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STATE CORPORATION COMMISSION
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Case No. PUR-2024-00134
Sponsor: ("APCO")
Exhibit No. 15

Witness: DAVID S. DIEBEL
Bailiff: JABARI T. ROBINSON

APCo Exhibit No. ____
Witness: DSD

REBUTTAL TESTIMONY OF
DAVID S. DIEBEL
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA S.C.C. CASE NO. PUR-2024-00134

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APCo Exhibit No. ____
Witness: DSD

SUMMARY OF REBUTTAL TESTIMONY OF DAVID S. DIEBEL

My rebuttal testimony:

- Describes the Virginia Clean Economy Act definition of total annual energy savings, distinguishing it from first-year savings;
- Discusses issues related to potential annual energy savings targets provided by Staff witness Collier, including the role and limitations of self-reported savings from Opt-Out Large General Service ("LGS") customers; and
- Discusses how the transition to a single National Standard Practice Manual ("NSPM")-based cost-effectiveness test may alter program evaluations and potentially change which programs are determined to be cost-effective under the new criteria.

APCo Exhibit No. ____
Witness: DSD

REBUTTAL TESTIMONY OF
DAVID S. DIEBEL
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA S.C.C. CASE NO. PUR-2024-00134

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

A. My name is David S. Diebel. I am a Principal at ADM Associates, Inc. (ADM). My business address is 3239 Ramos Circle, Sacramento, California 95827.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a B.A in Economics from the California State University, Sacramento in 2004 and a M.A. in Economics from the California State University, Sacramento in 2006. I am a Principal at ADM. In that capacity, I am responsible for directing the work of ADM's staff for various evaluation and consulting projects. I joined ADM Associates in 2007 as an Associate. My initial responsibilities included data analysis related to lighting technology evaluations. Since then, my role has shifted to program and portfolio evaluation.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of Appalachian Power Company ("APCo" or "Company").

Q. WOULD YOU PLEASE DESCRIBE ADM?

A. ADM is a professional services corporation providing energy efficiency program evaluation and research for utilities and other clients across North America. Founded in 1979, ADM's headquarters are located in Sacramento, with offices in Reno and Portland, Oregon. ADM has evaluated the Company's 2015-2023 programs and will be evaluating the Company's 2024 programs.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THIS COMMISSION?

A. Yes. I have testified before the Virginia State Corporation Commission ("Commission") in Case No. PUR-2020-00251, Case No. PUR-2021-00236, and Case No. PUR-2023-00169.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. My testimony addresses issues related to the Company's Petition to establish energy efficiency savings targets pursuant to Virginia Code § 56-596.2.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My rebuttal testimony includes:

- A description of the Virginia Clean Economy Act ("VCEA") definition of total annual energy savings, distinguishing it from first-year savings;
- A discussion of issues related to potential annual energy savings targets provided by Staff witness Collier, including the role and limitations of self-reported savings from Opt-Out Large General Service ("LGS") customers; and
- A discussion of how the transition to a single National Standard Practice Manual ("NSPM ")-based cost-effectiveness test may alter program evaluations and potentially change which programs are determined to be cost-effective under the new criteria.

I. DISCUSSION OF KEY CONCEPTS

Q. HOW DOES VCEA DEFINE TOTAL ANNUAL ENERGY SAVINGS?

A. The VCEA defines "total annual energy savings," in relevant part, as "the total combined kilowatt-hour savings achieved by electric utility energy efficiency and demand response programs and measures installed in that program year, as well as savings still being achieved by measures and programs implemented in prior years[.]" Code of Virginia

("Code") § 56-576. This means that energy savings from measures implemented in previous years, as long as those measures have not yet reached their end of life, are included in the calculation of total annual energy savings for the given year.

Q. HOW DO TOTAL ANNUAL ENERGY SAVINGS FROM PREVIOUSLY IMPLEMENTED MEASURES "EXPIRE"?

A. Cumulative savings from energy efficiency measures "expire" as those measures reach the end of their useful life. Once a measure reaches its estimated lifespan, it no longer contributes to the Company's total annual energy savings. This expiration of savings means that the Company must not only generate new savings from current and future programs but also compensate for the loss of savings from measures that have expired, in order to increase total annual energy savings.

Q. HOW DO "TOTAL ANNUAL ENERGY SAVINGS" DIFFER FROM ANNUALIZED FIRST-YEAR ENERGY SAVINGS PRESENTED IN THE COMPANY'S EM&V REPORTING?

A. First-year energy savings presented in the Company's EM&V reporting are the energy savings achieved by energy efficiency measures during the first year following their implementation during an applicable program year, expressed on an annual basis. It includes only the savings generated by newly implemented measures within a given year, without accounting for the ongoing savings from measures implemented in prior years. In contrast, "total annual energy savings" as defined by the VCEA includes both the energy savings from new measures implemented in the current year and the continued energy savings from measures implemented in previous years.

II. <u>CONTEXTUAL CONSIDERATIONS RELATED TO POTENTIAL TOTAL ANNUAL ENERGY SAVINGS TARGETS</u>

Q. WHAT ALTERNATIVE TOTAL ANNUAL ENERGY SAVINGS TARGET OPTIONS FOR 2026-2028 DOES STAFF WITNESS COLLIER PRESENT?

A. Beginning on page 27 of his testimony, Staff witness Collier presents six alternative scenarios for total annual energy savings targets, which combine two different starting points (2.0% and 2.87%) with three different annual incremental increases (0.25%, 0.5%, and 0.8974%). These alternatives suggest higher energy savings targets for the Company's energy efficiency programs than proposed by the Company, with the highest scenario aiming for a 5.56% savings target by 2028. Additionally, he presents options that use 1.6% (the Company's proposed target) and 2.435% (a midpoint between 2.0% and 2.87% starting points) as baselines for incremental increases.

Q. WHY DOES STAFF WITNESS COLLIER PROVIDE AN OPTION USING AN ANNUAL INCREMENTAL INCREASE OF 0.8974% ("INCREMENTAL INCREASE C") AS PART OF HIS ALTERNATIVE SCENARIOS?

A. The 0.8974% annual incremental increase referenced by Staff witness Collier is based on the increase in the Company's reported total annual energy savings between calendar years 2022 and 2023. This increase includes aggregated reported energy savings, with a substantial contribution from the Company's Opt-Out LGS customers, who are not participants in the Company's energy efficiency programs but independently report their energy savings. It is important to note that, for Opt-Out LGS customers, the reported energy savings in a given year are considered both as first-year and total annual energy savings, since the savings are reported annually without further breakdown.

Q. WHAT WAS THE MAIN FACTOR CONTRIBUTING TO THE 0.8974% ANNUAL INCREMENTAL INCREASE IN THE COMPANY'S REPORTED TOTAL ANNUAL ENERGY SAVINGS BETWEEN CALENDAR YEARS 2022 AND 2023?

A. Seventy-eight percent of the 0.8974% increase in total annual energy savings between 2022 and 2023 is due to energy savings reported by the Opt-Out LGS customers. If this contribution is excluded, leaving only the energy savings subject to the Company's Evaluation, Measurement, and Verification ("EM&V") efforts, the increase in total annual energy savings between 2022 and 2023 was 0.20%.

Q. DID STAFF WITNESS COLLIER RAISE SPECIFIC CONCERNS RELATED TO OPT-OUT LGS CUSTOMERS?

A. Yes. Staff witness Collier expressed concerns about the Company's ability to verify the accuracy of LGS Opt-Out customer energy savings and the potential for underestimating future savings. He also suggested that the Company should engage in efforts to better understand the persistence of these savings, raised concerns about potential understatements in future projections, and recommended that the Company make additional efforts to forecast LGS Opt-Out customer savings.

Q. IN LIGHT OF STAFF WITNESS COLLIER'S CONCERNS ABOUT THE ACCURACY AND PERSISTENCE OF LGS OPT-OUT CUSTOMER ENERGY

SAVINGS, PLEASE EXPLAIN WHETHER THE COMPANY CAN VALIDATE THE ENERGY SAVINGS REPORTED BY THESE CUSTOMERS.

A. No, the Company is not authorized to verify the accuracy of energy savings reported by LGS Opt-Out customers. Under the opt-out provisions, LGS customers who choose to opt out are not subject to the same EM&V requirements as participants in the Company's energy efficiency programs. These customers are responsible for self-reporting their savings, and the Company's role, as stipulated by Commission rules, is limited to aggregating and reporting the values provided by these customers. There is no requirement compelling LGS Opt-Out customers to provide data that would enable the Company to perform any verification or validation of the accuracy of their reported energy savings. Accordingly, validation of LGS Opt-Out customer savings is not part of the Company's EM&V efforts.

Q. CAN THE COMPANY PERFORM FORECASTING EFFORTS TO BETTER UNDERSTAND THE PERSISTENCE OF LGS OPT-OUT CUSTOMER ENERGY SAVINGS, AS RECOMMENDED BY STAFF WITNESS COLLIER?

A. Forecasting efforts for LGS Opt-Out customer energy savings are constrained by the nature of the available data. LGS Opt-Out customers submit annual certification forms, which include their reported energy savings and may enable them to newly opt out or continue opting out of the Company's energy efficiency programs. While the Company collects these annual savings values, the variability in participation each year means there is no consistent basis to accurately project future savings trends. Additionally, because Opt-Out LGS customers are not subject to EM&V protocols, the Company lacks the ability to assess the persistence of reported savings over time. The Company's role is limited to reporting the energy savings as provided by these customers, in compliance with the regulatory requirements.

Q. HOW DOES THE COMPANY INCORPORATE SELF-REPORTED SAVINGS FROM LGS OPT-OUT CUSTOMERS INTO ITS EM&V REPORTING?

A. The Company presents the aggregate annual self-reported savings from LGS Opt-Out customers directly in its EM&V reporting. Since these customers are not subject to the same EM&V requirements as participants in the Company's programs, the reported values are used as provided without independent validation. This can result in variability in aggregate Company-reported first-year energy savings and total annual energy savings, particularly if significant changes occur in the reported energy savings from LGS Opt-Out customers from year to year. These variations can affect the overall trends in energy savings, but assessing the causes of fluctuations is not within the purview of EM&V to the extent that they are associated with LGS Opt-Out customers.

Q. ASIDE FROM SELF-REPORTED SAVINGS FROM LGS OPT-OUT CUSTOMERS, WHAT CONTRIBUTED TO RECENT INCREASES IN COMPANY TOTAL ANNUAL ENERGY SAVINGS?

A. Increases in total annual energy savings have been driven by significant programmatic expansions. These included the launch of the behavioral Home Energy Reports program, the introduction of a Custom Commercial & Industrial pilot program, and a Voltage Optimization pilot program. These initiatives expanded the Company's portfolio and provided new channels for achieving energy savings.

Q. WHAT ARE THE TWO STARTING POINTS PROPOSED BY STAFF WITNESS COLLIER FOR ESTABLISHING ENERGY EFFICIENCY SAVINGS TARGETS?

A. Staff witness Collier presents two starting points for setting energy efficiency savings targets:

- Starting Point 1: 2.0%, representing the current statutory target for 2025 as mandated by the VCEA.
- Starting Point 2: 2.87%, representing the projected net savings the Company anticipates achieving by 2025, based on data provided by the Company in response to a Staff inquiry.

Q. HOW DOES EM&V DATA SUPPORT UNDERSTANDING OF THE COMPANY'S PROJECTED ENERGY SAVINGS, SUCH AS THOSE RELATED TO STARTING POINT 2?

A. EM&V data plays a role in validating the performance of implemented energy efficiency programs and measures. Starting Point 2, which is premised on a projection of 2.87% net total annual energy savings in 2025, is based on program plans and the anticipated results of those efforts. EM&V findings help assess whether the implemented measures align with expected performance, but the projections themselves reflect planning assumptions that go beyond the current EM&V verified savings levels.

III. <u>POTENTIAL IMPLICATIONS OF CHANGE TO NEW COST EFFECTIVENESS EVALUATION FRAMEWORK</u>

Q. HOW DOES THE ANTICIPATED TRANSITION TO A NEW COST-EFFECTIVENESS FRAMEWORK IMPACT THE EVALUATION OF ENERGY EFFICIENCY PROGRAMS FOR 2026-2028?

A. The transition to a single cost-effectiveness test, as mandated by Enactment Clause 2 of Chapter 794 of the 2024 Virginia Acts of Assembly, will change how energy efficiency programs will be assessed. This new approach, based on the NSPM, will incorporate a broader range of benefits and costs, including considerations tied to policy goals and the evaluation of Distributed Energy Resources ("DERs"). This shift will result in programs that are currently considered cost-effective under the existing "three out of four" cost effectiveness evaluation framework facing new evaluation criteria.

It is not yet clear how the new NSPM-based criteria will align with the current evaluation methods. Once the new approach is finalized, EM&V can provide data on program performance and help assess how the shift to the new framework impacts the evaluated cost-effectiveness of these programs.

Q. COULD THE TRANSITION TO THE NEW COST-EFFECTIVENESS TEST IMPACT PROGRAM PLANNING?

A. Yes. The transition to the NSPM-based cost-effectiveness framework is expected to modify the criteria used to evaluate cost-effectiveness. Depending on how the new test incorporates various benefits and costs, the determination of which programs and measures qualify as cost-effective could change. As a result, some programs that are currently considered cost-effective under the existing "three out of four" framework might be evaluated differently under the NSPM criteria, with some potentially no longer meeting cost-effectiveness thresholds and others potentially newly qualifying.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on this 21st day of October 2024, a true copy of the foregoing Rebuttal Testimony of Appalachian Power Company was emailed to the following:

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