from Final Order. Either route will result in the Haymarket Transmission Line being completed later than the revised need date. Assuming a Commission Final Order by June 1, 2018, the I-66 Overhead Route could be placed in-service in 1Q or 2Q 2020, with the Hybrid Route being placed into service in 1Q or 2Q 2021.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 50 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Harrison S. Potter
Engineer III
Dominion Energy Virginia

Question No. 50

Please describe the feasibility of uprating the existing DC#379 currently rated at 36 MVA to match the 54 MVA capacity of DC#378. Provide the advantages and disadvantages of using this uprated circuit to serve the Haymarket load area, including the existing operational data center buildings (Buildings 0 and 1) and any new, projected non-data center loads only *(i.e.,* excluding Buildings 2 and 3).

Response:

A 54 MVA capacity circuit is constructed with 795 aluminum overhead conductor or parallel 1000 kcmil AL underground cable. Paralleled 1000 kcmil aluminum underground cable is typically used for "get-a-ways" from a substation to an overhead pole line prior to serving any customers or an entirely underground circuit feeding a single customer. Operating a paralleled 1000 kcmil circuit is significantly different than a single cable 1000 kcmil aluminum circuit. Cutting multiple switches into a paralleled 1000 kcmil aluminum circuit that feeds residential and commercial customers is a non-preferred and problematic arrangement to operate. The Company has only one location on its system in which it uses such arrangement, and is in the process of examining solutions to fix the arrangement at that location because of operational concerns.

Additionally, Dominion Energy Virginia would specifically not recommend uprating DC#379 to a 54 MVA capacity circuit due to its existing configuration. The second three miles of DC#379 are currently in a single bulk feed arrangement with nine switches cut in the run feeding 1/0 loops that serve the residential and commercial customers. Additionally, the DC#379 circuit path would be very difficult to parallel due to the physical constraints of the circuit path.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 51 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Harrison S. Potter
Engineer III
Dominion Energy Virginia

The following response to Question No. 51 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision as it pertains to legal matters.

/s/ David J. DePippo

David J. Depippo
Senior Counsel
Dominion Energy Services, Inc.

Question No. 51

Please describe the feasibility of adding an additional distribution circuit to the Haymarket load area from the Gainesville Substation to serve as an alternate feed to the currently operational data center buildings. Include the cost, reliability, constructability, and environmental impacts of this alternative. If this additional distribution circuit is feasible, would that allow the Company to operate a "switch-before-restore" method for the currently operational data center buildings?

Response:

The Company objects to this request to the extent it would require original work. Notwithstanding and subject to the foregoing objections, the Company provides the following response.

A new distribution circuit out of Gainesville Substation would require a new circuit path from Gainesville Substation to the Haymarket Load Area. Currently, Dominion Energy Virginia has

two circuit paths to Haymarket. DC#379 and DC#695 are already on a double circuit pole line and Dominion Energy Virginia does not triple build pole lines for significant mileage. The Company's distribution planning group inquired during the design and construction phase of DC#378 to build a second circuit and it was determined that due to physical and rights-of-way constraints the route was limited to a single circuit. See also Section 1.B of the Appendix.

Assuming the Company was able to obtain all of the necessary easements for a new six-mile long distribution feeder from Gainesville to the Haymarket site, the plan would relieve Gainesville DC #378 and DC#695 of a portion of its Building 0 responsibility assuming the Company builds a traditional 36 MVA circuit. Thermally, this solution would work; however, prudent utility practice would not recommend installing six-mile long circuits to feed a load center. See fn. 8 of the Appendix. Using Gainesville to serve the Haymarket data center campus was always meant to be a temporary solution to power the Customer until a permanent substation solution could be permitted and constructed.

Additionally, the construction of an additional distribution circuit to the Haymarket Load Area would not support service to Buildings 2 and 3 of the Haymarket data center campus.

Virginia Electric and Power Company
Case No. PUE-2015-00107
Virginia State Corporation Commission Staff
Sixth Set

The following response to Question No. 52 of the Sixth Set of Interrogatories and Requests for Production of Documents Propounded by the Virginia State Corporation Commission Staff received on December 19, 2017 has been prepared under my supervision.

Jon M. Berkin
Partner
Environmental Resources Management, Inc.

Question No. 52

Please provide a description of all routes and variations the Company deems constructible. For each route the Company considers constructible, provide a map of the route along with the proposed variations *(e.g.,* 1-66 Overhead route with the updated Jordan Lane and FST Optimization route variations).

Response:

See the Direct Remand Testimony and Schedules of Company Witness Jon M. Berkin, filed on January 5, 2018 in Case No. PUE-2015-00107.