

**DIRECT TESTIMONY
OF
JOHN D. SMATLAK
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUE-2007-_____**

1 **Q. Please state your name and position with Virginia Electric and Power Company**
2 **(“Dominion Virginia Power” or the “Company”).**

3 A. I am John D. Smatlak, and I am Vice President – Electric Transmission for Dominion
4 Virginia Power. My office is located at 120 Tredegar Street, Richmond, Virginia.

5 **Q. What is your educational and professional background?**

6 A. I am a 1978 graduate of Pennsylvania State University with a Bachelor of Science Degree
7 in Electrical Engineering, and I completed the Executive Program in Business through
8 the University of Michigan in 2001. I am a Licensed Professional Engineer in the
9 Commonwealth of Virginia with extensive experience in electric delivery design,
10 maintenance, operations and construction. I have worked for Dominion Virginia Power
11 for 28 years and have held management positions in field operations throughout the
12 Company’s Virginia and North Carolina service territories. I am now Vice President –
13 Electric Transmission and, as such, I have management and supervisory authority and
14 responsibility over Dominion Virginia Power’s transmission planning, construction and
15 operations.

16 **Q. What is the purpose of your direct testimony?**

17 A. The purpose of my testimony is to provide management overview and background
18 regarding the proposed 500 kV line from Allegheny Power’s (“Allegheny’s”) Meadow
19 Brook Substation to Dominion Virginia Power’s Loudoun Substation, which is the final

1 segment of the 502 Junction – Mt. Storm – Meadow Brook – Loudoun project, by
2 introducing the Company witnesses who are submitting direct testimony in this
3 proceeding on the need, routing and other information included in the Company’s filing.
4 The Company’s application should be considered in conjunction with the filing for
5 approval of a portion of the 500kV line by Trans-Allegheny Interstate Line Company
6 (“TrAILCo”), an Allegheny affiliate. In terms of responsibility for the line between
7 Meadow Brook and Loudoun, Dominion Virginia Power is presenting evidence to
8 support the routing for the line from a point just west of the Appalachian Trail (“AT”) to
9 the Loudoun Substation, and TrAILCO is supporting the route from west of the AT to the
10 Meadow Brook Substation.¹ It is our understanding that Allegheny’s separate application
11 also will address routing from the Meadow Brook Substation west to the Virginia-West
12 Virginia border, and the 500 kV line will continue through West Virginia to its terminus
13 in Prexytown, Pennsylvania.

14 **Q. Is the Company’s proposed 500kV project required to serve Virginia needs?**

15 A. As the testimony of several of our witnesses shows, there is a critical need for this line to
16 maintain reliability of service in northern Virginia. Mr. Ronnie Bailey, who is Manager –
17 Electric Transmission Planning for the Company’s Electric Transmission Department,
18 will testify that without this transmission improvement, transmission lines that help serve
19 the northern Virginia portion of our service territory will overload, with the likelihood of
20 rolling blackouts in the area unless we reinforce the transmission grid. He will explain
21 the Company’s efforts, both before and after it became part of PJM Interconnection,

¹ A portion of the line from a point just east of the crossing of the Appalachian Trail to near Dominion Virginia Power’s Remington Substation will be jointly owned by Dominion Virginia Power and TrAILCo as set forth in the application to reflect that portions of the line traverse the territories of both Allegheny and Dominion Virginia Power.

1 L.L.C. ("PJM"), to monitor and address the increased loading on these lines as demand
2 for power has grown since 2001 and how the planning process identified the need for
3 construction of the proposed facilities. Mr. Bailey will explain that in order to maintain
4 reliable service, the proposed project will need to be in operation by Summer of 2011.
5 The rapid growth, and the consequent increased demand for electricity in northern
6 Virginia, is widely recognized, and the Company must act now to meet the needs of this
7 vital region. Reliable service to hundreds of thousands of our customers is at stake in this
8 proceeding.

9 **Q. Has the Company's determination of need and the electrical solution been**
10 **separately verified?**

11 A. Yes. Over the past months we have worked closely with KEMA Incorporated
12 ("KEMA"), a firm with expertise in assessing the need for transmission lines and
13 determining the appropriate solutions where a need is established. In fact, KEMA was
14 retained by the State Corporation Commission in 1998 to evaluate Appalachian Power
15 Company's proposed 765kV transmission project from the Wyoming Substation in West
16 Virginia to the Cloverdale Substation in Roanoke, Virginia. Mr. Jeffrey Palermo of
17 KEMA will present an independent analysis of the regional need and its implications for
18 Virginia and will describe the violations of Dominion Virginia Power and regional
19 planning criteria that will occur if new facilities are not constructed. He also will discuss
20 why a solution is needed for northern Virginia and the alternatives to the Meadow Brook-
21 Loudoun project that KEMA considered and why they are not optimal, or in some cases
22 even feasible, alternatives to the proposed project.

1 **Q. Will Dominion Virginia Power present testimony of other witnesses on the issue of**
2 **need?**

3 A. Yes. Dominion Virginia Power is interconnected with other utilities and is a member of
4 PJM. As a result, the changes that take place on our system, as well as neighboring
5 systems, affect service to all customers in the region. We are presenting the testimony of
6 Mr. Steven Herling of PJM, who will provide an overview of the PJM system, its role in
7 maintaining a reliable grid and its planning process. He will address PJM's regional view
8 of the need for the project, including PJM's request to the Department of Energy for
9 National Interest Electric Transmission Corridor (NIETC) designation of a west-to-east
10 project, and the west to east congestion relief that also will result from the project and
11 benefit customers. The testimony of Mr. Scott Gass, an independent consultant and
12 former PJM employee, will explain the PJM studies in support of the project, the
13 selection of the proposed project as compared to other major alternatives and why the
14 project is essential from a Virginia and a regional perspective.

15 **Q. How will load forecasting be addressed?**

16 A. Mr. John Reynolds of PJM will describe and validate PJM's load forecast and will verify
17 the independence of PJM forecasting. Mr. Frank Monforte of Itron, Inc., a consulting
18 firm specializing in energy-related software and studies, including energy forecasting,
19 will describe and validate Dominion Virginia Power's use of PJM's load forecast data
20 and the methodology used by the Company to determine the load attributable to northern
21 Virginia. The Company also will present the testimony of Mr. Phillip Powell, who is
22 Director of Electric Delivery Customer Growth in the Company's Distribution Planning
23 Department. He is responsible for directing Dominion Virginia Power's long range

1 planning for distribution substations, distribution circuits and distribution rights-of-way
2 required to meet the growing load in our service territory and will address the need for
3 new transmission facilities from a distribution perspective. He will explain how the
4 Company uses its customer-driven forecasts at the circuit and transformer level to
5 validate PJM's load forecasts for the Dominion Virginia Power control area, explain how
6 PJM's forecasts are shared out by the Company to northern Virginia and the other
7 geographic regions served by the Company and will describe the explosive growth in
8 northern Virginia.

9 **Q. Will demand side management programs be addressed?**

10 A. Yes. Mr. David Koogler, Director of State Regulation for the Company, will discuss our
11 demand side management and energy efficiency programs, as well as PJM's load
12 response programs and their use to reduce Dominion Virginia Power's peak load. As Mr.
13 Palermo of KEMA will testify, these programs, coupled with any reasonable expectation
14 of additional measures over the next several years, will not obviate the need for the
15 project.

16 **Q. Will other aspects of the need for reliable service be addressed?**

17 A. Yes, in addition to the clear need for the project as shown in the pre-filed testimony of
18 Mr. Ronnie Bailey and other witnesses I have identified, the Company also will present
19 testimony on the critical importance of maintaining reliable service in the northern
20 Virginia area for government operations and national security. The need for this project
21 and its role in maintaining reliability is unusual in comparison to many projects because
22 of the area that will be served. Mr. Edward Badolato, former Deputy Assistant Secretary
23 of Energy and currently president and CEO of Integrated Infrastructure Analytics, Inc., is

1 knowledgeable about power delivery and its support of essential governmental
2 operations. He will testify about the interrelationship between homeland security and
3 electric reliability, especially in the northern Virginia, Washington D.C. and suburban
4 Maryland areas. His testimony underscores the importance of meeting the need shown
5 through the testimony of our other witnesses.

6 **Q. How will the Company's proposed routing for the line be presented?**

7 A. Dominion Virginia Power will address its proposed routing of the line through the
8 testimony of Mr. John Bailey, Coordinator of Siting and Permitting for the Company.
9 Mr. Bailey, who has extensive experience in routing transmission lines in the Company's
10 service territory and has appeared often before the Commission on routing issues, will
11 describe the factors that led the Company to select its Proposed and Alternate Routes. He
12 will identify the Company's Proposed Route along existing right-of-way for the project
13 and will address the advantages of such a route. As he will describe, 100 percent of the
14 new line will be on or adjacent to existing transmission right-of-way, and the vast
15 majority of the line will be immediately adjacent to existing 500 kV facilities. Mr. Bailey
16 also will explain that in some locations where houses are in close proximity to the
17 existing right-of-way, we will configure the facilities in a manner that will utilize only the
18 existing right-of-way and avoid the need to acquire additional property. As Mr. Bailey
19 notes, the Code of Virginia requires the maximum use of existing rights-of-way where
20 they can adequately serve the needs of the Company for new facilities, and we believe
21 that using a corridor that is already impacted with existing right-of-way is appropriate in
22 the circumstances of this case, as Mr. Bailey will explain. He also will address the

1 Alternate Route on the I-66 right-of-way corridor, as well as other routes we considered
2 and rejected.

3 Mr. Cyril Welter, Senior Project Manager, Environmental Studies and Permitting of
4 Burns & McDonald Engineering Company, Inc., also is expert at routing transmission
5 lines, and he is sponsoring a report that provides extensive information about routing
6 impacts of the Proposed and Alternate Routes presented by the Company as well as other
7 routes that the Company considered and rejected. Information gathered by Mr. Welter
8 and Mr. Bailey has been used to support the DEQ Supplement, which is included in our
9 filing.

10 **Q. Please provide an overview of the selection of Dominion Virginia Power's Proposed**
11 **Route for the new 500 kV facilities.**

12 A. Dominion Virginia Power began an examination of a cross-country route referred to as
13 the "Segment Overhead Route," that generally moved west to east from the Meadow
14 Brook Substation to the Loudoun Substation. This was expected to be a viable route
15 electrically for the project, though it involved a substantial amount of new right-of-way
16 across a relatively undeveloped, scenic and historic area. Company representatives
17 gathered input from the public, elected representatives, government agencies and
18 interested organizations. As the process continued, we focused our attention on the
19 southern portion of the area near the I-66 corridor, an area much opposed due to the new
20 right-of-way required and its proximity to historical and scenic resources, and continued
21 to evaluate changes in the supply and demand for power in northern Virginia and the
22 region. With updated information from PJM, the Company team determined that
23 additional options should be reviewed from both electrical and routing perspectives.

1 The Company identified three additional route approaches to be studied in addition to the
2 cross-country Segment Overhead Route approach that had been identified earlier. The
3 alternatives included:

- 4 1. An overhead alternative along existing transmission line corridors to the
5 south (“Southern Route,” ultimately, our Proposed Route).
- 6 2. An overhead alternative on I-66 (“I-66 Route,” ultimately, our Alternate
7 Route).
- 8 3. A direct current underground alternative generally along the network of
9 segments comprising the Segment Overhead Route (“Segment
10 Underground Route”).

11 Each of these approaches had advantages and disadvantages, but Dominion Virginia
12 Power felt that they were reasonable to study as possibilities. For the I-66 alternative, the
13 Company began discussions with the Virginia Department of Transportation about the
14 feasibility of placing structures within the limited access right-of-way on I-66. For the
15 overhead alternative along existing transmission right-of-way corridors (which became
16 the Proposed Route), Dominion Virginia Power’s planning staff had to evaluate how long
17 this circuit could provide sufficient capacity as well as the suitability of the corridor and
18 cost as compared to a more direct route such as the Segment Overhead Route. As we
19 received additional information on electrical options and PJM introduced new
20 transmission information in the winter of 2006/2007, which also included the revised
21 2007 load forecast showing further increasing demand in northern Virginia, it became
22 apparent that this option should be fully evaluated. Separately, for the underground
23 approach along the same general route as the Segment Overhead Route, Dominion

1 Virginia Power's engineering staff had to study the feasibility and reliability, as well as
2 cost, of adding this technology to the transmission grid.

3 The preliminary review of these alternatives indicated that all of these routes were
4 technically feasible, so the Company announced in late January 2007 that it would pursue
5 these alternatives as well as the route options presented earlier. At the Company's
6 direction, Mr. Welter undertook to assess these additional approaches. At the same time,
7 the Company's engineering, routing and planning staff continued to evaluate these
8 options.

9 Dominion Virginia Power's continuing review of information, which considered new
10 information on electrical viability as well as the obvious benefits of using or paralleling
11 existing right-of-way, led the Company to select the Southern Route on or adjacent to
12 existing transmission right-of-way as the appropriate choice for our Proposed Route. The
13 significant advantage of the Proposed Route is that existing right-of-way (much of which
14 already contains a 500 kV transmission line) is sufficient in some areas, and can be
15 expanded in other areas, to accommodate the new line, which makes this route the one
16 that best minimizes new impacts and clearly meets the statutory requirements for
17 approval. As the Company's routing witnesses will point out, there are distinct
18 advantages to the use of existing transmission line corridor for 100 percent of the routing
19 of this line, including the much reduced incremental impact on the public as compared to
20 other options.

21 We have retained the I-66 Route as the Alternate Route for notice and consideration, the
22 alignment of which Mr. John Bailey and Mr. Welter will explain is based primarily on

1 the fact that it uses an already impacted corridor. They also will explain why the
2 Company rejected the Segment Overhead Route from a routing perspective.

3 **Q. What types of facilities will be used for the construction of the project?**

4 A. Mr. Mark Allen, Manager, Electric Transmission Line Engineering for the Company, will
5 describe the design characteristics of the transmission line proposed in the application.
6 As he will testify, the Company will utilize lattice structures for most of the length of the
7 route. In some locations, we will put existing or other planned transmission lines on the
8 new structures built to accommodate the new 500 kV line. In those areas where we will
9 seek to avoid expanding the right-of-way, such as where houses have been built in close
10 proximity to existing right-of-way and transmission facilities, we propose to move
11 existing 500 kV facilities to a taller pole (eliminating the existing lattice structure) and
12 place the new 500 kV line on a similar pole within the existing right-of-way. Mr. Allen
13 will provide detailed information on these issues in his testimony and in the Appendix
14 filed with the application.

15 **Q. Did the Company consider an underground option for this project?**

16 A. We did. Mr. Donald Koonce, Principal Engineer with the Company, is an authority on
17 underground and overhead transmission line projects, and he has been involved with the
18 construction, maintenance and repair of virtually all of our underground facilities. He has
19 appeared frequently before the Commission as a witness on underground issues. He has
20 examined an underground approach in this case, utilizing direct current, and concluded
21 that, while the alternative may be technically feasible, it presents significant problems,
22 including an extremely high cost. KEMA makes a similar assessment regarding HVDC

1 and also rejects an AC underground option. As the testimony indicates, the Company
2 does not support an underground approach in this case.

3 **Q. Did you consider alternatives to construction of the proposed project in the region,**
4 **such as other transmission routes and technologies, generation and conservation?**

5 A. Yes. The various alternatives are addressed in the testimonies of Ronnie Bailey, Gass
6 and Palermo. As they explain, the proposed project provides the best overall solution to
7 the identified violations of NERC Reliability Standards.

8 **Q. Do you have any further comments on the project?**

9 A. Yes. Dominion Virginia Power is undertaking this project because, first, we believe it is
10 vital to northern Virginia and the public interest for all of our customers, including
11 residential, commercial and government interests. It is also necessary for the Nation's
12 capital, and we are a part of a transmission grid that must maintain reliability as needs
13 change. It is for these reasons that we have proposed this project and we respectfully
14 request expeditious approval by the Commission.

15 **Q. Does this conclude your prefiled direct testimony?**

16 A. Yes.