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November 5, 2015

VIA ELECTRONIC FILING

Mr. Joel H. Peck, Clerk
c/o Document Control Center
State Corporation Commission
Tyler Building – First Floor
1300 East Main Street
Richmond, Virginia 23219

RE: For approval and certification of the proposed Greensville County Power Station and related transmission facilities pursuant to §§ 56-580 D, 56-265.2, and 56-46.1 of the Code of Virginia, and for approval of a rate adjustment clause, designated Rider GV, pursuant to § 56-585.1 A 6 of the Code of Virginia

Case No. PUE-2015-00075

Dear Mr. Peck:

Attached for filing in the above-referenced matter is the Direct Testimony of Rachel S. Wilson, which is being submitted on behalf of Appalachian Voices, the Chesapeake Climate Action Network ("CCAN"), and the Natural Resources Defense Council ("NRDC") (collectively, "Environmental Respondents"). Included with this testimony is Ms. Wilson's one-page summary and four exhibits. This filing is being completed electronically, pursuant to the Commission's Electronic Document Filing system.

If you should have any questions regarding this filing, please contact me at (434) 977-4090.

Regards,

Cale Jaffe

cc: Parties on Service List
Commission Staff

Summary of the Testimony of Rachel S. Wilson

My testimony analyzes Dominion's application for a CPCN for the Greensville NGCC project, considering the Company's analysis of need and evaluating the Company's review of alternatives. I find that Dominion overstated its electric load and thus the need for the Greensville plant, and did not give appropriate consideration to the numerous technologies that offer an alternative to the self-build NGCC option proposed in this docket, as required under Virginia Code §56-585.1 A 6.

First, the Company's analysis of need overstates electric demand. It does not consider reductions in load from increased energy efficiency nor from the recent changes in PJM's load forecasting methodology. Dominion must demonstrate the need for a new capacity resource, especially a major new resource of this size. Dominion's erroneous assumptions, along with the changes to PJM's forecasting methodology, suggest that the load forecast used in this docket is overstated.

Second, the modeling done by Dominion in this proceeding and in the IRP docket do not support Greensville as the least-cost option—especially in light of Virginia's pending obligations under the Clean Power Plan ("CPP"). Dominion did not use Strategist's optimization capabilities to allow the model to select Greensville as an optimal resource, instead manually inputting it into the model as new capacity. In the IRP, the Company stated its belief that new natural gas resources will not meet the CO_2 standards required by the CPP. The Greensville project thus may not be the most economic resource choice for ratepayers, and a commitment to a large increase in natural gas use could in fact make it more difficult and more expensive for the Company to meet the CPP emission reduction targets than if another resource, or combination of resources, had been chosen.

Finally, the Company's analysis of alternatives improperly restricted the available resource choices. The Company did not include a range of potential resources that might meet energy and capacity needs at a lower cost. Following the example of the Public Service Company of Colorado ("Xcel"), Dominion should have developed an all-source solicitation/RFP that evaluated bids from a combination of gas, solar, and wind generation resources to meet its anticipated needs. Dominion's analysis was thus too limited and failed to consider options that would better protect ratepayers from significant increases in their electric rates, would deliver additional savings in the form of a lower fuel factor, and provide benefits to the electric grid.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF VIRGINIA ELECTRIC	)	
	)	
AND POWER COMPANY	)	
	)	Case No. PUE-2015-00075
For approval and certification of the proposed	)	
Greensville County Power Station and related	)	
transmission facilities pursuant to §§ 56-580 D,	)	
56-265.2, and 56-46.1 of the Code of Virginia and	)	
for approval of a rate adjustment clause,	)	
designated Rider GV, pursuant to § 56-585.1 A6	)	
of the Code of Virginia	)	

Direct Testimony of
Rachel S. Wilson

On Behalf of
Environmental Respondents

November 5, 2015

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1. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and position.

A. My name is Rachel Wilson and I am a Senior Associate with Synapse Energy Economics, Incorporated ("Synapse"). My business address is 485 Massachusetts Avenue, Suite 2, Cambridge, Massachusetts 02139.

Q. Please describe Synapse Energy Economics.

A. Synapse is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, ratemaking and rate design, electric industry restructuring and market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government agencies, and utilities.

Q. Please summarize your work experience and educational background.

A. At Synapse, I conduct research and write testimony and publications that focus on a variety of issues relating to electric utilities, including: integrated resource planning; federal and state clean air policies; emissions from electricity generation; environmental compliance technologies, strategies, and costs; electrical system dispatch; and valuation of environmental externalities from power plants.

I also perform modeling analyses of electric power systems. I am proficient in the use of spreadsheet analysis tools, as well as optimization and electricity dispatch models to conduct analyses of utility service territories and regional energy markets. I have direct experience running the Strategist, PROMOD IV, PROSYM/Market Analytics, PLEXOS, and PCI Gentrader models, and have reviewed input and output data for a number of other industry models.

Prior to joining Synapse in 2008, I worked for the Analysis Group, Inc., an economic and business consulting firm, where I provided litigation support in the form of research and quantitative analyses on a variety of issues relating to the electric industry.

I hold a Master of Environmental Management from Yale University and a Bachelor of Arts in Environment, Economics, and Politics from Claremont McKenna College in Claremont, California.

A copy of my current resume is attached as Exhibit RW-1.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Appalachian Voices, Chesapeake Climate Action Network, and the Natural Resources Defense Council, ("Environmental Respondents") who are represented in this proceeding by the Southern Environmental Law Center.

Q. Have you testified previously before the State Corporation Commission of Virginia?

A. No, I have not.

Q. What is the purpose of your testimony in this proceeding?

A. My testimony examines the petition for a Certificate of Public Convenience and Necessity ("CPCN") filed by Virginia Electric and Power Company ("Dominion" or the "Company") to construct and operate the Greensville County Power Station, an approximately 1,588 megawatt ("MW") natural gas-fired combined-cycle ("NGCC") unit in Virginia, and to increase electric rates to recover the cost of the project. Specifically, my testimony describes the ways in which Dominion has overstated its electric load and thus the need for the Greensville plant. I also evaluate the Company's analysis of alternatives, and find that it did not give appropriate consideration to the numerous technologies that offer an alternative to the self-build NGCC option proposed in this docket, as required under Virginia Code §56-585.1 A 6.

Q. Please identify the documents and filings on which you base your opinions regarding Dominion's application for CPCN for the proposed Greensville NGCC plant.

A. In addition to the Company witnesses' testimonies and the responses to interrogatories in this case, I have reviewed the 2015 Integrated Resource Plan ("IRP") filed on July 1 by Dominion Virginia Power and Dominion North Carolina Power and read the associated testimonies of Jeff Loiter, Karl Rabago, and the Virginia State Corporation Commission Staff filed in Case Number PUE-2015-00035.

2. OVERVIEW OF TESTIMONY AND CONCLUSIONS

Q. In your opinion, do the facts and evidence presented in this case support the Company's petition for a CPCN for the proposed Greensville NGCC and the associated rate increase?

A. No, they do not. The purpose of a CPCN proceeding is for a company to provide justification to a state regulatory body for a large capital investment in generation or transmission infrastructure. This justification should include the identification and quantification of the need for the project, as well as an analysis of all reasonable alternatives and the demonstration that the recommended project is the one that meets the expected need at the lowest cost to ratepayers. It is my opinion that Dominion overstated the need for the Greensville project, did not provide a sufficient analysis of alternatives, and did not demonstrate that the Greensville project is the least-cost resource available to meet projected electric need.

Q. What is the basis of your objection to Dominion's petition?

A. First, the Company's analysis of need overstates electric demand. It does not consider reductions in load from increased energy efficiency, nor does it consider recent changes in PJM's load forecasting methodology. Second, the modeling done by Dominion in this proceeding and in the IRP docket do not support Greensville as the least-cost option—especially in light of Virginia's pending obligations under the Clean Power Plan ("CPP"). Finally, the Company's analysis

of alternatives restricted the available resource choices to baseload or intermediate technologies. It did not include a range of potential resources that might meet energy and capacity needs at a lower cost. The analysis was thus too limited and failed to consider options that would better protect ratepayers from significant increases in their electric rates while providing benefits to the electric grid.

3. DOMINION'S ANALYSIS OF NEED

Q. Please describe Dominion's analysis of need for the Greensville project.

A. Dominion projects that load will grow significantly over the planning period analyzed in its IRP, estimating a weather-normalized annual average peak load growth rate in the Dominion Zone of 1.5 percent through 2030. This results in an increase of 4,580 MW over the time period. The Company projects that annual energy requirements will grow at 1.4 percent over the next 15 years, resulting in an increase of 20,559 GWh by 2030.[1] Using these load growth projects, Dominion estimates that a capacity gap of 1,069 MW will exist in 2019, growing to 5,608 MW in 2030.[2]

Q. Have Dominion's recent load forecasts been compared to observed results?

A. In the recent IRP docket, Staff submitted comments stating that "(g)eneral inspection of the Company's previous IRP filings finds that Virginia Power's forecast of peak demand and energy tends to be higher than actually realized."[3] I will not comment specifically on the Company's methodology. However, it is important to emphasize that Dominion makes specific assumptions that may widen the capacity and energy gap beyond that which might actually exist, and that policies set by the Company do not promote energy conservation, and in fact encourage load growth.

[1] Testimony of Glenn A. Kelly. Case No. PUE-2015-00075. July 1, 2015. Page 4, line 1 through page 5, line 4.
[2] Testimony of Glenn A. Kelly. Case No. PUE-2015-00075. July 1, 2015. Page 8, line 23.
[3] Prefiled Staff Testimony. Case No. PUE-2015-00035. September 28, 2015. Page 5, lines 7-9.

Q. What are the specific assumptions made by Dominion that may widen the gap in capacity and energy?

A. First, Dominion's forecast of total system summer peak, presented on page 50 of the 2015 IRP, does not include conservation and energy efficiency adjustments. Applying a reserve margin requirement to these unadjusted values will result in a higher total resource requirement than actually exists. Dominion has energy efficiency programs in place, and the expected savings that result from these programs should be included in the load forecast in order to produce a more accurate estimate of peak and energy needs.

Second, Dominion states in the IRP that it has existing contracts with non-utility generators for 1,684 MW,[4] which is more than the capacity of the proposed Greensville NGCC unit. These contracts expire at different times during the planning horizon, beginning on May 31, 2015, with the last contract expiring in 2021, and at the expiration of the contract, Dominion assumes that "these units will no longer be modeled as a firm generating capacity resource" and instead "are available to the Company at market prices."[5] The expiration of the contracts creates a capacity gap that is approximately the size of the entire Greensville project. Dominion did not provide justification for this assumption in the IRP—the Company did not provide evidence that renewal of the PPAs was either not possible or would be priced unfavorably. It did not adequately consider in the IRP document and the associated modeling the possibility that some or all of these PPAs might be renewed at prices that are below market, or that PPAs from other entities might become available during the 2015 to 2021 time period, thus offsetting a portion of the need for the Greensville NGCC. This is important because this is one of the major functions of the PJM market—when prices rise it

[4] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 36.
[5] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 36.

sends a signal to non-utility generators to enter the market and provide competitively priced energy and capacity, causing prices to adjust. Therefore, there is reason to believe that some amount of capacity and energy would be available in the form of a PPA between 2015 and 2021.

Q. Why do you suggest that Dominion's policies do not promote energy conservation?

A. Dominion is achieving energy efficiency levels that are well below what is being achieved in other jurisdictions. The amount of energy efficiency contained in the IRP is *less than half of that which was identified as the lower bound* in the Dominion's own energy efficiency study.[6] By the year 2022, the IRP includes only 997 GWh of efficiency savings, compared to the 2,112 GWh that make up the lower bound of efficiency potential in the Dominion service territory. As shown on page 121 of the Company's IRP, its High DSM sensitivity case includes savings of 6,179 GWh, which is substantially higher than Dominion's reference case scenario.[7]

The US EPA intends for energy efficiency to play an important role in meeting CPP emission reduction targets in all states: "(t)he Clean Power Plan puts energy efficiency front and center because it is an important, proven strategy used by states that can substantially and cost-effectively lower carbon dioxide emissions from the power sector."[8] The EPA states that demand-side energy efficiency policies and programs have low costs and large potential in every state, and the agency expects that efficiency will "be a significant component of state

[6] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 96.
[7] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 121.
[8] US EPA. Fact Sheet: Energy Efficiency in the Clean Power Plan. Accessed on November 2, 2015. Available at: http://www2.epa.gov/cleanpowerplan/fact-sheet-energy-efficiency-clean-power-plan

compliance plans."[9] The agency found that under the Clean Power Plan, efficiency programs will lead to a 7 percent reduction in demand by 2030.[10] Rather than prioritizing the construction of expensive new capacity that can only lead to rate increases for consumers, Dominion should instead emphasize energy efficiency in its service territory and its ability to reduce ratepayer bills. Building unnecessary capacity does a disservice to the consumers in the Company's service territory as it raises both rates and bills.

Q. **Dominion cites PJM's 2015 load forecast as support for the rates of growth present in its own load forecast. Is it not correct that PJM is currently in the process of revising its forecasting methodology?**

A. Yes. During the process of developing the load forecast, the PJM Board and various Stakeholders expressed concern that the market had been over-forecasting its loads in the past.[11] As a result, the Load Analysis Subcommittee was tasked with identifying short-term measures to remedy the over-forecasting for the 2015 Load Forecast, as well as developing a more comprehensive strategy for 2016.

Q. What are those revisions, and what effect have they had on the 2015 load forecast?

A. PJM made changes to the weather specifications and shortened the weather period; updated the economic forecasts assumptions using data from Moody's Analytics (and will do so again for the 2016 load forecast); updated the information on equipment saturation and efficiency; and updated consideration of energy efficiency to include the project saturation and efficiency of that equipment rather than limiting consideration to actions that would qualify as an EE resource in the RPM, which allows for the forecast to recognize types of

[9] US EPA. Fact Sheet: Energy Efficiency in the Clean Power Plan. Accessed on November 2, 2015. Available at: http://www2.epa.gov/cleanpowerplan/fact-sheet-energy-efficiency-clean-power-plan
[10] US EPA. Fact Sheet: Energy Efficiency in the Clean Power Plan. Accessed on November 2, 2015. Available at: http://www2.epa.gov/cleanpowerplan/fact-sheet-energy-efficiency-clean-power-plan
[11] PJM Interconnection Load Analysis Subcommittee. Minutes of the 304th Meeting. November 24, 2014. Available at: http://www.pjm.com/~/media/committees-groups/subcommittees/las/20141124/20141124-las-minutes.ashx

energy efficiency that might not bid into the market as a supply-side resource as well as the evolution of equipment and appliances.[12] The most recent version of the updated forecast was released in September 2015, and is 2.6 percent lower in the summer for the PJM market than the official 2015 forecast for 2018. The summer 10-year growth rate declined from 0.99 percent in the official forecast to 0.85 percent. For the winter season, the updated forecast is 1.8 percent lower than the official forecast, with a 10-year growth rate of -1.3 percent, as compared to +0.6 percent.[13]

The result of these changes is in a decrease of just under 1,000 MW for the winter peak in 2030 for the VEPCO zone from the official 2015 load forecast, and a decrease of approximately 1,500 MW for the summer peak. Those forecasted figures are shown as Exhibit RW-2 and Exhibit RW-3, respectively.

Q. Will additional changes be made to the 2016 load forecasting methodology?

A. Yes. PJM will again update the economic data from Moody's Analytics as well as the equipment index trends. Distributed generation has not yet been incorporated into the load forecast, and inclusion of these resources will likely put additional downward pressure on loads.

Q. What do these changes mean for Dominion's showing of need in this docket?

A. Dominion, of course, bears the burden of demonstrating the need for a new capacity resource, especially a major new resource of this size. The changes to PJM's forecasting methodology raise serious questions about whether the Company erred in basing its load forecast on outdated methods and data.

[12] PJM Interconnection Load Analysis Subcommittee. Follow-up Analysis of Proposed Changes to the PJM Load Forecast Model. May 27, 2015. Available at: http://www.pjm.com/~/media/committees-groups/subcommittees/las/20150527/20150527-item-03-forecast-changes-update.ashx

[13] PJM Interconnection Load Analysis Subcommittee. Updates to Load Forecast Methodology. September 2, 2015. Available at: http://www.pjm.com/~/media/committees-groups/subcommittees/las/20150902/20150902-item-04-forecast-update.ashx

Q. Are Dominion's policies in the best interest of ratepayers to encourage energy conservation?

A. No. In fact, Dominion has at least one policy that I am aware of that specifically encourages load growth in its service territory.

Q. Please describe the Dominion policy that you refer to that encourages load growth.

A. In the 2015 IRP, Dominion performed a rate design analysis, comparing its winter declining block rates to alternative rate designs. A declining block rate means that customer electricity prices decline as they consume more energy; thus, an incentive exists for customers to use more electricity than they might under another policy. In other words, Dominion's rate design increases electric load beyond what it otherwise might have been. Dominion examined five other rate design alternatives, which it labels A through E. At least one of the seasonal peaks is reduced under each of the policies, and under policy E, both winter and summer peaks decline.[14]

Q. Did the Commission Staff comment on these alternative rate designs in the IRP docket?

A. Yes. Pages 40 through 45 from the pre-filed testimony of Staff witness Gregory L. Abbott, in PUE-2015-00035, discuss rate design. Mr. Abbott notes that policy E "would result in NPV cost savings ranging from $911 million to $955 million." Staff recommended "that the Commission direct the Company to continue to report on residential rate designs Plan D and Plan E in future IRPs."

Q. Are there additional reasons, beyond the cost savings identified by Commission Staff witness Gregory Abbott, to explore alternative rate designs?

A. Yes. Dominion's current policy of declining block rates is regressive, and disadvantages low-income consumers that also tend to be the lowest users of

[14] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Appendix A, page A-28.

electricity, as they pay the highest rate for the initial block of electricity that they use. In other words, the current system leads to a cross-subsidization of higher-income consumers by low-income consumers. To remedy this, any of the alternative rate designs would likely result in lower rates for low-income consumers and also lower energy bills. The alternative rate designs would encourage more conservation among the highest users of electricity, so even though rates for these customers may be higher, they may also see reductions in their overall bills. Ultimately, the resulting reductions in load could defer or offset investments by Dominion in new capacity, which would keep rates and bills lower than if ratepayers were forced to bear the cost of expensive, unnecessary, new generating capacity built by the Company.

4. OVERVIEW OF DOMINION'S MODELING ANALYSIS

Q. Please describe the modeling analysis performed by Dominion to support its petition and proposed rate increase.

A. Mr. Rogers states in his testimony that the Dominion IRP process determined that the Greensville project is the optimal economic and operational choice to support the Company's growing customer needs compared to all resource alternatives.[15]

As part of the IRP process, Dominion compared the Greensville NGCC to market alternatives though a Request for Proposal ("RFP") process. In November 2014, Dominion issued an RFP for baseload and intermediate resources that are fully dispatchable, with delivery commencing in 2019/2020. As I explain below, the RFP is fatally flawed in that it fails to consider the full array of alternatives that might best serve customers. Following the example of the Public Service Company of Colorado ("Xcel"), Dominion should have developed an all-source

[15] Testimony of Steven A. Rogers. Case No. PUE-2015-00075. July 1, 2015. Page 5, lines 20-23 and page 6, lines 1-6.

solicitation/RFP that evaluated bids from a combination of gas, solar, and wind generation resources to meet its anticipated needs.[16]

Under the flawed RFP from Dominion in this docket, submittals must have offered a minimum of 300 MW of summer firm capacity, up to approximately 1,600 MW, with a duration of ten to twenty years, and be physically located in or in near proximity to the PJM Dominion Transmission Zone.[17] The proposals received in response to the RFP were evaluated against Dominion's self-build option based on price and non-price factors. According to Mr. Glenn A. Kelly, the price evaluation involved a three step process: first, the Company developed a levelized busbar curve as an initial economic screen of each proposal; second, the Company used the production cost capabilities of the Strategist model to determine the expected value of each proposal against replacement power and capacity as part of the Company's portfolio; and third, the Company used Strategist's optimization capabilities to allow the model to select multiple proposals in a single portfolio in order to test if any resource combinations might result in a lower cost plan.[18] Dominion found that the Greensville project was the most favorable of the alternatives under this methodology.

During the IRP process, Dominion used the Strategist electric system optimization model to develop resource portfolios that meet peak and annual energy requirements over a specific future time period. Strategist compares both the capital and operating costs of various types of supply- and demand-side resources in order to arrive at the resource portfolio with the lowest net present value of resource requirements (referred to as "NPVRR" or "PVRR"), subject to user-imposed constraints. In its 2015 IRP, Dominion looked at five different

[16] Public Service Company of Colorado. 2013 All Source Solicitation 120 Day Report. CPUC Docket No. 11A-869E. September 9, 2013. Page 4.
[17] Testimony of Michael S. Hupp, Jr. Case No. PUE-2015-00075. July 1, 2015. Page 5, lines 1-19.
[18] Testimony of Glenn A. Kelly. Case No. PUE-2015-00075. July 1, 2015. Page 18, line 21 through page 20, line 3.

resource portfolios: a least-cost plan that does not comply with Clean Power Plan CO_2 emission reduction requirements, and four plans that utilize varying levels of solar, co-firing, nuclear, and wind to meet emissions targets.[19] Of the four compliant plans, none were identified in the IRP document as "least-cost."

The Greensville NGCC unit appears in all five of the resource portfolios, and Mr. Kelly states that the Company did not select a preferred plan due to environmental and market uncertainty, but that "the (Greensville) Project was selected in all five plans."[20] He also justifies the need for the plant by stating that it has been present in all of the Dominion IRPs since 2011; however, conditions in the electric sector in 2011 were quite different than they are now. The Commission ordered in the 2011 IRP docket that "finding that an IRP is reasonable and in the public interest under §56-599 E of the Code in no manner represents—and should not be characterized as representing—explicit or implicit approval for construction or cost recovery of any specific resource option contained in the IRP."[21]

Q. Do you have any critiques of Dominion's modeling process?

A. Yes, I have several. First, contrary to Mr. Kelly's assertion that the Greensville project was selected by the Strategist model in all five plans, Dominion, in its 2015 IRP, *manually included* in its five portfolios all of "the resources for which the Company has filed approval and/or has been granted CPCN approval from the SCC, or has publically committed to pursuing, subject to SCC approval. These resources include…(the) Greensville County Power Station…"[22] Rather than being selected by Strategist as an optimal resource, the addition of the Greensville project to each resource portfolio was in fact an input assumption by Dominion.

[19] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 8.
[20] Testimony of Glenn A. Kelly. Case No. PUE-2015-00075. July 1, 2015. Page 6, lines 5-6.
[21] Commonwealth of Virginia State Corporation Commission. Final Order. Case No. PUE-2011-00092. March 19, 2012.
[22] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 112.

The Company stated its belief in the IRP that "(n)ew CTs and CCs fueled with natural gas…will not meet the CO_2 standards required by the CPP."[23] The Greensville project thus may not be the most economic resource choice for Dominion, and a commitment to a large increase in natural gas use could in fact make it more difficult and more expensive for the Company to meet the CPP emission reduction targets than if another resource, or combination of resources, had been chosen.

Second, in its IRP Dominion did not use Strategist's optimization capabilities to arrive at a portfolio of resources that was least-cost under the Clean Power Plan, nor did it model the effect that the addition of the Greensville NGCC would have on CPP compliance. The Greensville NGCC may or may not have a place in Virginia's CPP compliance plan, but the Company does not know because the effect of Greensville on CPP compliance was not tested as part of the IRP nor as part of the CPCN analysis.

Finally, Dominion unnecessarily limited the resources that were available to the Strategist model in the IRP analysis, and also the options that were available as alternatives to the Greensville NGCC in the RFP. In a CPCN proceeding, a utility must demonstrate that the proposed resource is in fact the one that will meet energy requirements at the lowest cost. Dominion's analysis excluded a number of potential resource options to meet its projected need, and for this reason, the Company does not demonstrate in its petition that Greensville is the least-cost resource. I discuss the consideration of alternatives in the next section.

[23] Dominion Virginia Power and Dominion North Carolina Power. July 1, 2015. Integrated Resource Plan. Page 86.

5. DOMINION'S CONSIDERATION OF ALTERNATIVES

Q. Is Dominion required to give specific treatment to alternative technologies in CPCN proceedings?

A. Yes. In 2013, the General Assembly of Virginia added the legal requirement that "(a) utility seeking approval to construct or purchase a generating facility shall demonstrate that it has considered and weighed alternative options, including third-party market alternatives, in its selection process."[24] The SCC emphasized the importance of evaluating third-party market alternatives in its Final Order in the 2013 Dominion IRP docket, asking that the Company consider and weigh these options, "especially third-party purchases that may provide long-term price stability."[25] That analysis should include, but not be limited to "wind and solar purchases at prices (including prices available through long-term purchase power agreements) and in quantities that are being seen in the market at the time the Company prepares its IRP filings."[26]

The Company's analysis of the Brunswick NGCC power plant and application for a CPCN (Case No. PUE-2012-00128) was challenged in 2013 on the grounds that Dominion did not adequately consider alternatives to the project, and though the Hearing Examiner found in favor of the intervenors, the SCC determined that Dominion's analysis was adequate, as the Company had filed its petition before the law was amended to include the new requirements on alternative analyses.[27]

The legal requirement was tested again in the Company's petition for a CPCN for the 20 MW Remington solar facility (Case No. PUE-2015-00006). The SCC found that Dominion used the North Carolina solar market as the basis for its

[24] Va. Code §56-585.1 A 6.
[25] Commonwealth of Virginia State Corporation Commission. Final Order. Case No. PUE-2013-00088. August 27, 2014.
[26] Commonwealth of Virginia State Corporation Commission. Final Order. Case No. PUE-2013-00088. August 27, 2014.
[27] Commonwealth of Virginia State Corporation Commission. Final Order. Case No. PUE-2012-00128. August 2, 2013.

evaluation of third-party market alternatives, and that this was not sufficient to satisfy the requirements of the statute. Consumer Counsel advocated for the evidence of actual alternatives or a formal RFP process in CPCN cases. Although I am not an attorney and I defer to counsel for Environmental Respondents on questions of law, I do read the Commission's order to find that actual alternatives would be relevant to the proceeding, although they might not be necessary and there "may be other methods to meet the statute's requirement."[28]

Q. Did Dominion adequately consider alternatives to the proposed Greensville NGCC project?

A. No. While Dominion conducted an RFP to compare Greensville to other similar generating units, this is not sufficient in this case. Dominion did issue an RFP in the case of the proposed Remington solar project. That project was extremely small at only 20 MW, and as the alternatives to it were more limited, it made sense to do an RFP to compare prices for projects of a similar size and capacity type. The Greensville NGCC, however, is a much bigger power station, and a combination of a number of different types of resources could offer an alternative to the Project. In addition, given the new constraints imposed by the CPP, it is Dominion's obligation to seek out a resource, or combination of resources, that could meet peak and energy requirements at a lower cost and with lower carbon emissions. It is correct that generating units fueled by coal, natural gas, or nuclear fuels are the few technologies that could substitute for Greensville on a 1:1 basis; however, this type of substitution is unnecessary. Given the falling costs of energy efficiency and renewable technologies and their increased performance, it is probable that a portfolio of resources that includes efficiency, renewables, and smaller gas units would meet energy and capacity needs at a lower cost to consumers, while offering other benefits to the electric grid.

[28] Commonwealth of Virginia State Corporation Commission. Final Order. Case No. PUE-2015-00006. October 20, 2015.

Q. Do you have any evidence to support your assertion that a portfolio of resources could meet the need at a lower cost?

A. Yes. As referenced earlier in my testimony, Xcel in Colorado conducted an All-Source Solicitation to meet an electricity supply need of between 250 and 717 MW. Xcel stated that "the bid prices received represents a watershed event" in that "the Company received *bids for utility-scale solar PV resources that are cost-effective head to head with natural-gas fired generation* under base-gas price forecasts and no carbon emission cost adders."[29] Xcel selected a combination of gas, solar and wind generation resources to meet its anticipated needs, and stated that, aside from being the low cost resource combination, the selected portfolio brought added customer value through increased geographic diversity, increased fuel diversity, decreased sensitivity to natural gas prices, and continued reductions in emissions of CO_2.[30] A copy of the Executive Summary of the All Source Solicitation 120 Day Report is included as Exhibit RW-4.

Q. What does this mean for Virginia?

A. It is probable that Dominion could have achieved a similar outcome if it had analyzed a portfolio of resources rather than a single unit or technology as a replacement for Greensville. Potential alternatives include:

- **Energy efficiency**: Often the most cost-effective resource, energy efficiency and other demand-side management measures reduce load, avoid expensive investments in supply-side technologies, and save consumers money. A March 2014 report by Lawrence Berkeley National Laboratory ("LBNL") compiled data on more than 1,700 efficiency programs, and shows the following costs of saved energy (levelized in 2012$) for program administrators for programs from 2009-2011:

[29] Public Service Company of Colorado. 2013 All Source Solicitation 120 Day Report. CPUC Docket No. 11A-869E. September 9, 2013. Page 4 (emphasis added).
[30] Public Service Company of Colorado. 2013 All Source Solicitation 120 Day Report. CPUC Docket No. 11A-869E. September 9, 2013. Page 5.

$0.021/kWh for commercial and industrial programs; $0.018 $/kWh for residential programs; $0.070 for low-income programs; and $0.017/kWh for cross sectoral programs.[31]

- **Solar energy**: A recent report from the LBNL states that on a levelized basis, PPAs for photovoltaics ("PV") come to $42.1/MWh compared to $48.1/MWh for the reference case natural gas fuel price projection, "suggesting that PV may be able to compete with even just the fuel costs of *existing* gas-fired generators (i.e., not even accounting for the recovery of fixed capital costs incurred by *new* gas-fired generators)."[32] Solar offers other benefits as well, as the time when PV installations are most effective—midday through late afternoon—coincides with summer peak demand. Distributed solar offers similar falling costs, as well as geographic diversity to a utility's system—it may be cloudy in one area but sunny in another—and offers the opportunity to avoid expensive investments in transmission and distribution infrastructure.[33]

- **Wind energy**: PPAs for wind that were executed in 2013 or 2014 have average price streams that begin below the range of reference case natural gas fuel cost projections, and remain below even the low-end of EIA gas price forecasts through 2040.[34] According to a recent report by the American Wind Energy Association, the intermittency of wind is easily smoothed out over the grid as demand rises and falls, and as output from other energy sources fluctuates. As more wind power is added to the grid,

[31] Billingsley, et al. The Program Administrator cost of Energy Saved for Utility Customer-Funded Energy Efficiency Programs. Lawrence Berkeley National Laboratory. March 2014. Page xi.
[32] Bolinger, Mark and Joachim Seel. Utility-Scale Solar 2014. Lawrence Berkeley National Laboratory. September 2015. Page 35.
[33] North Carolina has recently integrated more than 1 GW of solar capacity onto its grid, with the solar industry in the state accounting for $1.6 billion in revenue. See Smart Grid News: http://www.smartgridnews.com/story/nc-first-southeastern-state-hit-1-gw-solar/2015-09-29
[34] Wiser, Ryan and Mark Bolinger. 2014 Wind Technologies Market Report. Lawrence Berkeley National Laboratory. August 2015. Page 59.

the less variable wind energy becomes as a whole.[35] As part of PJM, we might expect that intermittency issues are less of a problem than Dominion has suggested.

- **Solar/Gas Hybrid**: Solar/gas hybrid resources should also have been considered by Dominion in its analysis. Solar plants do operate intermittently, and adding natural gas as a backup can extend the hours of operation of this type of facility and allow it to operate on demand. This alternative, which could include a smaller gas plant than what Dominion has proposed in this case, would be dispatchable and would allow customers to realize savings in the form of a lower fuel factor when compared to the Greensville County Power Station.

In addition to being cost-competitive, the resources described above have their own benefits and functions. They might not be designed to operate exactly as a gas plant would, but they would offer benefits beyond what an NGCC can provide. These resources could be combined with some smaller amount of new natural gas generation, or renewal of existing non-utility generator contracts, to create a portfolio of resources that has benefits to both customers and the electric grid, and avoids more expensive investments in generating capacity and transmission projects.

6. CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your conclusions.

A. Based on my review, I conclude that Dominion overstated its need for the Greensville NGCC project, did not perform a reasonable modeling analysis that

[35] American Wind Energy Association. Wind energy helps build a more reliable and balanced electricity portfolio. 2015. Available at: http://midwestenergynews.com/2015/02/13/blowing-away-myths-study-says-wind-energy-could-be-even-more-reliable-than-baseload-power/

develops a least-cost resource portfolio that complies with relevant environmental regulations, and did not give adequate consideration to alternatives to the NGCC.

Dominion is conducting its resource planning analyses in a world that existed a decade or more ago, but conditions in the electric sector are substantially changed since then. Instead of being limited to coal, natural gas, or nuclear resources, utilities now have a range of supply- and demand-side options available to them to meet peak and energy needs. Dominion need not build expensive new gas-fired generation, which will force ratepayers to bear the costs for the useful life of the plant—30 years or more. A portfolio approach to the alternatives analysis required of Dominion would likely have resulted in a resource mix that offered benefits to the grid while reducing costs to consumers. Dominion should have at least investigated such an approach.

It is therefore my recommendation that the SCC deny Dominion's petition for a CPCN for the Greensville NGCC project as well as the associated rate increase.

Q. Does this conclude your direct testimony?

A. Yes.

Exhibit RW-1
Résumé of Rachel S. Wilson

Rachel Wilson, Senior Associate

Synapse Energy Economics I 485 Massachusetts Avenue, Suite 2 I Cambridge, MA 02139 I 617-453-7044
rwilson@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Senior Associate*, 2013 – present, *Associate*, 2010 – June 2013, *Research Associate*, 2008 – 2010.

- Conducts research and writes testimony and reports on a wide range of issues relating to electric utilities, including: integrated resource planning; federal and state clean air policies; emissions from electricity generation; electric system dispatch; and environmental compliance technologies, strategies, and costs.
- Uses optimization and electricity dispatch models, including Strategist, PROMOD, PROSYM/Market Analytics, and PLEXOS to conduct analyses of utility service territories and regional energy markets.

Analysis Group, Inc., Boston, MA.

Associate, Energy Practice, 2007 – 2008.

- Supported an expert witness asked to opine on various topics in the electric industry as they applied to merchant generators and provided incentives for their behavior in the late 1990s and early 2000s.
- Analyzed data related to coal production on Indian land and contractual royalties paid to the tribe over a 25 year period to determine if discrepancies exist between these values for the purposes of potential litigation.
- Examined Canadian policies relating to carbon dioxide, and assisted with research on linkage of international tradable permit systems.
- Managed analysts' work processes and evaluated work products.

Senior Analyst Intern, Energy Practice, 2006 – 2007.

- Supported an expert witness in litigation involving whether a defendant power company could financially absorb a greater investment in pollution control under its debt structure while still offering competitive rates. Analyzed impacts of federal and state clean air laws on energy generators and providers. Built a quantitative model showing the costs of these clean air policies to the defendant over a 30 year period. Built a financial model calculating impacts of various pollution control investment requirements.
- Researched the economics of art; assisted in damage calculations in arbitration between an artist and his publisher.

Yale Center for Environmental Law and Policy, New Haven, CT. *Research Assistant*, 2005 – 2007.

- Gathered and managed data for the Environmental Performance Index, presented at the 2006 World Economic Forum. Interpreted statistical output, wrote critical analyses of results, and edited report drafts.
- Part of the team that produced *Green to Gold*, an award-winning book on corporate environmental management and strategy. Managed data, conducted research, and implemented marketing strategy.

Marsh Risk and Insurance Services, Inc., Los Angeles, CA. *Risk Analyst*, Casualty Department, 2003 – 2005.

- Evaluated Fortune 500 clients' risk management programs/requirements and formulated strategic plans and recommendations for customized risk solutions.
- Supported the placement of $2 million in insurance premiums in the first year and $3 million in the second year.
- Utilized quantitative models to create loss forecasts, cash flow analyses and benchmarking reports.
- Completed a year-long Graduate Training Program in risk management; ranked #1 in the western region of the US and shared #1 national ranking in a class of 200 young professionals.

EDUCATION

Yale School of Forestry & Environmental Studies, New Haven, CT
Masters of Environmental Management, concentration in Law, Economics, and Policy with a focus on energy issues and markets, 2007

Claremont McKenna College, Claremont, California
Bachelor of Arts in Environment, Economics, Politics (EEP), 2003. *Cum laude* and EEP departmental honors.

School for International Training, Quito, Ecuador
Semester abroad studying Comparative Ecology. Microfinance Intern – Viviendas del Hogar de Cristo in Guayaquil, Ecuador, Spring 2002.

ADDITIONAL SKILLS AND ACCOMPLISHMENTS

- Microsoft Office Suite, Lexis-Nexis, Platts Energy Database, Strategist, PROMOD, PROSYM/Market Analytics, and PLEXOS, some SAS and STATA.
- Competent in oral and written Spanish.

- Hold the Associate in Risk Management (ARM) professional designation.

PUBLICATIONS

Wilson, R., T. Comings, E. A. Stanton. 2015. *Analysis of the Tongue River Railroad Draft Environmental Impact Statement.* Synapse Energy Economics for Sierra Club and Earthjustice.

Wilson, R., M. Whited, S. Jackson, B. Biewald, E. A. Stanton. 2015. *Best Practices in Planning for Clean Power Plan Compliance.* Synapse Energy Economics for the National Association of State Utility Consumer Advocates.

Luckow, P., E. A. Stanton, S. Fields, B. Biewald, S. Jackson, J. Fisher, R. Wilson. 2015. *2015 Carbon Dioxide Price Forecast.* Synapse Energy Economics.

Stanton, E. A., P. Knight, J. Daniel, B. Fagan, D. Hurley, J. Kallay, E. Karaca, G. Keith, E. Malone, W. Ong, P. Peterson, L. Silvestrini, K. Takahashi, R. Wilson. 2015. *Massachusetts Low Gas Demand Analysis: Final Report.* Synapse Energy Economics for the Massachusetts Department of Energy Resources.

Fagan, B., R. Wilson, D. White, T. Woolf. 2014. *Filing to the Nova Scotia Utility and Review Board on Nova Scotia Power's October 15, 2014 Integrated Resource Plan: Key Planning Observations and Action Plan Elements.* Synapse Energy Economics for the Nova Scotia Utility and Review Board.

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Fagan, R., P. Luckow, D. White, R. Wilson. 2013. *The Net Benefits of Increased Wind Power in PJM.* Synapse Energy Economics for Energy Future Coalition.

Hornby, R., R. Wilson. 2013. *Evaluation of Merger Application filed by APCo and WPCo.* Synapse Energy Economics for West Virginia Consumer Advocate Division.

Johnston, L., R. Wilson. 2012. *Strategies for Decarbonizing Electric Power Supply.* Synapse Energy Economics for Regulatory Assistance Project, Global Power Best Practice Series, Paper #6.

Wilson, R., P. Luckow, B. Biewald, F. Ackerman, E. Hausman. 2012. *2012 Carbon Dioxide Price Forecast.* Synapse Energy Economics.

Hornby, R., R. Fagan, D. White, J. Rosenkranz, P. Knight, R. Wilson. 2012. *Potential Impacts of Replacing Retiring Coal Capacity in the Midwest Independent System Operator (MISO) Region with Natural Gas or Wind Capacity.* Synapse Energy Economics for Iowa Utilities Board.

Fagan, R., M. Chang, P. Knight, M. Schultz, T. Comings, E. Hausman, R. Wilson. 2012. *The Potential Rate Effects of Wind Energy and Transmission in the Midwest ISO Region*. Synapse Energy Economics for Energy Future Coalition.

Fisher, J., C. James, N. Hughes, D. White, R. Wilson, and B. Biewald. 2011. *Emissions Reductions from Renewable Energy and Energy Efficiency in California Air Quality Management Districts.* Synapse Energy Economics for California Energy Commission.

Wilson, R. 2011. *Comments Regarding MidAmerican Energy Company Filing on Coal-Fired Generation in Iowa*. Synapse Energy Economics for the Iowa Office of the Consumer Advocate.

Hausman, E., T. Comings, R. Wilson, and D. White. 2011. *Electricity Scenario Analysis for the Vermont Comprehensive Energy Plan 2011*. Synapse Energy Economics for Vermont Department of Public Service.

Hornby, R., P. Chernick, C. Swanson, D. White, J. Gifford, M. Chang, N. Hughes, M. Wittenstein, R. Wilson, B. Biewald. 2011. *Avoided Energy Supply Costs in New England: 2011 Report*. Synapse Energy Economics for Avoided-Energy-Supply-Component (AESC) Study Group.

Wilson, R., P. Peterson. 2011. *A Brief Survey of State Integrated Resource Planning Rules and Requirements*. Synapse Energy Economics for American Clean Skies Foundation.

Johnston, L., E. Hausman., B. Biewald, R. Wilson, D. White. 2011. *2011 Carbon Dioxide Price Forecast*. Synapse Energy Economics.

Fisher, J., R. Wilson, N. Hughes, M. Wittenstein, B. Biewald. 2011. *Benefits of Beyond BAU: Human, Social, and Environmental Damages Avoided Through the Retirement of the US Coal Fleet*. Synapse Energy Economics for Civil Society Institute.

Peterson, P., V. Sabodash, R. Wilson, D. Hurley. 2010. *Public Policy Impacts on Transmission Planning*. Synapse Energy Economics for Earthjustice.

Fisher, J., J. Levy, Y. Nishioka, P. Kirshen, R. Wilson, M. Chang, J. Kallay, C. James. 2010. *Co-Benefits of Energy Efficiency and Renewable Energy in Utah: Air Quality, Health and Water Benefits.* Synapse Energy Economics, Harvard School of Public Health, Tufts University for State of Utah Energy Office.

Wilson, R. 2009. "The Energy-Water Nexus: Interactions, Challenges, and Policy Solutions." Presentation at the National Drinking Water Symposium 2009, October 2009.

Fisher, J., C. James, L. Johnston, D. Schlissel, R. Wilson. 2009. *Energy Future: A Green Alternative for Michigan*. Synapse Energy Economics for Natural Resources Defense Council (NRDC) and Energy Foundation.

Schlissel, D., R. Wilson, L. Johnston, D. White. 2009. *An Assessment of Santee Cooper's 2008 Resource Planning*. Synapse Energy Economics for Rockefeller Family Fund.

Schlissel, D., A. Smith, R. Wilson. 2008. *Coal-Fired Power Plant Construction Costs*. Synapse Energy Economics.

TESTIMONY

Missouri Public Service Commission (Case No. ER-2014-0370): Direct and surrebuttal testimony evaluating the prudence of environmental retrofits at Kansas City Power & Light Company's La Cygne Generating Station. On behalf of Sierra Club. April 2, 2015 and June 5, 2015.

Oklahoma Corporation Commission (Cause No. PUD 201400229): Direct testimony evaluating the modeling of Oklahoma Gas & Electric supporting its request for approval and cost recovery of a Clean Air Act compliance plan and Mustang modernization, and presenting results of independent Gentrader modeling analysis. On behalf of Sierra Club. December 16, 2014.

Michigan Public Service Commission (Case No. U-17087): Direct testimony before the Commission discussing Strategist modeling relating to the application of Consumers Energy Company for the authority to increase its rates for the generation and distribution of electricity. On behalf of the Michigan Environmental Council and Natural Resources Defense Council. February 21, 2013.

Indiana Utility Regulatory Commission (Cause No. 44217): Direct testimony before the Commission discussing PROSYM/Market Analytics modeling relating to the application of Duke Energy Indiana for Certificates of Public Convenience and Necessity. On behalf of Citizens Action Coalition, Sierra Club, Save the Valley, and Valley Watch. November 29, 2012.

Kentucky Public Service Commission (Case No. 2012-00063): Direct testimony before the Commission discussing upcoming environmental regulations and electric system modeling relating to the application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity and for approval of its 2012 environmental compliance plan. On behalf of Sierra Club. July 23, 2012.

Kentucky Public Service Commission (Case No. 2011-00401): Direct testimony before the Commission discussing STRATEGIST modeling relating to the application of Kentucky Power Company for a Certificate of Public Convenience and Necessity, and for approval of its 2011 environmental compliance plan and amended environmental cost recovery surcharge. On behalf of Sierra Club. March 12, 2012.

Kentucky Public Service Commission (Case No. 2011-00161 and Case No. 2011-00162): Direct testimony before the Commission discussing STRATEGIST modeling relating to the applications of Kentucky Utilities Company, and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity, and approval of its 2011 compliance plan for recovery by environmental surcharge. On behalf of Sierra Club and Natural Resources Defense Council (NRDC). September 16, 2011.

Minnesota Public Utilities Commission (OAH Docket No. 8-2500-22094-2 and MPUC Docket No. E-017/M-10-1082): Rebuttal testimony before the Commission describing STRATEGIST modeling performed in the docket considering Otter Tail Power's application for an Advanced Determination of Prudence for BART retrofits at its Big Stone plant**.** On behalf of Izaak Walton League of America, Fresh Energy, Sierra Club, and Minnesota Center for Environmental Advocacy. September 7, 2011.

Resume dated October 2015

Exhibit RW-2
VEPCO Updated Winter Peak Forecast

VEPCO Winter NCP Forecast

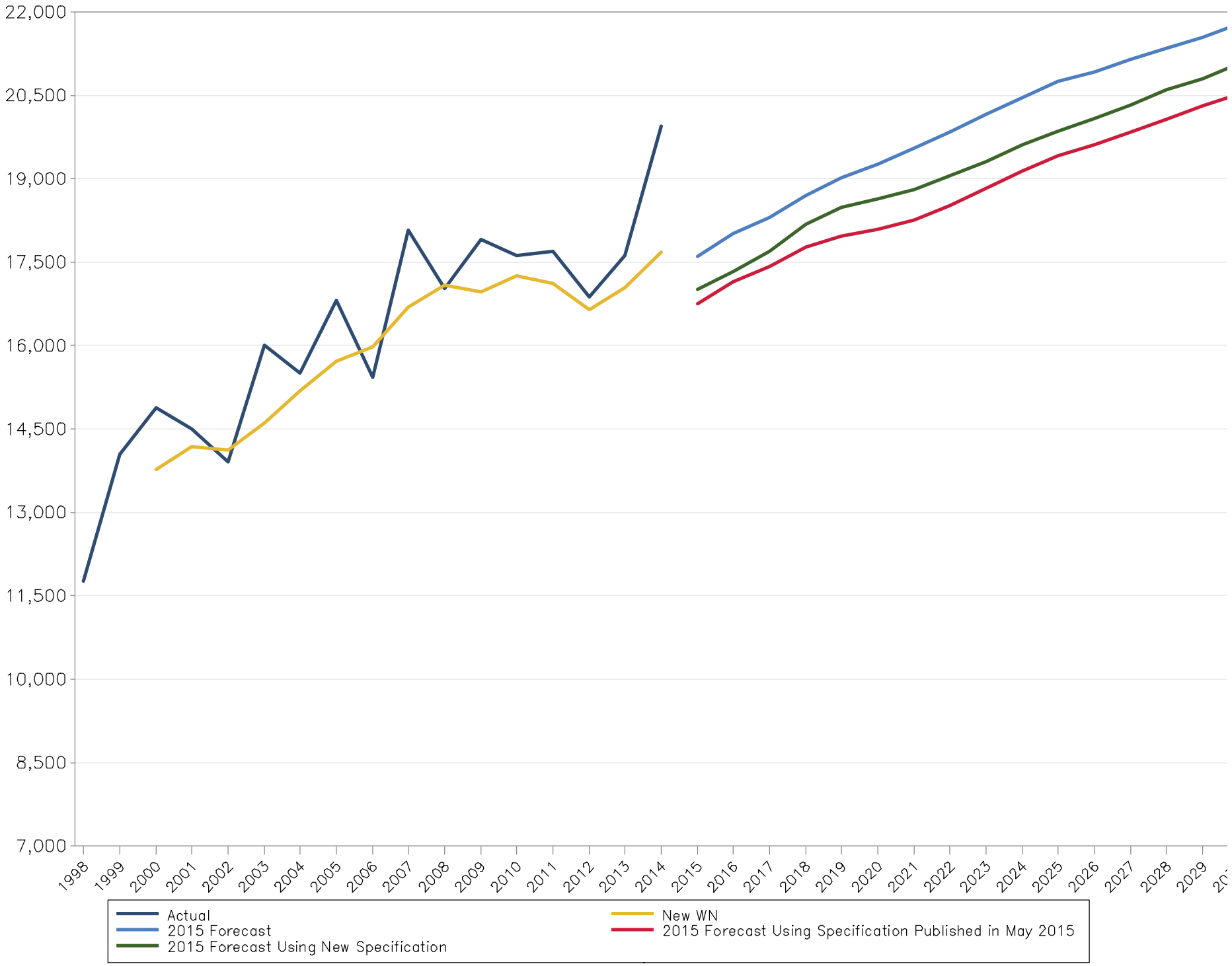

Exhibit RW-3
VEPCO Updated Summer Peak Forecast

VEPCO Summer NCP Forecast

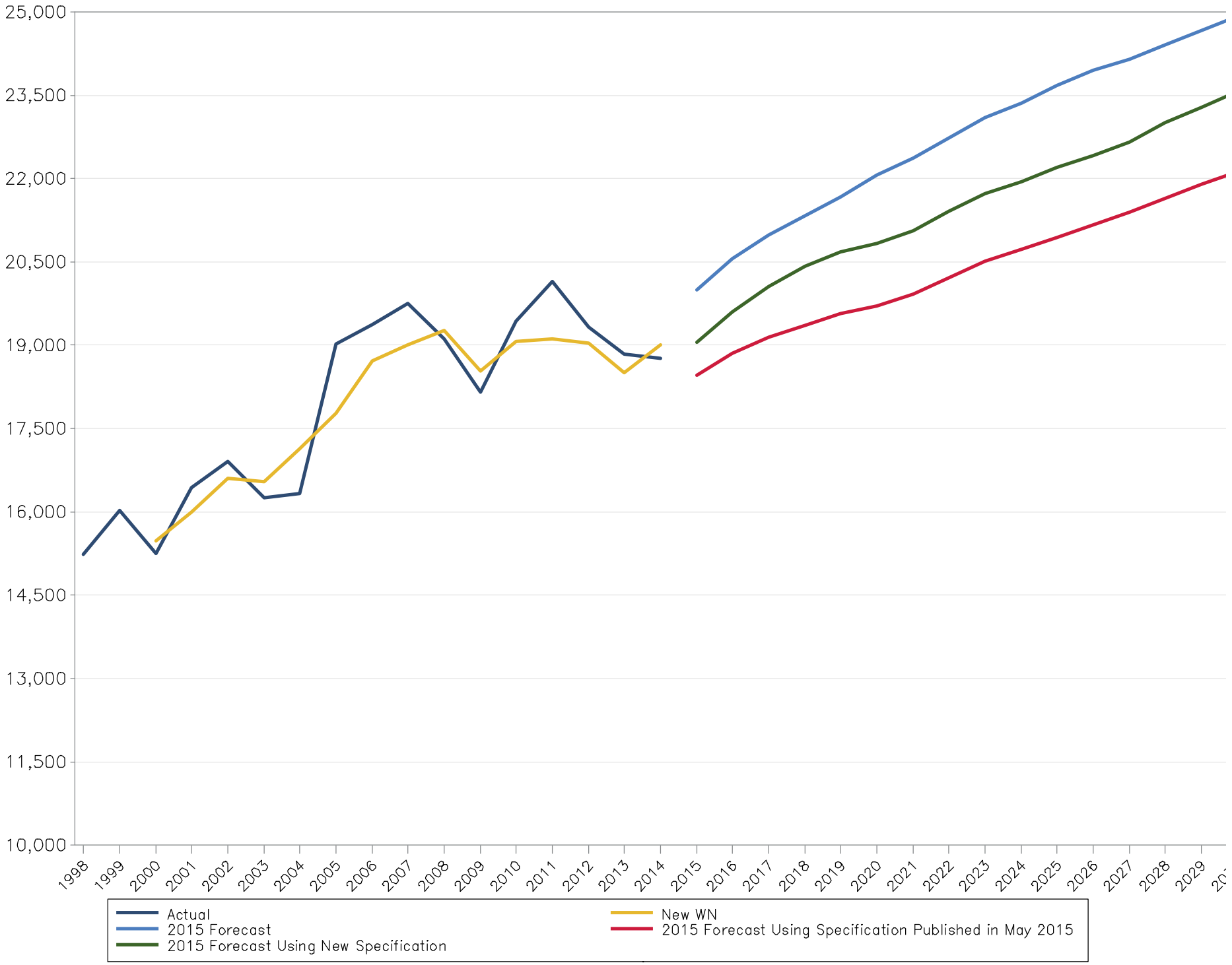

Exhibit RW-4
Public Service Company of Colorado, 2013 All Source Solicitation, 120 Day Report, Executive Summary

Xcel Energy®
RESPONSIBLE BY NATURE®

Public Service Company of Colorado

2013 All Source Solicitation 120 Day Report
2011 Electric Resource Plan

(CPUC Docket No. 11A-869E)

September 9, 2013

HIGHLY CONFIDENTIAL

Highly Confidential Bidder Information from the 2013 All-Source RFP Solicitation: pages 7-15, 20-25, 27-33, 35-37, 42-54, 56, 58-63, 65-70, 72, 77-78, 81, 96-97, 102, 105-118, 121-133

Pursuant to Commission Decision No. C14-1090, Public Service now files this public version of this

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Executive Summary

This report summarizes the results of Public Service Company of Colorado's 2013 All-Source Solicitation which was issued in order to meet a 2018 electricity supply need of approximately 250 MW. The Commission also directed the Company to consider the retirement of two coal-fired power plants scheduled to permanently fuel switch to natural gas. When those retirements are considered the resource need is as high as 717 MW.

The solicitation was successful in attracting low-cost bids from wind and solar photovoltaic generation resources and from new and existing gas-fired generation. In fact, the bid pricing received represents a watershed event for Colorado. For the first time, the Company received bids for utility-scale solar PV resources that are cost-effective head to head with natural-gas-fired generation under base-gas price forecasts and no carbon emission cost adders. The gas-fired bids were not only low cost themselves, but also offered operational flexibility which helps system operators integrate intermittent generation from wind and solar onto the grid. The Company attributes the success of this Solicitation to:

- Those Phase I Commission decisions which;
  - created competition between existing gas-fired generators,
  - denied carve outs or set asides for specific generation technologies,
  - adopted an accelerated process for the receipt and evaluation of wind bids that allowed developers to capture and pass to customers the value of federal production tax credits,
- Company self-build proposals offering brown field generation expansion and the evaluation of generation retirement options which effectively set the stage for strong competition between natural gas generators, and
- The convergence of historically low photovoltaic panels costs, the 30% federal investment tax credit, and developers' ability to finance large-scale photovoltaic power plants both in and out of the San Luis Valley.

After a thorough analysis of bids pursuant to the Commission's resource planning rules and its Phase I Decision, the Company has selected a preferred portfolio that includes a total of 809 MW of firm generation comprised of:

- Short and long-term power purchase agreements for 317 MW from existing gas-fired generation (276 MW of which is flexible generation meeting the 30-minute Reserve Guideline),
- 450 MW of new wind generation resources, 100 MW less than sought previously,
- 170 MW of new solar photovoltaic resources (70% outside of the San Luis Valley),
- Retirement of the Arapahoe 4 coal-fired generator at the end of 2013;and
- Continued operation of the Company's 352 MW, Cherokee 4 generation unit on natural-gas beyond 2017.

Note that the only new construction included in this preferred portfolio is for renewable generation – all of the proposed gas-fired generation is from existing generating resources.

Aside from being a low cost combination of existing gas generation and new wind and utility scale solar PV facilities, the preferred portfolio brings added customer value through:

- Added geographic diversity within both the Company's solar photovoltaic and wind resources,
- Added generation capacity above the 717 MW need of this resource plan that can serve a portion of our projected 2019 capacity need at favorable pricing in relation to historic PPA costs,
- Increased fuel diversity within the Company's generation portfolio and decreased sensitivity to the potential of higher natural gas pricing over the next 20-25 years,
- Continued reductions in emissions of carbon dioxide.

Although the Company's preferred portfolio does not include any of the bids under consideration as Section 123 resources, the Company recognizes the Commission's obligation to fully consider the cost-effective implementation of new and clean technologies. It is our belief however that the bids under consideration as Section 123 resources in this Solicitation should not be deemed as "cost-effective" options for customers. Between the size, the operating characteristics, and the prices bid for the Section 123 resources, the costs to customers of substituting any of these resources into the preferred portfolio would be multiples higher than using bids from more traditional technologies.

We remind the Commission that we do have one Section 123 resource on-line today – a 30 MW concentrating solar PV project in the San Luis Valley. We have also proposed a competitive solicitation for a small biomass project. The Company is open to working with the Commission to explore alternative processes for considering the cost-effective implementation of Section 123 resources that are not directly tied to the larger All-Source solicitation processes that take place as part of the four year electric resource planning cycle.

With this 120-Day Solicitation Report, the Company is seeking a Commission decision that:

- Approves the acquisition of the 450 MW of new wind generation resources in the preferred portfolio on the accelerated schedule established in Commission Decision No. C13-0328; that is, approval on or about October 9, 2013, and
- Approves the acquisition of the 170 MW of new solar photovoltaic resources, 317 MW of existing gas-fired resources, the retirement of Arapahoe 4 at the end of 2013, and continued operation of the 352 MW of Cherokee 4 beyond 2017 as a gas-fired unit in the preferred portfolio on the schedule established in the Commission's Phase I docket.

With the Commission's approval in this docket to retire Arapahoe 4, the Company intends to file, in early 2014, an application to decommission and dismantle Arapahoe Station including Arapahoe Units 1 through 3.

CERTIFICATE OF SERVICE

I hereby certify that the following have been served with a true and accurate copy of the foregoing via first-class mail, postage pre-paid:

Lisa S. Booth
Charlotte P. McAfee
Dominion Resources Services
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Cale Jaffe, Southern Environmental Law Center

DATED: November 5, 2015