June 1, 2016

Yon Lambert
Director of Transportation and Environmental Services
City of Alexandria
301 King Street
Alexandria, VA 22314

Dear Mr. Lambert,

As you know, in 2014 Dominion Virginia Power (DVP) announced the need for an electric transmission solution that would relieve capacity overloads along existing 230kV underground transmission lines that follow Route 1 from Potomac Yards to the South Carlyle area of the City. The lines that are projected to exceed capacity connect three substations that distribute electricity to tens of thousands of customers within the City.

This overload scenario was identified during federally mandated reliability modeling. The Federal Energy Regulatory Commission (FERC) has designated the North American Electric Reliability Corporation (NERC) as the governing entity that establishes and enforces electric reliability standards for the bulk power system. The NERC reliability standards establish minimum reliability criteria with which FERC requires all electric utilities comply. As authorized by the State Corporation Commission of Virginia (SCC), DVP joined Regional Transmission Organization (RTO) PJM Interconnection LLC ("PJM") in 2005. Power flow modeling utilizing the appropriate software and tools is conducted within the guidelines of PJM's federally approved planning and modeling practices commonly referred to as the Regional Transmission Expansion Planning (RTEP) Process. The RTEP Process identifies violations of NERC Reliability Criteria and the solutions to resolve these reliability violations.

DVP's and PJM's power flow modeling has identified deficiencies along the existing 230kV transmission lines that connect the Glebe, North Alexandria, and South Carlyle substations. Please see Attachment 1 for a map of the identified deficiencies. The level of exposure associated with these vulnerabilities is not acceptable by NERC reliability standards and directly impacts the ability of DVP to maintain continued reliable service to its customers located within the City of Alexandria (City). Failure by DVP to proactively address the projected overload would be a violation of federal reliability requirements, and would also place thousands of Alexandria homes and businesses at risk of prolonged power outages.

The engineering solution DVP has proposed includes a new 230kV <u>underground</u> transmission line that will connect the Glebe substation to Pepco's Potomac River substation. The new 230kV line will help prevent the existing underground transmission lines from overloading while maintaining continued reliable service to DVP's customers located within the City of Alexandria. An additional benefit of the proposed solution is that by tying into the Pepco substation we will establish a new transmission interconnect that should provide longer term relief against a potential overload, and strengthen DVP's system now and in the future. Currently, there is no connection to the City from across the Potomac. This North-South feed into the City is a major

improvement to the system's operational flexibility. This solution would directly benefit customers within the City of Alexandria, and, in fact, the primary reason for pursuing this particular solution is to enhance the resiliency of transmission level service to Alexandria.

As the City is aware, DVP plans to file an application for approval of the proposed project in the September timeframe with the SCC. The Staff of the SCC is required by Virginia law to verify need for new transmission facilities within the Commonwealth of Virginia as part of the Virginia approval process. The City has requested DVP provide additional support for the need justification supporting the proposed project in advance of DVP's filing an application with the SCC. DVP is providing "Preliminary" Study Results from the Summer 2020 RTEP Power Flow Model, which is based on the most recent PJM 2016 Load Forecast (see Attachments 2, 3, and 4). Attachment 2 is a summary of the preliminary study results referenced above. Attachments 3 and 4 are the actual study results from the Power GEM Transmission Adequacy & Reliability Assessment (TARA) Program, which is one of programs used in the industry for NERC Reliability Analysis. The results are best printed in 11x17 format. While a consultant versed in NERC Reliability Analysis should be able to readily explain the study results, the following information is also provided. The facilities identified in the 'Monitor" column are the identified transmission system deficiencies (*i.e.*, overloads). The column labeled "AC Branch Loading" presents the initial loading levels prior to system re-adjustments. The column labeled "SCD Branch Loading" presents the final loading levels after system re-adjustments. In summary, any loading level greater than 100.0% is considered a NERC Criteria violation. Attachment 3 lists the identified reliability deficiencies absent the proposed project, and Attachment 4 lists the identified reliability deficiencies after the proposed project is modeled.

DVP is committed to maintaining a transmission system that will ensure the City of Alexandria's residents continue to receive reliable transmission service now, and in the future.

Please contact Mr. Travis Cutler if you have any additional questions. I hope that this information is useful to the City.

Yours truly,

Steve Chafin
Director – Electric Transmission Planning & Strategic Initiatives
Dominion Virginia Power

CC:

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