

**REBUTTAL TESTIMONY
OF
CYRIL WELTER
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUE-2007-00031**

1 **Q. Please state your name, position, place of employment and business address.**

2 A. My name is Cyril Welter. I am employed as a Senior Project Manager for the
3 Environmental Studies and Permitting Division of Burns & McDonnell Engineering
4 Company, Inc. ("Burns & McDonnell"), an engineering and environmental consulting
5 firm. My business address is 9400 Ward Parkway, Kansas City, Missouri 64114.

6 **Q. Did you pre-file direct testimony on April 19, 2007, in this case?**

7 A. Yes. I am also sponsoring the Assessment of Visual Impacts prepared by Burns &
8 McDonnell and filed on September 17, 2007, as the DHR Appendix to the DEQ
9 Supplement ("Assessment").

10 **Q. What is the purpose of your rebuttal testimony?**

11 A. I will comment on Respondent and Staff testimony concerning cultural resources, visual
12 impacts and locality comprehensive plans.

13 **CULTURAL RESOURCES**

14 **Q. Have you reviewed the testimony of the Respondents related to cultural resources?**

15 A. Yes, I have.

1 Q. **What is your general response to the comments on the approach taken in the**
2 **Environmental Assessment and the DEQ Supplement?**

3 A. Virginia Electric and Power Company's (the "Company" or "Dominion Virginia Power")
4 methodology was based on the Commission Staff's *Guidelines of Minimum Requirements*
5 *for Transmission Line Applications Filed Under Virginia Code Section 56-46.1 and The*
6 *Utility Facilities Act* ("Guidelines") and consultation with the Department of Historic
7 Resources ("DHR"). These Guidelines, and the correspondence from the DHR, requested
8 data on sites that are listed on the State or National Register of Historic Places ("NRHP").
9 The normal process also includes more detailed field studies and research after a project
10 is approved, but before construction. Dominion Virginia Power would certainly expect to
11 do such investigation for the designated route after Commission approval. Detailed field
12 studies beforehand are not typical because of limitations on access and the uncertainty of
13 what the exact route will be, when the project receives Commission approval.

14 The work performed to date (literature review, agency contacts, and field reconnaissance)
15 is considered Phase I of the cultural resource studies. Phase II would be further research
16 and shovel testing in the field as part of NRHP evaluation of sites, which would occur
17 after Commission approval. Phase III would be mitigation of any unavoidable impacts
18 that may occur. The Respondents are suggesting that all of these studies should be
19 performed in Phase I, which is not the protocol for a routing study.

20 Q. **What about the Respondents' assertion that following an existing transmission line**
21 **does not lessen the impacts of a new line?**

22 A. Utilizing existing rights-of-way is a key benefit of the Proposed Route. This collocation
23 of facilities is promoted by Va. Code §§ 56-46.1 and 56-259, FERC Guideline #1, and
24 the Appalachian Trail Conference ("ATC") Policy on Roads and Utility Developments

1 criteria (Criteria #2), all of which promote the use of existing rights-of-way. John Bailey
2 addresses these requirements in more detail in his rebuttal testimony. Staff witness
3 Wayne D. McCoy of Miller-Stephenson and Associates, P.C., agreed that following the
4 existing right-of-way would help reduce potential impacts to cultural resources. Staff
5 witness McCoy notes the benefit of paralleling existing corridors especially in areas with
6 significant historic assets. While there will be an impact wherever this line is built, Mr.
7 McCoy noted that it will be only incremental where an existing transmission line already
8 exists, such as on the Proposed Route. This philosophy has been adopted at the federal
9 and state level throughout the country. For example, the Public Utilities Commission of
10 Texas has established certification criteria in their Substantive Rule 25.101. The first two
11 criteria for new transmission lines are listed below:

12 25.101 (b) (3) (B) Routing:

13 ...The following factors shall be considered in the selection of the utility's
14 preferred and alternate routes...:

- 15 (i) whether the routes utilize existing compatible rights-of-way,
16 including the use of vacant positions on existing multiple-circuit
17 transmission lines;
- 18 (ii) whether the routes parallel existing compatible rights-of-way;...

19 Even the counties in the area suggest following existing corridors, as shown in the
20 Fauquier County Comprehensive Plan, Policy Guidelines which state "[g]as/petroleum
21 pipelines and electrical transmission lines should be grouped in designated utility
22 corridors where appropriate to avoid scattered placement of these utilities in the County,"
23 chapter 9, page 3-4 available at
24 [http://www.fauquiercounty.gov/Government/Departments/CommDev/index.cfm?action=](http://www.fauquiercounty.gov/Government/Departments/CommDev/index.cfm?action=compplan1)
25 [compplan1](http://www.fauquiercounty.gov/Government/Departments/CommDev/index.cfm?action=compplan1).

1 Q. **What was the basis for choosing the locations for the visual simulations in the**
2 **Assessment?**

3 A. The DHR requested that we take photos from eligible sites that were within 1 mile of the
4 Proposed and Alternate Routes, if the line would be visible from those locations. We
5 determined the potential visibility from the viewshed analysis that we performed using
6 GIS software. This analysis was also used to help determine the sites from which to take
7 the pictures because it indicated the degree of visibility as well, and we selected areas of
8 high visibility where possible. As requested by DHR, an architectural historian
9 accompanied the photographer on the trip to help select the actual locations on the sites
10 from which to take the pictures.

11 Q. **What was your source of information for identifying cultural resource sites and**
12 **their status?**

13 A. The primary source was the DHR records. Dominion Virginia Power purchased the
14 complete electronic data set from the DHR, which we then used for mapping the location,
15 area, and status of sites. We also had our staff meet with various officials with the DHR,
16 the American Battlefield Protection Program, and the Shenandoah Valley Battlefields
17 National Historic District. In addition, the architectural historian visited every site for
18 which visual simulations were prepared, as noted above.

19 Q. **Some witnesses, Kimberly Abe on behalf of the Piedmont Environmental Council**
20 **("PEC") in particular, have pointed out that the discussion of cultural resources did**
21 **not include scenic roads or rivers. Why is that?**

22 A. Those resources are covered in the *Routing Study and Environmental Assessment* filed in
23 volume V of the Company's Application ("Routing Study") under the headings
24 Recreation Areas, Transportation and Utilities, and Visual Character; as opposed to the

1 study for the DHR. As noted in the introduction of the Assessment, the study was
2 prepared at the request of the DHR, and is focused on historic resources.

3 ALTERNATE ROUTE

4 **Q. Respondent Richard B. Clifford and the witnesses for Oakwood Enterprises, et al.**
5 **("Oakwood") have filed numerous comments regarding the potential impacts to**
6 **historic resources of the Alternate Route along I-66. One of their main concerns is**
7 **that Dominion Virginia Power will take private lands along the highway for right-**
8 **of-way and access. Is this correct?**

9 A. Not the way it is portrayed by Mr. Clifford, no. As stated in the Application, the exact
10 location and design of the Alternate Route has not been determined. If the Alternate
11 Route is approved, the Company would adjust both the location and design to minimize
12 taking private property. At this time, it is not possible to identify any specific private
13 property that would be required for the project. Dominion Virginia Power would work
14 with the VDOT, the Commission, the DHR, and landowners in determining the final pole
15 locations if the Alternate Route is approved. For example, the Company could adjust the
16 location of structures in the vicinity of Beverley Mill.

17 **Q. Is it fair to say that if the Alternate Route is approved, the route would cross**
18 **historic districts?**

19 A. The boundaries of some historic districts appear to extend into the I-66 right-of-way, and
20 two districts cross the highway (John Marshall Leeds Manor and Thoroughfare Gap
21 Battlefield). The Alternate Route, however, is within the VDOT right-of-way, which
22 already exists. Therefore, it is not accurate to say that Dominion Virginia Power would
23 condemn any historic districts.

1 **Q. Would construction of the Alternate Route along I-66 require any tree clearing?**

2 A. Yes, it would. The amount of tree clearing was provided in revised pages 3-8 and 4-3 to
3 the Routing Study filed with the Commission on December 21, 2007. The exact amount
4 of tree clearing cannot be determined at this time for the reasons given above, but the
5 estimate based on the Alternate Route shown in the application is 243.5 acres of tree
6 clearing along the highway and 259.3 acres in total for the Alternate Route.

7 **Q. How does this compare to the tree clearing estimated for the Proposed Route?**

8 A. The total tree clearing for the Proposed Route is estimated at 281.8 acres.

9 **Q. Would this clearing have an effect on the landowners and resources along I-66?**

10 A. Yes it would, depending on the situation. As noted in the testimony of Cheryl H.
11 Shepherd, on behalf of Oakwood, on page 25, I-66 is "...not particularly visible or
12 intrusive on the landscape. This is because I-66 is visually well-shielded from the
13 surrounding properties and districts." In some cases the buffer is thin and in some cases
14 it is extensive, so the visual effect of clearing would vary. Most properties have some
15 trees on their property, which would probably remain for screening. This is one of the
16 reasons, among others, that this route was picked as the Alternate Route rather than being
17 the Proposed Route.

18 **Q. The Respondents' witnesses claim that the analysis is inadequate because it does not**
19 **meet National Park Service guidelines. Do you agree?**

20 A. No. The Routing Study was completed in accordance with the Guidelines and statutory
21 requirements for approval of transmission facilities under Va. Code § 56-46.1. Although
22 the Routing Study identifies some potential impacts to historic resources along the
23 Alternate Route, the Alternate Route was included because it follows an existing, modern

1 corridor through the study area, which is considered less impacting than an all-new right-
2 of-way through the historic resources described in the Routing Study. As a result, the
3 Segment Overhead Route was eliminated in large part due to consideration for potential
4 impacts on historic resources.

5 **VISUAL IMPACTS**

6 **Q. Did you review the Respondents' testimony regarding potential visual impacts of the**
7 **project?**

8 **A. Yes, I did.**

9 **Q. Do you agree with the comments by John Beardsley on pages 2-3 of his testimony on**
10 **behalf of Power-Line Landowners Alliance and Kristina Hill starting at page 3 of**
11 **her testimony on behalf of PEC that you should have rigorously applied the U. S.**
12 **Forest Service methodology described in *Landscape Aesthetics, A Handbook for***
13 ***Scenery Management* ("Handbook")?**

14 **A. No. The Routing Study was conducted in accordance with the Guidelines of the**
15 **Commission and not required to follow the guidelines of the U.S. Forest Service ("Forest**
16 **Service"). The Handbook is primarily a tool for the Forest Service to manage their lands,**
17 **as the title states. We applied some of the principles of the Forest Service approach for**
18 **our Routing Study, not the wholesale methodology. This project is not under the**
19 **jurisdiction of the Forest Service, and the objective was not to develop a management**
20 **program for the study area.**

21 While some of the witnesses belabor the idea of doing a scenic attractiveness index, they
22 do not mention the principles of visual contrast or visual absorption capability which
23 apply to determining the potential visual impact of a project. These principles include the
24 consideration of factors such as form, line, color, and texture in determining the contrast,
25 and consequently the visibility, of a project. Based on these considerations, building next

1 to a similar type of facility indeed helps to reduce the visibility of a transmission line.

2 These principles are covered in the Handbook, and in the predecessor manuals, *National*
3 *Forest Landscape Management, volume 1 and volume 2, Chapter 1: The Visual*
4 *Management System.*

5 **Q. Please comment on the Respondents' concerns that the new structures will be taller**
6 **than the surrounding trees.**

7 A. Although the visibility of the line is affected by whether it is taller than the trees, a person
8 standing on the ground cannot always see above the trees. The viewshed analysis in the
9 Routing Study takes the line of sight into account in determining whether the line would
10 be visible. Also, the rolling terrain in the area provides a screening factor when the
11 viewer's line of sight is blocked by a hill. Furthermore, neither the trees nor the hills
12 need to be taller than the transmission structures to obscure them. If the viewer's line of
13 sight is pushed upwards such that the angle of view would be above the structures (*i.e.*,
14 toward the sky), the line would not be visible to the viewer. These factors are all
15 incorporated into the viewshed analysis in the Routing Study.

16 **Q. The Respondents are concerned about the months when the trees would be without**
17 **leaves. What is your comment on that issue?**

18 A. The density of the trees in this area is such that the trunks and branches alone are
19 sufficient to hide or obscure objects with any significant depth of trees, say 50 feet or
20 more. The difference in visibility would be marginal, and may consist of a change in
21 status from hidden to obscured, but not a change from hidden to totally visible.

1 Q. **PEC witness Ms. Hill, on page 11 of her testimony, referenced a visual study**
2 **performed for a transmission line in Rhode Island. Are you familiar with that**
3 **study?**

4 A. Yes, I have reviewed it. The study, titled Visibility and Visual Impact Assessment,
5 Southern Rhode Island Transmission Project, was prepared by Environmental Design &
6 Research, P.C. ("EDR"), in October 2005.

7 Q. **What is your opinion of the methodology used in the Rhode Island study and the**
8 **conclusions of that study compared to the one Burns & McDonnell prepared for**
9 **Dominion Virginia Power?**

10 A. The case and the methodology are very similar to the Meadow Brook – Loudoun project.
11 The Rhode Island project involved the construction of a new 115-kV transmission line
12 next to an existing line. The consultants did a viewshed analysis of the existing line, then
13 of the proposed line, and compared the two, just as we did for this project. The distance
14 used there was three miles, the same as we used. The description of the setting included
15 recreation areas, historic areas, residential areas, and so forth, which are likewise
16 included in our Routing Study in various sections. The consultants then prepared visual
17 simulations and rated the effect on the existing conditions. While we did not use a
18 numerical scale to rate the impacts, we did include a description of the anticipated change
19 for each instance.

20 Q. **What were some of the conclusions of the Rhode Island study?**

21 A. The conclusions were almost identical in nature. The consultants rated the impacts as
22 low due to the presence of the existing line and existing vegetation. The Rhode Island
23 study found “[t]o a large extent the project’s adverse visual impact was mitigated by its
24 proximity to the existing transmission line and cleared ROW.However, in no case did
25 the level of adverse visual impact come close to exceeding the threshold of allowable

1 impact for any LSZ (landscape similarity zone) within the study area. Consequently, the
2 VIA (visual impact assessment) analysis suggests that no additional actions/project
3 modifications are necessary to mitigate adverse visual impact.” EDR, p. 30.

4 While we recognize some potential visual impact from the project along the Proposed
5 Route, we agree with the principle that following the existing right-of-way is an effective
6 method to reduce those impacts.

7 **Q. Did you review the viewshed figures prepared by Watson Randolph on behalf of**
8 **PEC?**

9 A. Yes, I did. They were similar to our figures, in large part because he used the data we
10 had produced. The main difference was labeling some of the forest as "seasonal,"
11 meaning deciduous. His exhibits do not distinguish degrees of visibility, as ours did.
12 Rather, he shows all areas the same. Also, there is no definition of "Seasonal Forest
13 Visibility," or source so I cannot know how he arrived at that, or exactly how visible such
14 a designation means. As I stated earlier, a forest without leaves still provides screening,
15 especially at the density and depth found in this area.

16 **Q. Did you review the exhibits WR-10 through 13 from Mr. Randolph's testimony as**
17 **well?**

18 A. Yes, they just extend the viewing area from 3 miles to 5 miles. The figures show limited
19 visibility from that additional area. Furthermore, anything from that distance would be
20 considered background, and not very distinctive.

1 Q. Mr. Starke on behalf of Oakwood Enterprises at page 5 of his testimony suggested
2 that the visual simulations prepared for the project were "manipulated" in several
3 ways. Could you respond to this comment?

4 A. Yes, Mr. Starke suggests that we used a wide-angle lens to affect the view, whereas the
5 reason the 28 mm lens was used was simply to provide a broader view of the landscape.
6 The suggestion that we scheduled our photography trips for bad weather conditions
7 presumes we knew the weather in advance of making travel arrangements. As stated
8 above, the views were taken from historic sites as requested by the DHR. We tried to
9 take pictures from near the historic structures on the property, or from other high-use
10 locations that would have a view of the proposed line. Where there were existing utilities
11 or clutter in the view, that is simply an accurate portrayal of the view.

12 Q. Have you reviewed the simulations prepared by Mr. Starke, and do you have any
13 comments on those?

14 A. Yes I did, and in general they appear to be reasonable. I would say that several of the
15 photos appear to be from the edge of the property, rather than the location of the historic
16 structures. Also, I can not tell what focal length he used, although some of the photos are
17 labeled wide view and some are not. If he zoomed in for some of the shots, it would
18 magnify the objects in the background. My biggest concern is his placement of the poles
19 in his simulations. In photos 5B, 6B, and 7B, he appears to have placed the poles on the
20 landowner's property rather than on the VDOT right-of-way as Dominion Virginia Power
21 has proposed. Therefore, the poles are in the landowner's field and not screened
22 whatsoever.

1 **COMPATIBILITY WITH COUNTY PLANS**

2 **Q. Rappahannock and Fauquier Counties have stated that the project is not consistent**
3 **with their comprehensive plans. Did you consider this in your evaluation of the**
4 **project?**

5 A. Yes, we reviewed the plans for each county. None of the counties exclude utilities;
6 rather, they are considered a necessary service for their residents. The main issues raised
7 by John McCarthy on behalf of Rappahannock County and Kimberly Abe of PEC have to
8 do with growth or a change in the land use from agricultural. This line will not directly
9 lead to growth in these counties. Likewise, the land use within and along the right-of-
10 way will remain the same as it is today. Agriculture is widespread within transmission
11 rights-of-way, particularly pasture, which is the most common form of agriculture in the
12 study area. Furthermore, the collocation of the Proposed Route with existing right-of-
13 way is consistent with the policies of Fauquier County's Comprehensive Plan, as cited
14 above.

15 **Q. Does a transmission line conflict with the agricultural use of the land?**

16 A. Agriculture of all types is permitted, and is common, within transmission rights-of-way.
17 Much of the agricultural land in this area is pasture, and a transmission line would have
18 minimal impact on such use. Staff witness McCoy acknowledged this fact by finding
19 that farming is a compatible use based on his review of general zoning ordinance and
20 regulations.

1 **Q. Do you agree with the conclusions of Ms. Hallock at pages 15-16 of her testimony**
2 **on the adverse impacts that the project would have on Rappahannock County, its**
3 **economic viability, future listings of historic places, and the ability to limit**
4 **development?**

5 A. No, Ms. Hallock gives no basis for these conclusions. She gives no evidence as to how
6 the widening of an existing corridor, with similar structures, would lead to these
7 consequences. On the contrary, all of the characteristics described are present today in
8 conjunction with the Company's existing transmission facilities along the Proposed
9 Route.

10 **Q. Do you have any specific corrections in the testimony of any of the witnesses?**

11 A. Yes, on p. 17, line 16 of Ms. Abe's testimony on behalf of PEC, she states "[w]hereas the
12 existing towers are wooden and 35 feet tall." Ms. Abe must be thinking of distribution
13 poles. In most cases the existing structures are steel lattice towers approximately 115-
14 130 feet tall. The shortest existing structures are wooden H-frame structures
15 approximately 66-feet tall.

16 **Q. Does this conclude your testimony?**

17 A. Yes, it does.