

**REPORT OF THE
STATE CORPORATION COMMISSION**

**First Annual Report on the
Pilot Program to Place
Certain Transmission Lines
Underground**

**TO THE GOVERNOR,
THE COMMISSION ON ELECTRIC UTILITY
REGULATION, AND THE JOINT COMMISSION ON
TECHNOLOGY AND SCIENCE**



**COMMONWEALTH OF VIRGINIA
RICHMOND
2008**

COMMONWEALTH OF VIRGINIA



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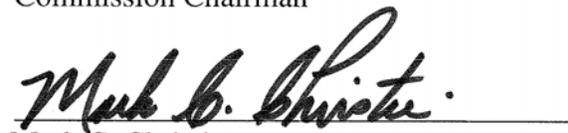
December 1, 2008

TO: The Honorable Timothy M. Kaine, Governor of Virginia
Commission on Electric Utility Regulation
Joint Commission on Technology and Science

The State Corporation Commission is pleased to submit its first annual report regarding progress on the pilot program to construct qualifying electric transmission lines underground, as required by Chapter 799 of the 2008 Acts of Assembly (House Bill 1319).

Respectfully Submitted,


Judith Williams Jagdman
Commission Chairman


Mark C. Christie
Commissioner

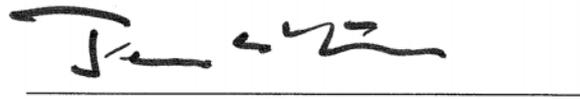

James C. Dimitri
Commissioner

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EXECUTIVE SUMMARY

House Bill 1319¹ (“HB 1319”) of the 2008 Regular Session of the Virginia General Assembly (the “Act”) established a pilot program to construct four qualifying electrical transmission lines of 230 kilovolts (“kV”) or less in whole or in part underground.² Among other provisions, the Act established the criteria necessary for certain transmission line projects to qualify for the pilot program. In addition, the Act directed the State Corporation Commission (“SCC” or “Commission”) to “report annually to the Commission on Electric Utility Restructuring,³ the Joint Commission on Technology and Science, and the Governor on the progress of the pilot program by not later than December 1 of each year that this Act is in effect.”

From the effective date of the Act (April 2, 2008) through November 1, 2008, the SCC had received five applications from public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kV or less. Appalachian Power Company (“APCo”) submitted three applications for 138 kV overhead transmission lines. Dominion Virginia Power (“DVP” or “Virginia Power”) submitted two applications for 230 kV underground transmission lines, one of which, in accordance with the Act, was for an approximately two-mile segment of a transmission line previously approved by the SCC as an overhead line.⁴

As of the date of this report, the Commission has approved the two-mile segment of DVP’s Pleasant View–Hamilton transmission line for the pilot program.⁵ DVP’s other application and APCo’s three applications are currently in regulatory proceedings before the Commission. As required by the Act, three more qualified transmission lines must be approved for inclusion in the pilot program by 2012. The Commission will continue to file annual reports on December 1 of each year until the pilot program has been completed and will file a final report no later than December 1, 2012. While it is premature to evaluate the pilot program at this time, the final report will include an analysis of the entire pilot program and make recommendations about the continued placement of transmission lines underground in the Commonwealth of Virginia, as required by the Act.

¹ Chapter 799 of the 2008 Acts of Assembly.

² The Act specified one of the qualifying projects and directed the State Corporation Commission to approve three additional qualifying projects.

³ The Commission on Electric Utility Restructuring established pursuant to Chapter 885 of the Acts of Assembly of 2003, was continued, effective July 1, 2008, as the Commission on Electric Utility Regulation (§ 30-201 of the Code of Virginia).

⁴ DVP’s Pleasant View–Hamilton 230 kV transmission line in Loudoun County.

⁵ To date and unrelated to any pilot program, the Commission has approved approximately 35 miles of 230 kV transmission lines for underground construction that employ high-pressure fluid-filled cable technology. These underground lines are located in various areas of DVP’s service territory, including Alexandria, Arlington, Fairfax, and Norfolk. In most cases the lines were located underground in highly congested urban areas because overhead construction was not feasible. In addition, the Commission recently approved two experimental 230 kV underground projects to enable DVP to gain experience with cross-linked polyethylene (“XLPE”) solid dielectric cable. These two experimental projects are unrelated to the HB 1319 pilot program and include a 2200-foot project in Arlington County approved May 25, 2007 (SCC Case No. PUE-2006-00082) and a 5.5-mile project in Stafford County approved April 8, 2008 (SCC Case No. PUE-2006-00091). The two experimental projects are currently under construction.

BACKGROUND AND INTRODUCTION

Historical Background

The placement of electric transmission lines has long been a topic of intense public interest. While the vast majority of transmission lines in the United States have been constructed overhead, a small proportion of such lines have been located underground, including in Virginia. In recent years the feasibility of placing more lines underground has been a topic of interest within the Virginia General Assembly. In 2005, the Joint Commission on Technology and Science (“JCOTS”)⁶ first began to study the technological feasibility of burying transmission lines. In 2007 JCOTS created the Underground Transmission Lines Advisory Committee to produce a policy statement with possible legislative implications for 2008. As a result of their deliberations, JCOTS and its Transmission Lines Advisory Committee developed an outline for proposed legislation for a pilot program to study the construction of underground transmission lines.

Introduction to Legislation Establishing the Pilot Program

By legislation enacted in 2008 (see Appendix A), the Virginia General Assembly established a pilot program to construct four qualifying electrical transmission lines of 230 kilovolts or less in whole or in part underground. The Act directed the SCC to “report annually to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and the Governor on the progress of the pilot program by no later than December 1 of each year that this Act is in effect.” In addition, the Act stated that the SCC “shall submit a final report to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and Governor no later than December 1, 2012, analyzing the entire program and making recommendations about the continued placement of transmission lines underground in the Commonwealth.”

Specifically, the Act directed the SCC to approve as a qualifying project, and part of the pilot program, an approximately 1.8-mile section of DVP’s Pleasant View–Hamilton transmission line, which had been granted a certificate of convenience and necessity by the SCC prior to the effective date of the Act, and three additional qualifying projects from among “applications submitted by public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kilovolts or less filed between the effective date of [the] Act and July 1, 2012.” For purposes of the Act, a project shall be qualified to be placed underground, in whole or in part, if it meets all of the following criteria:

⁶ The JCOTS was created by the 1997 Virginia General Assembly as a permanent legislative commission to generally study all aspects of technology and science. Each year, the JCOTS identifies technological issues of interest, develops a work plan, and creates advisory committees to study those issues. Once the studies have been concluded, advisory committees issue their final reports and recommendations, including legislative proposals.

1. An engineering analysis demonstrates that it is technically feasible to place the proposed line, in whole or in part, underground;

2. The estimated additional cost of placing the proposed line, in whole or in part, underground does not exceed 2.5 times the cost of placing the same line overhead, assuming accepted industry standards for undergrounding to ensure safety and reliability. If the public utility, the affected localities, and the State Corporation Commission agree, a proposed underground line whose cost exceeds 2.5 times the cost of placing the line overhead may also be accepted into the pilot program; and

3. The governing body of each locality in which a portion of the proposed line will be placed underground indicates, by resolution, general community support for the line to be placed underground.

The Act also included language relative to (1) lines that might complete a network for qualifying projects that include only radial service, (2) lines that would need to be completed within a specific amount of time to facilitate an economic development agreement, (3) qualifying projects chosen pursuant to the Act but not fully recoverable as charges for new transmission facilities pursuant to subdivision A 4 of § 56-585.1 of the Code of Virginia, (4) the placement of existing or future overhead facilities in the same area or corridor as a pilot project, (5) a requirement that utilities must seek low-cost and effective means to improve the aesthetics of new overhead transmission lines and towers, and (6) the necessary documentation required in the event four applications meeting the requirements of the Act are not submitted to the SCC. Complete details can be found in the approved Act provided in Appendix A of this report.

Introduction to Report Sections and Appendices

This section provided historical background and an introduction to the legislation establishing the pilot program. It is followed by an explanation of the underground pilot selection process. Following that explanation, a discussion of the pilot program's progress is provided. This is followed by a summary, analysis and conclusions. Appendix A includes a copy of the Act.

HB 1319 PILOT PROJECT SELECTION PROCESS

Scope of SCC's Legislative Responsibilities

The Virginia General Assembly, through the legislative process, imparts certain responsibilities upon the SCC relative to the regulation of electric utility companies, including the certification of proposed electric transmission lines. The Commission's authority and responsibility with regard to the construction of new transmission lines is established by Title 56 of the Code of Virginia ("Code"), primarily by §§ 56-265.2⁷ and 56-46.1. Specifically, § 56-265.2 of the Code requires public utilities to obtain a

⁷ Utilities Facilities Act

certificate of public convenience and necessity (“certificate” or “CPCN”) from the Commission in order to construct facilities for use in public utility service.⁸ Section 56-46.1 of the Code establishes certain procedural requirements and identifies specific factors to be considered in the approval process. Additionally, the Commission is authorized to issue its own rules and regulations to facilitate the implementation of its statutory responsibilities. As a result of HB 1319 (2008), the General Assembly has added to the SCC’s responsibilities by directing the Commission to select a number of qualifying transmission lines to be placed underground as part of a new pilot program in effect for the period 2008–2012.

Synopsis of the Transmission Line Application and Certification Process

A utility’s application for a certificate to construct and operate a transmission line typically includes supporting written testimony for the certificate and a map and sketch of the applicant’s preferred route, as well as other alternative routes that have been considered. The applications also include other information in accordance with the Staff’s Guidelines of Minimum Requirements (“Guidelines”). The Guidelines request that the applicant address four major categories: (1) the necessity for the proposed project including estimated cost; (2) a description of the proposed project and alternatives considered; (3) the impact of the line on scenic, environmental, and historic features; and (4) the health aspects associated with the electric and magnetic fields that will be generated by the proposed line.

Typically, after an application is filed, the Staff reviews the application for general content, the Commission enters an order for “notice and hearing”, any intervening respondents file testimony, the Staff develops a report on the application, and a formal regulatory proceeding ensues in accordance with the SCC’s Rules of Practice and Procedure. After a hearing, including public comment and expert testimony, and an opportunity to file post-hearing legal briefs or make oral arguments, the hearing examiner enters a report summarizing the evidentiary record and making recommendations. The applicant, respondents, and the Staff may file comments on the hearing examiner’s report. Then, after reviewing the record in the case and post-hearing legal briefs, the Commission makes a decision and issues a final order and, if the proposed line is approved, a certificate for the line and route.

Outline of Pilot Project Selection Process

As a result of HB 1319 (2008) and as long as the Act is in force, the Staff, in addition to reviewing an application for general content, need and routing, will also have to determine whether any proposed transmission line of 230 kV or less is potentially qualified for inclusion in the pilot program. As part of this determination, the Staff will request the necessary technical and cost analyses not already included in the utility’s application. In its report on the application, the Staff will comment on whether or not the proposed transmission line meets the criteria to be a qualified project in accordance with

⁸ This requirement is applicable to transmission lines not considered ordinary extensions or improvements in the usual course of business, including all transmission lines capable of carrying 138 kilovolts.

§ 4 of the Act and recommend for or against inclusion of the transmission line in the pilot program. After the hearing, including public comment and expert testimony, the hearing examiner will enter a report summarizing the evidentiary record and making recommendations, including recommending for or against inclusion of the line in the pilot program. Finally, if the proposed transmission line is granted a certificate of public convenience and necessity, the Commission will also decide for or against inclusion of the line in the pilot program.

Summary of Selection Process

The purpose of this section was to briefly describe the process for the selection of certain proposed transmission lines for the pilot program established by HB 1319 (2008). The selection process was presented within the context of an electric utility's application for a new transmission line and the responsibilities of the Commission relative to the certification of such lines. The purpose of the next section is to summarize the pilot status of those transmission lines of 230 kV or less for which applications were received after the effective date of the Act through November 1, 2008.

HB 1319 PILOT PROGRAM PROGRESS

Introduction

As mentioned previously, the Act directed the SCC to approve as a qualifying project, and part of the pilot program, an approximately 1.8-mile section of DVP's Pleasant View–Hamilton 230 kV transmission line, which had been granted a certificate of public convenience and necessity by the SCC prior to the effective date of the Act, and three additional qualifying projects from among “applications submitted by public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kilovolts or less filed between the effective date of [the] Act and July 1, 2012.”

From the effective date of the Act through November 1, 2008, the SCC had received five applications from public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kV or less. APCo submitted three applications for 138 kV *overhead* transmission lines, and Virginia Power submitted two applications for 230 kV *underground* transmission lines, one of which, in accordance with the Act, was for a portion of a transmission line previously approved by the SCC as an overhead line. Summaries of these transmission line projects are provided below.⁹

Pleasant View–Hamilton 230 kV Transmission Line

On April 14, 2005 in Case No. PUE-2005-00018, DVP filed with the Commission an application for approval and certification of electric transmission facilities in Loudoun County, Virginia consisting of a new overhead 230 kV single circuit transmission line from the utility's existing Pleasant View Substation to a new 230/34.5 kV substation to

⁹ Summaries of the Pleasant View–Hamilton and Beaumeade–NIVO lines were provided by DVP.

be constructed at a location east of the Town of Purcellville (“Hamilton Substation”). On February 15, 2008, the Commission issued a Final Order in Case No. PUE-2005-00018 approving the proposed overhead transmission facilities along a route identified in that proceeding as the “Modified D Route.” The Modified D Route is located, in part, on or adjacent to existing DVP right-of-way on the W&OD Trail Park, which is owned by the Northern Virginia Regional Park Authority and used by the general public for park and recreational purposes (“W&OD Trail”).

On April 21, 2008, in Case No. PUE-2008-00027 and pursuant to § 2.A of the Act, DVP filed a request to participate in the pilot project for the construction of underground 230 kV transmission facilities for a portion of the transmission line previously approved by the Commission in Case No. PUE-2005-00018. In accordance with § 2.A of the Act and to mitigate concerns over the visual impact of overhead lines on the W&OD Trail, the utility proposed to construct underground an approximately 1.7 mile section of the previously approved overhead Pleasant View–Hamilton transmission line. In order to transition from the overhead line to the underground cables, two terminal stations will be constructed proximate to the W&OD Trail. The proposed underground transmission line will be located entirely within existing utility-owned right-of-way on the W&OD Trail, except for the short distances where the underground line will enter the two terminal stations. This pilot project requires the purchase of land on which to construct the two terminal stations (approximately 1.2 acres for the fenced area of each terminal station, plus additional acreage for screening) and the acquisition of a new 40-foot wide right-of-way between the terminal stations and W&OD Trail.

On May 6, 2008 in Case No. PUE-2008-00027, the Commission approved the request to place 1.8 miles of the line underground as a pilot project. On May 21, 2008, as a result of cooperation with local residents and officials to further minimize the potential impacts of the line on private property, DVP proposed a modified request to construct an approximately 2 mile section of the transmission line underground and to relocate the north terminal station to another parcel. On May 28, 2008, the Commission approved the modified request.

The pilot project is presently constructing underground facilities with a total transfer capability of 1047 MVA in order to provide transfer capability equivalent to the previously approved overhead line and redundancy in the event of an outage on one of the underground cables comprising the underground circuit. The underground transmission line will use cross-linked polyethylene (“XLPE”)¹⁰ solid dielectric underground cable encased in concrete duct bank for protection with two cables per phase, conduit for communications and shield wires, and spare cable conduits for additional underground transmission facilities if needed in the future. The proposed XLPE cable system will consist of two parallel duct banks, each with three cables

¹⁰ Although the dominant underground transmission line technology in the United States for decades has been high-pressure fluid-filled (“HPFF”) pipe, XLPE is considered by some as an emerging technology that is gaining in popularity and use at certain voltages. XLPE cable is often referred to as “extruded” cable, because of the method used to apply the solid polyethylene insulation to the electrical conductor. Cost is often noted as an advantage of XLPE over HPFF.

installed for a total of six cables. The two duct banks will be separated by a minimum of 8 feet to 15 feet to reduce mutual heating effects in order to maximize the ampacity of the circuit.

The current cost estimate for the hybrid (part overhead, part underground) line project amounts to approximately \$106.6 million, with approximately \$69.6 million associated with the cost of the 10-mile overhead portion of the line (approximately \$7 million per mile *including* land acquisition costs) and roughly \$37 million associated with the cost of the 2-mile underground segment of the line (approximately \$18.5 million per mile *excluding* land acquisition costs).¹¹ This project is on schedule to energize the line in the spring of 2010.

Beaumeade–NIVO 230 kV Transmission Line

On July 21, 2008, (Case No. PUE-2008-00063) DVP filed with the Commission to build in Loudoun County, Virginia, two new 230 kV underground transmission lines approximately 0.71 miles long from a proposed expansion of DVP’s existing Beaumeade Substation to a new 230/34.5 kV substation (“NIVO Substation”) constructed on land owned by DuPont Fabros. The proposed transmission lines will be built primarily on a combination of existing DVP right-of-way within the W&OD Trail and existing VDOT right-of-way along Smith Switch Road, south of Beaumeade Substation. Both of the new proposed lines will occupy the same concrete encased duct bank consisting of eight 6-inch conduits. Each line will be comprised of three XLPE solid dielectric cables with a rating of 524 MVA.

While probably feasible to construct the new transmission lines proposed in the application overhead, the utility proposes to construct the Beaumeade–NIVO 230 kV lines underground as a pilot project under HB 1319. Although the project is electrically configured as two transmission lines, this is considered to be a single project for the purposes of HB 1319. As part of the HB 1319 pilot program, the project will enhance and expand the utility’s experience and familiarity with the construction, operation, and performance of XLPE technology. DVP believes it is technically feasible to place the proposed transmission lines underground, and the estimated additional costs of placing these lines underground appear to meet the requirements of HB 1319. In addition, DVP has worked closely with Loudoun County officials during the project’s planning phase and anticipates that the Loudoun County Board of Supervisors will indicate, by resolution, general community support for the lines to be placed underground.

The proposed route for the project is approximately 0.71 miles long and will require a new 30-foot wide right-of-way for only a small portion of its length. Approximately 0.20 miles of the proposed route will be located within existing DVP-owned right-of-way along the W&OD Trail, and approximately 0.33 miles will be

¹¹ Excluding land acquisition costs: The underground line segment is to be located along existing company right-of-way and therefore no land purchase was required for the underground portion other than the short sections of underground required to reach the two transition stations. An appropriate per-mile cost comparison of the underground portion versus the overhead portion should include land acquisition costs duly prorated and scaled for the underground segment. These costs would add approximately \$2 million per mile to the underground line for a total of \$20.5 million per mile.

located within existing VDOT right-of-way along Smith Switch Road. DVP will need to acquire a new 30-foot right-of-way on the DuPont Fabros property for approximately 0.15 miles of the proposed route, and the remaining 0.03 miles of the route will be located on the property to be acquired for the proposed Beaumeade Substation expansion.

An estimated in-service date of mid-2010 is projected for the project. Further facets of the project, including detailed cost estimates, are excluded from this report as the project is the subject of an ongoing regulatory proceeding. The Commission has directed the Staff to file its report on the application no later than December 8, 2008, and an SCC hearing has been scheduled for January 26, 2009.

Sunscape 138 kV Transmission Line

On June 20, 2008, APCo filed its application with the SCC for approval and issuance of a certificate of public convenience and necessity to construct and operate a 1.4-mile, double-circuit 138 kV overhead transmission line in an urbanized area of southwestern Roanoke County (SCC Case No. PUE-2008-00053). The purpose of the proposed project is to maintain reliability in the rapidly growing areas of southwestern City of Roanoke and southwestern Roanoke County. The new 138 kV transmission line would start with a tap at Tower No. 46-23 on the existing Hancock–Roanoke 138 kV transmission line and proceed approximately 0.3 mile, through an industrial/commercial area to the Norfolk Southern Railroad, and then approximately 1.1 miles along the Norfolk Southern Railroad to the proposed substation.

Current land use in the vicinity of the preferred route generally consists of residential, commercial and industrial development as well as two major transportation corridors. The transportation corridors consist of the Norfolk Southern Railroad and Virginia Route 419. The Norfolk Southern Railroad corridor includes extensive industrial development southwest of Virginia Route 419. According to APCo, no conflicts between construction of the preferred alternative and future land use are foreseen.

The preferred route has one commercial structure located within the 80-foot right-of-way, but no residential land. The preferred route has approximately 66 houses, 21 apartment/condominium buildings, and two apartment complex recreation areas within 500 feet of the centerline. According APCo, these houses and apartments face away from the proposed corridor, thereby minimizing the potential for impact in general. A baseball field associated with the Green Valley Elementary School is located within 500 feet of the substation, but a substantial wooded buffer will separate the substation from this field.

The estimated overhead cost of all facilities to be included in the proposed project is approximately \$11 million. APCo expects construction to take 10 to 12 months, with an anticipated service date of June 1, 2010, prior to the 2010 summer load peak.

Based on APCo's application, the Staff identified the Sunscape project as a potentially qualified project for purposes of the pilot program and requested additional analyses from APCo. In response to a Staff interrogatory to investigate whether Sunscape might be a qualifying transmission line in accordance with the criteria established by HB 1319, APCo provided technical feasibility and cost analyses for placing all or a portion of the line underground. APCo estimated that an underground alternative would likely more than triple the cost of the project; however, by placing only a portion of the line underground, the utility could meet the cost criteria imposed by HB 1319. Regarding the technical feasibility criteria, the Staff believes that undergrounding the project, while not impossible, is neither practical nor sensible. Based primarily on a field inspection of the preferred and alternative routes on October 1, 2008, the Staff has concluded that undergrounding might not be a reasonable alternative for the Sunscape project. A Staff report on the application has been filed and the SCC hearing on the Sunscape project is scheduled for December 10, 2008.

Matt Funk 138 kV Transmission Line

On August 18, 2008, APCo filed its application with the Commission for approval and issuance of a certificate of public convenience and necessity to construct and operate a 4.5-mile, double-circuit 138 kV overhead transmission line and a half-mile 138 kV bus tie in southwestern Roanoke County (Case No. PUE-2008-00079). The purpose of the proposed project is to maintain reliability in the Roanoke area. The utility's preferred route of the proposed project would be located entirely within southwestern Roanoke County, while the viable alternative route would traverse a portion of Montgomery County as well.

The estimated cost of all facilities to be included in the proposed project is approximately \$37.3 million, including \$23 million for the bus tie and associated substation work and \$14.3 million for the transmission line using the preferred route. APCo expects construction to take 18 months, with an anticipated service date in 2011.

The Staff is in the process of analyzing the Matt Funk project as a potentially qualified project for purposes of the pilot program. The Commission has directed the Staff to file its report on the application no later than January 16, 2009. An SCC hearing has been scheduled for February 25, 2009.

Huntington Court–Roanoke 138 kV Transmission Line

On October 10, 2008, APCo filed its application with the Commission for approval and issuance of a certificate of public convenience and necessity to construct and operate a 6-mile, double-circuit 138 kV overhead transmission line in the Roanoke area (Case No. PUE-2008-00079). The \$16 million project is scheduled to be in service by 2011. The Staff is in the early stages of analyzing the application, and the Commission has not yet scheduled a hearing.

Summary of HB 1319 Pilot Program Progress

This section presented an update of the status of the HB 1319 pilot program, including a description of qualified and potentially qualified pilot projects. Through November 1, 2008, the SCC received applications for five transmission lines that have been or are being evaluated for inclusion in the HB 1319 pilot program. APCo has submitted three applications for 138 kV *overhead* transmission lines. Virginia Power has submitted two applications for 230 kV *underground* transmission lines, one of which, in accordance with the Act, was for a portion of the Pleasant View–Hamilton transmission line previously approved by the SCC as an overhead line. To date, the underground section of the Pleasant View–Hamilton line is the sole approved pilot project.

SUMMARY, ANALYSIS AND CONCLUSIONS

Summary

By emergency legislation enacted in 2008, the Virginia General Assembly established a pilot program to construct four qualifying electrical transmission lines of 230 kilovolts or less in whole or in part underground. The Act directed the SCC to “report annually to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and the Governor on the progress of the pilot program by no later than December 1 of each year that this Act is in effect.” In addition, the Act stated that the SCC “shall submit a final report to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and Governor no later than December 1, 2012, analyzing the entire program and making recommendations about the continued placement of transmission lines underground in the Commonwealth.”

From the effective date of the Act through November 1, 2008, the SCC had received five applications from public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kV or less. APCo submitted three applications for 138 kV overhead transmission lines, and Virginia Power submitted two applications for 230 kV underground transmission lines, one of which, in accordance with the Act, was for a portion of a transmission line previously approved by the SCC as an overhead line. As of the date of this report, the Commission had approved as an underground pilot project only DVP’s application for a portion of the transmission line previously approved by the SCC as an overhead line. DVP’s other application and APCo’s three applications are under review.

This first annual report has provided a summary of the Act establishing the pilot program, an explanation of the underground pilot selection process, and a presentation of the pilot program’s progress. Appendix A includes a copy of the Act.

Analysis

This report addresses five transmission lines that either have been approved or are being evaluated for inclusion in the pilot program established by Chapter 799 of the 2008 Acts of Assembly (“HB 1319”). The five transmission lines are identified in Table 1. Table 1 also summarizes the extent to which each transmission line meets the criteria necessary to qualify for the pilot program, as well as the pilot status of each line.

Virginia Power submitted applications for all or a portion of two 230 kV transmission lines in Loudoun County to be placed underground and to be included as qualifying projects for the HB 1319 pilot program. A two-mile segment of the Pleasant View–Hamilton line has been approved by the Commission for the pilot program in accordance with § 2.A of HB 1319. Virginia Power has estimated mileage costs of approximately \$14.1 million per mile for the two-mile underground segment of the Pleasant View–Hamilton line, which is approximately double the cost-per-mile of the overhead portion of the line. In addition, the utility has filed an application for approval of the proposed Beaumeade–NIVO transmission line and has requested that this line be selected for the pilot program. Both the Pleasant View–Hamilton line, which has been approved in accordance with § 2.A of HB 1319, and the Beaumeade–NIVO line appear to meet the technical feasibility and cost criteria established by the Act. Virginia Power anticipates that the Loudoun County Board of Supervisors will indicate, by resolution, general community support for the Beaumeade–NIVO line to be placed underground as required by § 4 of HB 1319.

APCo submitted three applications for 138 kV overhead transmission lines, all of which are in the Roanoke area: Sunscape, Matt Funk, and Huntington Court–Roanoke. APCo has not specifically proposed that any of these lines be considered for the pilot program, but the SCC is nevertheless required to evaluate these lines for possible inclusion in the pilot program. APCo estimates that placing the Sunscape line underground would triple the cost of the project; however that cost could be reduced by placing only a portion of the line underground. Cost estimates for placing the Matt Funk and Huntington Court–Roanoke lines underground have not been performed. The Staff is in the process of requesting and analyzing the information needed to evaluate the technical feasibility and potential costs and benefits of placing the lines underground.

Conclusions

The SCC has initiated a pilot program to construct four qualifying electrical transmission lines of 230 kV or less in whole or in part underground as required by Chapter 799 of the 2008 Acts of Assembly. As of the date of this report, only one transmission line has been approved for inclusion in the pilot program. As required by the Act, three more qualified transmission lines must be approved for inclusion in the pilot program by 2012. The Commission will continue to file annual reports on December 1 of each year until the pilot program has been completed and will file a final report no later than December 1, 2012. The final report will include an analysis of the entire pilot program and make recommendations about the continued placement of transmission lines underground in the Commonwealth.

TABLE 1. HB 1319 QUALIFIED AND POTENTIALLY QUALIFIED PILOT PROJECTS

TRANSMISSION LINE / SCC CASE NUMBER	FEASIBILITY TEST	COST TEST*	RESOLUTION BY LOCALITY	PILOT STATUS
Dominion Virginia Power Transmission Lines				
Pleasant View– Hamilton 230 kV PUE-2008-00027 Filed 4/21/2008	Technically Feasible	Not Applicable	Not Applicable	Required by Act
Beaumeade–NIVO 230 kV PUE-2008-00063 Filed 7/21/2008	Technically Feasible	1.4 times the cost of OH for undergrounding the total route	Anticipated	To be determined (Requested as pilot by DVP)
APCo Transmission Lines				
Sunscape 138 kV PUE-2008-00053 Filed 6/20/2008	To be determined	3 times the cost of OH for undergrounding the total route	To be determined	To be determined
Matt Funk 138 kV PUE-2008-00079 Filed 8/18/2008	To be determined	To be determined	To be determined	To be determined
Huntington Court– Roanoke 138 kV PUE-2008-00096 Filed 10/10/2008	To be determined	To be determined	To be determined	To be determined

* The estimated cost should be less than 2.5 times the cost of overhead unless otherwise agreed to by the public utility, the affected localities, and the State Corporation Commission.

**APPENDIX A: HOUSE BILL 1319
(CHAPTER 799 OF THE 2008 ACTS OF ASSEMBLY)**

CHAPTER 799

An Act to establish a pilot program to place certain transmission lines underground.

[H 1319]

Approved April 2, 2008

Be it enacted by the General Assembly of Virginia:

1. *§ 1. There is hereby established a pilot program to construct qualifying electrical transmission lines of 230 kilovolts or less in whole or in part underground. Such pilot program shall consist of a total of four qualifying electrical transmission line projects, constructed in whole or in part underground, as set forth in this act.*

§ 2. A. Notwithstanding any other law to the contrary, as a part of the pilot program established pursuant to this act, the State Corporation Commission shall approve as a qualifying project a transmission line of 230 kilovolts or less that has received a certificate of public convenience and necessity from the State Corporation Commission prior to the effective date of this act that approved construction of an electrical transmission line in a right of way located upon land owned by a regional park authority used by the general public for park and recreation purposes, provided that the construction of such electrical transmission line has not commenced prior to the effective date of this act. The project shall be constructed in part underground, and the underground portion shall consist of a double circuit.

The State Corporation Commission shall approve such underground construction within 30 days of receipt of the written request of the public utility to participate in the pilot program pursuant to this section. The Commission shall not require the submission of additional technical and cost analyses as a condition of its approval, but may request such analyses for its review. The Commission shall approve the underground construction of one contiguous segment of the transmission line that is approximately 1.8 miles in length that was previously approved for construction upon or immediately adjacent to the right of way of the regional park authority, provided that the underground construction shall be located within the boundaries of such existing right of way upon the land owned by the regional park authority, excluding any substation or transition locations which may be required as a part thereof. The Commission shall make a finding establishing the termini of the underground portion of the line. The remainder of the construction for the previously approved transmission line shall be aboveground pursuant to the terms of the certificate of public convenience and necessity. The Commission shall not be required to perform any further analysis as to the impacts of this route, including environmental impacts or impacts upon historical resources.

The approval for constructing the above-described portion of the previously approved electrical transmission line as a double circuit underground shall not impair or delay the implementation of the certificate of public convenience and necessity and no further notice, testimony, or hearings shall be required in connection with such approval. The electric utility may proceed to acquire right of way and take such other actions as it deems appropriate in furtherance of the construction of the approved transmission line, including acquiring the cables necessary for the underground installation. Approval of a

transmission line pursuant to this section for inclusion in the pilot program shall be deemed to satisfy the requirements of § [15.2-2232](#) and local zoning ordinances with respect to such transmission line and any substations or transition locations that may be required.

B. If the qualifying project approved in subsection A provides only radial, rather than networked, electric service, there shall be a presumption of need in applications filed for a certificate of public convenience and necessity for electrical transmission lines that will complete the network for such qualifying project. The State Corporation Commission shall give priority on its docket for any such application of a public utility. Upon written request of the public utility for participation in the pilot program pursuant to this section, the Commission shall approve the construction of such additional network facilities in whole or in part underground, and such additional network facilities shall be considered a qualifying project for purposes of this act. The Commission shall not require the submission of additional technical and cost analyses as a condition of such approval, but may request such analyses for its review.

§ 3. In reviewing applications submitted by public utilities for certificates of public convenience and necessity for the construction of electrical transmission lines of 230 kilovolts or less filed between the effective date of this act and July 1, 2012, the State Corporation Commission shall approve three applications for qualifying projects to be constructed in whole or in part underground, as a part of the pilot program. The three qualifying projects shall be in addition to the qualifying project described in subsection A of § 2. If a public utility submits an application for a certificate of public convenience and necessity for an electrical transmission line that completes the network for a qualifying project as set forth in subsection B of § 2, the approval of such application shall constitute one of the three additional projects to be approved pursuant to this section.

§ 4. For purposes of this act, a project shall be qualified to be placed underground, in whole or in part, if it meets all of the following criteria:

- 1. An engineering analysis demonstrates that it is technically feasible to place the proposed line, in whole or in part, underground;*
- 2. The estimated additional cost of placing the proposed line, in whole or in part, underground does not exceed 2.5 times the cost of placing the same line overhead, assuming accepted industry standards for undergrounding to ensure safety and reliability. If the public utility, the affected localities, and the State Corporation Commission agree, a proposed underground line whose cost exceeds 2.5 times the cost of placing the line overhead may also be accepted into the pilot program; and*
- 3. The governing body of each locality in which a portion of the proposed line will be placed underground indicates, by resolution, general community support for the line to be placed underground.*

§ 5. A. If the State Corporation Commission identifies an application as a potentially qualified project for purposes of the pilot program, the Commission shall request that the

public utility provide technical and cost analyses for placing the proposed line overhead and for placing the proposed line, in whole or in part, underground.

B. If any application relates to the construction of a proposed line to meet a specific and identifiable industry's needs, and the project must be completed by the public utility within a specific amount of time to facilitate an economic development agreement, then such application need not include the two analyses, so long as the public utility provides documentation regarding the economic development agreement.

§ 6. The State Corporation Commission shall report annually to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and the Governor on the progress of the pilot program by no later than December 1 of each year that this act is in effect. The State Corporation Commission shall submit a final report to the Commission on Electric Utility Restructuring, the Joint Commission on Technology and Science, and the Governor no later than December 1, 2012, analyzing the entire program and making recommendations about the continued placement of transmission lines underground in the Commonwealth.

§ 7. For any qualifying project chosen pursuant to this act (regardless of whether such project is chosen pursuant to § 2 or 3) and not fully recoverable as charges for new transmission facilities pursuant to subdivision A 4 of § [56-585.1](#), the State Corporation Commission shall approve a rate adjustment clause. The rate adjustment clause shall provide for the full and timely recovery of any portion of the cost of such project not recoverable under applicable rates, terms, and conditions approved by the Federal Energy Regulatory Commission and shall include the use of the fair return on common equity most recently approved in a Commission proceeding for such utility, as defined by subsection A of § [56-585.1](#). Such costs shall be entirely assigned to the utility's Virginia jurisdictional customers. The Commission's final order regarding any petition filed pursuant to this subsection shall be entered not more than three months after the filing of such petition.

§ 8. If a transmission line is included in the pilot program pursuant to § 3 that includes only radial, rather than networked, electric service, there shall be a presumption of need in applications for a certificate of public convenience and necessity for electrical transmission lines that will complete the network for such qualifying project. The State Corporation Commission shall give priority on its docket for any such application of a public utility.

§ 9. Approval of a proposed transmission line for inclusion in this program shall not preclude the placing of existing or future overhead facilities in the same area or corridor by other transmission projects.

§ 10. Public utility companies granted a certificate of public convenience and necessity for a proposed transmission line not included in this program or not otherwise being placed underground shall seek to implement low-cost and effective means to improve the aesthetics of new overhead transmission lines and towers.

§ 11. The provisions of this act shall not be construed to limit the ability of the State Corporation Commission to approve additional applications for placement of transmission lines underground.

§ 12. If four applications are not submitted to the State Corporation Commission that meet the requirements of this act, the State Corporation Commission shall document the failure of the projects to qualify for the pilot program in order to justify approving fewer than four projects to be placed underground, in whole or in part.

§ 13. Insofar as the provisions of this act are inconsistent with the provisions of any other law or local ordinance, the provisions of this act shall be controlling.

2. That an emergency exists and this act is in force from its passage.

[Legislative Information System](#)