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**Virginia State Corporation Commission
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Case Name (if known)	Application of Columbia Gas of Virginia, Inc., For approval to amend and extend its SAVE Plan and to implement a 2024 SAVE Rider
Document Type	APLA
Document Description Summary	For approval to amend and extend its SAVE Plan pursuant to Virginia Code § 56-604 and for approval to implement a 2024 SAVE Rider in accordance with Section 20 of its General Terms and Conditions
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Columbia Gas[®] of Virginia

A NiSource Company

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T. Borden Ellis
Assistant General Counsel

August 15, 2023

VIA ELECTRONIC FILING

Hon. Bernard Logan, Clerk
State Corporation Commission
c/o Document Control Center
Tyler Building, First Floor
1300 East Main Street
Richmond, Virginia 23219

Re: Application of Columbia Gas of Virginia, Inc., For approval to amend and extend its SAVE Plan pursuant to Virginia Code § 56-604 and for approval to implement a 2024 SAVE Rider in accordance with Section 20 of its General Terms and Conditions, Case No. PUR-2023-00119

Dear Mr. Logan:

Enclosed please find Columbia Gas of Virginia, Inc.'s Application for approval to amend and extend its SAVE Plan and to implement a 2024 SAVE Plan Rider in accordance with Section 20 of its General Terms and Conditions.

Thank you for your attention to this matter.

Sincerely,



TBE/kam
Enclosure

cc: David Essah
Kimberly B. Pate
William H. Chambliss, Esq.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF)
)
COLUMBIA GAS OF VIRGINIA, INC.)
)
For approval to amend and extend its)
SAVE Plan pursuant to Virginia Code § 56-604)
) Case No. PUR-2023-00119
and)
)
For approval to implement a 2024 SAVE Rider)
in accordance with Section 20 of its)
General Terms and Conditions)

APPLICATION

Columbia Gas of Virginia, Inc. ("CVA" or the "Company") hereby files this Application with the State Corporation Commission ("Commission") for (1) approval to amend and extend its Steps to Advance Virginia's Energy ("SAVE") Plan pursuant to Chapter 26 of Title 56 of the Code of Virginia¹ (the "SAVE Act"); and (2) for approval to implement a SAVE Rider² for calendar year 2024, inclusive of costs associated with the Company's Advanced Leak Detection and Repair Program ("Advanced LDAR Program").

The Company requests to extend its SAVE Plan for three years (calendar years 2024 through 2026) ("Phase 5 SAVE Plan"). Under Phase 5 of the SAVE Plan, the Company requests authorization to spend up to \$69 million in 2024, \$67 million in 2025, and \$73 million in 2026 for a total of \$209 million. The Company requests authorization to exceed this investment by up to 10% on an annual basis and 10% on a cumulative basis, for a Phase 5 maximum spend of \$229.9 million (consisting of construction work in progress and cost of removal). The Company also

¹ Va. Code § 56-603 *et seq.*

² The SAVE Rider and its components were approved by the Commission in CVA's original SAVE Plan, *See Application of Columbia Gas of Virginia, Inc. For approval of a SAVE Plan and rider as provided by Virginia Code § 56-604*, Case No. PUE-2011-00049, Order Approving SAVE Plan and Rider (Nov. 28, 2011).

requests authorization to include costs associated with its Advanced LDAR Program in its Phase 5 SAVE Plan. The SAVE Rider rate calculations for 2024 proposed in this case are based on a \$69 million projected SAVE eligible capital program for 2024; deferred 2022 and projected 2024 costs associated with the Company's Advanced LDAR Program; and the true-up of the recovery of the actual SAVE cost of service for the calendar year 2022. This rate would be effective the first billing unit of January 2024 through the last billing unit of December 2024.

In support of its Application, the Company states as follows:

1. The name, address, and telephone number of CVA's counsel are:

T. Borden Ellis, Assistant General Counsel
NiSource Corporate Services Company
1809 Coyote Drive
Chester, Virginia 23836
(804) 768-6475

2. CVA is a public service corporation organized and existing under the laws of the Commonwealth of Virginia. It also is a natural gas local distribution company providing natural gas service to over 290,000 residential, commercial, and industrial customers in Central and Southern Virginia, the Piedmont region, most of the Shenandoah Valley, as well as portions of Northern and Western Virginia and the Hampton Roads region. The gas distribution services and operations of the Company are regulated by the Commission.

I. Overview of CVA's SAVE Plan

3. CVA's SAVE Plan is a program designed to accelerate the replacement of certain components of its gas distribution system infrastructure in order to enhance system safety and reliability. Consistent with the SAVE Act, the Commission authorized the Company to implement its initial SAVE Plan in 2012,³ which was amended in 2013.⁴ The Company's SAVE Plan was then

³ *Id.*

⁴ *Application of Columbia Gas of Virginia, Inc. For authority to amend its SAVE Plan pursuant to § 56-604 of the Code of Virginia, Case No. PUE-2013-00015, Order Approving Amended SAVE Plan (July 3, 2013).*

amended and extended in Case No. PUE-2015-00071⁵ for the five-year period 2016-2020 ("Phase 2 SAVE Plan."). The Phase 2 SAVE Plan was subsequently amended in 2017 (to increase the five year total expenditure cap from \$150 million to \$173.8 million)⁶ and in 2019 (to increase 2020 expenditures from \$30 million to \$50 million and to increase the total five-year authorized expenditures from \$173.8 million to \$193.8 million).⁷ In 2020, the Company amended and extended the SAVE Plan for one additional year in Case No. PUR-2020-00138 ("Phase 3").⁸ In 2021, the Company was authorized to amend and extend its SAVE Plan for two years in Case No. PUR-2021-00145⁹ ("Phase 4"). Under the Phase 4 SAVE Plan, the Company was authorized to invest \$63.0 million of SAVE eligible capital expenditures in 2022 and up to \$72 million in 2023, with an authorized 10% annual spending variance and a 10% cumulative spending variance, for a maximum spend of up to \$148.5 million (consisting of construction work in progress and cost of removal).

4. The eligible infrastructure projects undertaken pursuant to the current Phase 4 SAVE Plan enhance safety and reliability by reducing system integrity risks associated with

⁵ *Application of Columbia Gas of Virginia, Inc. For approval to amend a SAVE Plan pursuant to § 56-604 of the Code of Virginia, and For approval to implement a 2016 SAVE Plan Infrastructure Reliability and Replacement Adjustment in accordance with Section 20 of its General Terms and Conditions*, PUE-2015-00072, Order Approving Amended SAVE Plan (Oct. 23, 2015). Phase 2 of CVA's SAVE Plan provided for the accelerated replacement of specified types of pipe materials and system components that have demonstrated an increased incidence of leakage or failure. The types of pipe materials and system components eligible for recovery under Phase 2 of the SAVE Plan are bare steel mains, cast iron mains, pre-1971 coated steel mains and services, first generation plastic pipe, isolated bare steel services, certain risers that are prone to failure, and measurement and regulation stations ("M&R Stations").

⁶ *Application of Columbia Gas of Virginia, Inc., For approval to implement a 2017 SAVE Plan Infrastructure Reliability and Replacement Adjustment in accordance with Section 20 of its General Terms and Conditions*, PUE-2016-00087, Order Approving SAVE Rider for Calendar Year 2017 (Dec. 20, 2016).

⁷ *Application of Columbia Gas of Virginia, Inc., For approval to implement a 2019 SAVE Plan Infrastructure Reliability and Replacement Adjustment in accordance with Section 20 of its General Terms and Conditions*, Order Approving 2019 SAVE Rider (October 26, 2019).

⁸ *Application of Columbia Gas of Virginia, Inc., For approval to amend and extend its SAVE Plan pursuant to VA Code § 56-604, and For approval to implement a 2021 SAVE Plan Rider in accordance with Section 20 of its General Terms and Conditions*, Order Approving Amended SAVE Plan (Nov. 18, 2020).

⁹ *Application of Columbia Gas of Virginia, Inc., For approval to amend and extend its SAVE Plan pursuant to VA Code § 56-604, and For approval to implement a 2022 SAVE Plan Rider in accordance with Section 20 of its General Terms and Conditions*, Order Approving SAVE Rider (Dec. 6, 2021).

customer outages, corrosion, equipment failures, material failures, or natural forces, and have the potential to reduce greenhouse gas emissions ("GHGs").

5. The costs incurred in replacing eligible natural gas infrastructure are recovered through a SAVE Rider comprised of two components: a Projected Factor and a True-Up Factor.¹⁰ The SAVE Rider is billed as a fixed charge each month and is designed to recover "eligible infrastructure replacement costs" as that term is defined in § 56-603 of the Code of Virginia. The SAVE Rider recovers SAVE eligible infrastructure replacement costs in a manner that is separate from customer rates established in the Company's most recent base rates case,¹¹ and avoids any undue cross-subsidization among rate classes.

II. Proposed Phase 5 SAVE Plan

6. The Company proposes to amend and extend its SAVE Plan for an additional three-year term. CVA's SAVE Plan has been successful in accelerating the replacement of natural gas infrastructure that evidences a higher rate of leakage or failure, thus enhancing system integrity, safety, and reliability. The proposed Phase 5 SAVE Plan will continue the progress made under the SAVE Plan by undertaking additional identified projects the Company expects to complete in 2024-2026 that will enhance safety and reliability and will have a positive impact on the environment. Further, incorporating the Advanced LDAR Program into the SAVE Plan in accordance with the Virginia Energy Innovation Act will support the Company's efforts to find and address leaks on its system which, in turn, will enhance the safety and reliability of CVA's system and reduce greenhouse gas emissions.

7. As discussed in the pre-filed testimony of Company witness Brian Roberts, CVA's projected spend includes \$69 million in 2024, \$67 million in 2025, and \$73 million in 2026. In

¹⁰ See footnote 2, *supra*. The SAVE Rider is applicable to Rate Schedules RS, RTS, MPS, PDS, SGS1, SGS2, SGS3, SGTS1, SGTS2, SGTS3, LGS1/LGS2, TS1/TS2, and EDS.

¹¹ *Application of Columbia Gas of Virginia, Inc., For authority to increase rates and charges and to revise the terms and conditions applicable to gas service*, Case No. PUR-2022-00036, Final Order (May 15, 2023).

total, the Company would be authorized to spend up to \$209 million on SAVE eligible infrastructure projects in Phase 5 with the ability to exceed this investment by 10% on an annual basis and 10% on a cumulative basis, for a Phase 5 maximum spend of \$229.9 million (consisting of construction work in progress and cost of removal).

8. Under Phase 5 of its SAVE Plan the Company plans to undertake the following projects that will replace SAVE eligible infrastructure and enhance the integrity and reliability of its distribution system:

- VAM-1 – VAM-1 is a 6" high-pressure bare steel pipeline constructed in the 1940s. The pipeline runs through mountainous terrain in the Company's Lexington and Lynchburg operating areas. The Company is in the process of replacing VAM-1 and plans to complete portions of the replacement project in 2026. Phase 8, in 2026, is estimated to cost approximately \$8.8 million. Phase 1, in 2026, is estimated to cost approximately \$14.1 million. Permitting and land acquisition costs of approximately \$1.2 million will be incurred in 2025 and are related to both phases.
- DVA-6 – DVA-6 is a 1950s 8" high pressure coated steel pipeline that runs through densely populated areas of Northern Virginia and serves that region of CVA's operating area. The Company is in the process of replacing the DVA-6 pipeline and plans to complete Phase 4 in 2024 and Phase 5 in 2026. The approximate cost of these phases is expected to be \$28.2 million.
- The Company will continue to replace blanket mains and services in order to eliminate bare steel, pre-1971 coated steel, and first-generation plastic pipelines from its system. The Company will also continue to replace SAVE eligible risers. CVA plans to spend approximately \$42.2 million on these efforts during 2024.
- Reston/Stuart Road POD – This POD serves approximately 16,500 customers around Herndon, Reston, Floris, and other parts of Fairfax County. The total anticipated investment for this project is approximately \$5.5 million.
- Ecoff POD – This POD serves approximately 17,900 customers in

the Chester, Chesterfield, and Colonial Heights market. The total anticipated investment for this project is approximately \$3.7 million.

- Petersburg POD – This POD serves approximately 11,150 customers in the Petersburg and Hopewell market. The total anticipated investment for this project is approximately \$3.7 million.
- Portsmouth / Lambert Trail POD – This POD serves approximately 39,950 customers in the Portsmouth, Suffolk, and Chesapeake market. The total anticipated investment for this project is approximately \$2.7 million.
- Stanardsville POD – This POD serves approximately 185 customers within the Town of Stanardsville and Greene County. The total anticipated investment for this project is approximately \$4.0 million.
- Warrenton POD – This POD serves approximately 3,700 customers within the Town of Warrenton and Fauquier County. The total investment for this project is approximately \$3.7 million.

9. Section 56-604 of the Code of Virginia (“Code”) provides that a natural gas utility’s SAVE Plan may include an enhanced leak detection and repair program. Section 56-603 of the Code defines an “Enhanced leak detection and repair program” as “a program that is designed to allow a natural gas utility to deploy advanced leak detection technologies to more accurately identify active leaks as part of the natural gas utility’s leak management program and to prioritize the repair of leaks that present a risk to safety or the environment.” Further, “[a] natural gas utility may amend its SAVE plan to include an enhanced leak detection and repair program by filing an application to amend its previously approved SAVE plan....” As such, and as discussed in the pre-filed testimony of Company witness Dan Rowe, the Company is proposing to include costs associated with its Advanced LDAR Program in its Phase 5 SAVE Plan.

10. CVA is not proposing any changes to the form of the currently authorized SAVE Rider and will continue to file the calculations of the True-Up Factor and Projected Factor, supporting materials, and associated rate sheets with the Commission on an annual basis (*i.e.*, no

later than August 15) as prescribed by § 56-604 E of the Code of Virginia. The Projected Factor will be eliminated effective with the first billing unit for January 2024, absent Commission approval of an extension of the SAVE Plan.

III. 2024 SAVE Rider and Supporting Schedules

11. This Application documents actual SAVE-eligible expenditures incurred during calendar year 2022, updates the schedule of annual SAVE-eligible expenditures anticipated in 2024, identifies the manner in which the Company will allocate capital expenditures among the six categories of SAVE-eligible infrastructure expenditures for 2024, documents the calculation of the True-Up Factor and Projected Factor, and includes the required schedules. The proposed 2024 SAVE Rider will increase the annual bill for an average residential customer using 64.9Dth per year, by \$21.24, or 1.6%, when compared to the rates in effect on June 29, 2023.

12. CVA's 2024 SAVE Rider is supported by the following schedules, which are consistent with Staff's recommendation in Case No. PUR-2017-00095 that local distribution companies use a standard format of SAVE Plan schedules to facilitate Staff's audit ("Standard Schedules").¹² Schedules 1 through 17 and Schedule ALDAR are included as Attachment A:

Schedule 1:	Total 2024 SAVE Revenue Requirement
Schedule 2:	True-Up Factor
Schedule 3:	Return on Investment
Schedule 3a:	Net Rate Base
Schedule 3b:	True-Up Prorated ADIT
Schedule 4:	Depreciation
Schedule 4a:	Monthly Depreciation
Schedule 5:	Property Tax
Schedule 5a:	Property Tax Rate
Schedule 6:	Carrying Costs
Schedule 7:	Revenue Conversion Factor
Schedule 7a:	Uncollectible Rate
Schedule 8:	Effective Tax Rate
Schedule 9:	Revenue Collection
Schedule 10:	Projected Factor

¹² See Application of Columbia Gas of Virginia, Inc. For approval to amend a SAVE Plan pursuant to Virginia Code § 56-604 and For approval to implement a 2018 SAVE Plan Infrastructure Reliability and Replacement Adjustment in accordance with Section 20 of its General Terms and Conditions, Case No. PUR-2017-00095, Staff Report, 6-7 (Nov. 3, 2017).

Schedule 11:	Projected Factor Return on Investment
Schedule 11a:	Projected Factor Net Rate Base
Schedule 11b:	Projected Factor Prorated ADIT
Schedule 12:	Projected Factor Depreciation
Schedule 12a:	Projected Factor Monthly Depreciation
Schedule 12b:	2023 Monthly Depreciation
Schedule 13:	Projected Factor Property Tax
Schedule 14:	Deferral Summary
Schedule 15:	Capital Expenditures Summary
Schedule 16:	Commission Approved Spend
Schedule 17:	Rate Impact
Schedule ALDAR:	Advanced LDAR O&M Costs¹³

13. Attached as Attachment B are Schedules 18 through 27, which provide supplemental information that is not required by the Standard Schedules, but that the Company has historically provided as part of its SAVE Plan filings to assist Staff's review:

- Schedule 18:** **2022 Actual Annual Expenditures** – Schedule of annual expenditures by plant sub-account, location, vintage, month, and scope of work undertaken.
- Schedule 19:** **2022 Actual Supplemental Information** – Schedule of miles of main, number of services, number of risers that were remediated, by type; leak rates for each section of pipe remediated; type of remediation undertaken; an explanation supporting the type of remediation selected; and an identification of any facilities that were abandoned.
- Schedule 20:** **2024 Estimated Annual Expenditures by Project** – A schedule of annual expenditures for 2024.
- Schedule 21:** **Support for Components** – Support for components: depreciation rates and depreciable base, property tax rates and taxable rate base, capital structure and overall weighted cost of capital, revenue conversion factor, and carrying costs on over/under recovery of eligible infrastructure replacement costs.
- Schedule 22:** **Support for Rate Base Proposed** – Support for rate base proposed: SAVE investment made, accumulated depreciation, accumulated deferred income tax, and plant retirements by plant sub-account and vintage.
- Schedule 23:** **Impact of SAVE Plan on Leak History and Greenhouse Gas Emissions** – Narrative and quantification of actual impact of the SAVE Plan on annual leak history and greenhouse gas emissions.
- Schedule 24:** **SAVE Plan Revenue and Costs by FERC Account** – For the 2022 True-Up Factor and 2024 Projected Factor, identification of the FERC accounts to which SAVE Plan revenue and costs are recorded.

¹³ The Company notes that Schedule ALDAR is new with this Application and is not part of the Standard Schedules.

- Schedule 25: Allocation Method of 2024 Capital Expenditures** – Identification of the manner in which the Company will allocate the capital expenditures among the six categories of SAVE-eligible infrastructure in the upcoming year.
- Schedule 26: Plant Retirement Rate Factors** – An analysis of the retirement rate factors for mains, services, and measurement and regulation plant accounts is provided to determine if there are any material changes to the previously applicable Plant Retirement Rate Factors. The resulting retirement percentage is used in the annual Projected Factor calculation.
- Schedule 27: Report of SAVE-eligible Plant Expenditures** – A report confirming the tracking of SAVE-eligible plant expenditures utilizing separate work orders.

IV. Supporting Testimony and Exhibits

14. CVA's Application to amend and extend its SAVE Plan is supported by the testimony of Brian K. Roberts, Manager of Field Engineering, Bryant K. Wong, Lead Regulatory Analyst, and Dan B. Rowe, Manager of Risk Assessment.

15. Mr. Roberts provides an overview of CVA's SAVE Plan and its effect in enhancing the safety and reliability of the Company's natural gas distribution system by reducing system integrity risks. He explains the Company's proposal for authorized investments in SAVE eligible infrastructure of up to \$69 million in 2024, \$67 million in 2025, and \$73 million in 2026, for a total spend of up to \$209 million. He also describes the Company's request for authorization to exceed this investment by 10% on an annual level and 10% on a cumulative level, for a Phase 5 maximum spend of \$229.9 million (consisting of construction work in progress and cost of removal). Mr. Roberts also supports maintaining the currently authorized SAVE infrastructure components, with the inclusion of the Company's proposed Advanced LDAR Program, in Phase 5 of the SAVE Plan and discusses the manner in which the Company prioritizes the types of infrastructure to be replaced over the course of the SAVE Plan.

16. Mr. Wong discusses the derivation of the SAVE Rider rates proposed to be in effect for the first billing unit of January 2024 based on the Company's proposed SAVE eligible expenditures. The SAVE Rider rate calculations for 2024 proposed in this case are based on a \$69 million projected SAVE eligible capital program for 2024; deferred 2022 and projected 2024

costs associated with the Company's Advanced LDAR Program; and the true-up of the recovery of the actual SAVE cost of service for the calendar year 2022. The detailed support for the calculations described above as well as other required schedules and materials in compliance with the Commission's SAVE orders, including the Company's SAVE Annual Report, are contained in Attachments A and B to this Application.

17. Mr. Rowe discusses the Company's Advanced Leak Detection and Repair Program and the associated costs the Company is proposing to include in its Phase 5 SAVE Plan.

V. Application Summary

18. CVA proposes to amend and extend its SAVE Plan for three years. The proposed Phase 5 SAVE Plan would be in effect for calendar years 2024 through 2026. It would allow for up to \$69 million in 2024, \$67 million in 2025, and \$73 million in 2026. In total, the Company would be authorized to spend up to \$209 million on SAVE eligible infrastructure projects in Phase 5 with the ability to exceed this investment by 10% on an annual basis and 10% on a cumulative basis, for a Phase 5 maximum spend of \$229.9 million (consisting of construction work in progress and cost of removal). The Company also proposes to include costs associated with its Advanced LDAR Program in its Phase 5 SAVE Plan.

WHEREFORE, CVA respectfully requests that the Commission: (i) direct that appropriate notice of this Application be provided; (ii) find that the Company's proposed Phase 5 SAVE Plan, which includes costs associated with its Advanced LDAR Program and a cap on SAVE eligible investments of \$229.9 million over three years, is prudent and reasonable; (iii) approve the Company's 2022 True-Up Factor as set forth in Attachment A (Schedule 17) of this Application to be effective with the first billing unit of January 2024 through the last billing unit of December 2024; (vi) approve the Company's 2024 Projected Factor as set forth in Attachment A (Schedule 17) of this Application to be implemented with the first billing unit of January 2024 through the last billing unit of December 2024; (v) approve the filing of rate sheets implementing the

2024 Projected Factor and 2022 True-Up Factor in a manner consistent with the authority requested herein; and (vi) grant such other and further relief as may be necessary and proper.

Respectfully submitted,

COLUMBIA GAS OF VIRGINIA, INC.

By: 

Counsel

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Chester, Virginia 23836
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Counsel for Columbia Gas of Virginia, Inc.
August 15, 2023

**DIRECT TESTIMONY
OF
BRIAN K. ROBERTS**

Witness Direct Summary
Case No. PUR-2023-00119

Witness: Brian K. Roberts

Position: Manager of Field Engineering for Columbia Gas of Virginia, Inc.

Summary:

Company Witness Brian K. Roberts provides an overview of CVA's SAVE Plan and its effect on enhancing the safety and reliability of the Company's natural gas distribution system by reducing system integrity risks. He explains the Company's proposal for authorized investments in SAVE eligible infrastructure of \$209 million over three years with the ability to exceed this level of investment by 10% on an annual and cumulative basis, for a Phase 5 maximum spend amount of \$229.9 million (consisting of construction work in progress and cost of removal), and identifies the projects included in the revenue requirement determination. He states that during Phase 5 the Company proposes to continue pipeline replacement projects for its VAM-1 and DVA-6 high pressure pipelines, and complete rebuilds of various M&R stations. The Company will also continue to replace mains, services, and risers that have been identified as SAVE eligible infrastructure.

Mr. Roberts also supports maintaining the currently authorized SAVE infrastructure components, with the inclusion of the Company's proposed Advanced LDAR Program, as described by Company Witness Dan B. Rowe. He also outlines the manner in which the Company prioritizes the types of infrastructure to be replaced over the course of the SAVE Plan.

**DIRECT TESTIMONY
OF
BRIAN K. ROBERTS
ON BEHALF OF
COLUMBIA GAS OF VIRGINIA, INC.
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2023-00119**

1 **Q. Please state your name and business address.**

2 A. My name is Brian K. Roberts and my business address is 1809 Coyote Drive,
3 Chester, Virginia.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am the Manager of Field Engineering for Columbia Gas of Virginia, Inc. ("CVA"
6 or the "Company"). I assumed this position in January 2018, and in this capacity
7 I am accountable for the overall leadership and management of the capital
8 program and field engineering function of CVA. These responsibilities include
9 long range capital planning, monthly budget updates, building capital projects,
10 and supporting CVA operations. A statement of my background and qualifications
11 is attached as Appendix A.

12 **Q. What is the nature and scope of the Company's Application in this**
13 **proceeding?**

14 A. The Company is requesting (i) authorization to amend and extend its Steps to
15 Advance Virginia's Energy ("SAVE") Plan ("SAVE Plan") for three years, through
16 2026 ("Phase 5") and (ii) approval of a SAVE Plan Rider ("SAVE Rider") for
17 calendar year 2024, inclusive of costs associated with the Company's Advanced
18 Leak Detection and Repair Program ("Advanced LDAR Program").

19 In accordance with CVA's current projections for its capital program, the Company
20 is proposing authorization to spend up to \$69 million on SAVE eligible

1 infrastructure under its Phase 5 SAVE Plan during calendar year 2024, up to \$67
2 million in 2025, and up to \$73 million in 2026. The Company requests
3 authorization to exceed this investment by 10% on an annual basis and 10% on a
4 cumulative basis, for a Phase 5 maximum spend of \$229.9 million (consisting of
5 construction work in progress and cost of removal).

6 **Q. Mr. Roberts, what is the purpose of your testimony in this proceeding?**

7 A. My testimony provides an overview of CVA's SAVE Plan and its effect on enhancing
8 the safety and reliability of the Company's natural gas distribution system by
9 reducing system integrity risks. I explain the Company's proposal for authorized
10 investments in SAVE eligible infrastructure of \$209 million over three years and
11 identify the projects included in the revenue requirement determination. I also
12 support maintaining the currently authorized SAVE infrastructure components,
13 with the inclusion of the Company's proposed Advanced LDAR Program, as
14 described by Company Witness Dan B. Rowe. I also outline the manner in which
15 the Company prioritizes the types of infrastructure to be replaced over the course
16 of the SAVE Plan.

17 **Q. Will the Company be presenting the testimony of any other witnesses**
18 **in support of its Application?**

19 A. Yes. Company witness Bryant K. Wong explains the SAVE Rider through which
20 CVA will continue to recover SAVE eligible infrastructure expenditures. Mr. Wong
21 sponsors Attachments A and B to the Application. Company witness Dan B. Rowe
22 will discuss the Company's Advanced LDAR Program and the associated costs the
23 Company is proposing to include in its SAVE Plan.

24 Background

25 **Q. Please describe CVA's distribution system.**

1 A. CVA is a natural gas local distribution company providing natural gas service to
2 approximately 290,000 residential, commercial, and industrial customers in
3 Central and Southern Virginia, the Piedmont region, and most of the Shenandoah
4 Valley, as well as portions of Northern and Western Virginia and the Hampton
5 Roads region. CVA provides that service through approximately 5,500 miles of
6 mains and 279,000 service lines that it owns, operates, and maintains.

7 **Q. What is the Company's SAVE Plan?**

8 A. CVA's SAVE Plan is a program designed to accelerate the replacement of certain
9 components of its gas system infrastructure in order to enhance system safety and
10 reliability. In 2010, the Virginia General Assembly enacted the SAVE Plan Act¹
11 ("SAVE Act"). The SAVE Act establishes a regulatory framework for natural gas
12 utilities to invest in the replacement of eligible infrastructure and recover the costs
13 of such infrastructure replacements in a timely manner. While CVA has been
14 diligent in maintaining the integrity and reliability of its natural gas distribution
15 system, the SAVE Act encourages the Company to enhance those efforts.
16 Consistent with the SAVE Act, the Commission authorized the Company to
17 implement its initial SAVE Plan in 2012 ("Initial SAVE Plan"), which was amended
18 in 2013. The Company's SAVE Plan was then amended and extended in Case No.
19 PUE-2015-00071 for the five-year period 2016-2020 ("Phase 2 SAVE Plan"). The
20 Phase 2 SAVE Plan was later amended in 2017 and 2019. In 2020, the Company
21 amended and extended the SAVE Plan for one additional year in Case No. PUR-
22 2020-00138 ("Phase 3"). In 2021, the Company amended and extended the SAVE
23 Plan for two additional years (2022-2023) in Case No. PUR-2021-00145 ("Phase
24 4"). Under the Phase 4 SAVE Plan, the Company was authorized to invest \$63

¹ Section 56-603 *et seq.* of the Code of Virginia.

1 million in 2022 and \$72 million of SAVE eligible capital expenditures in 2023 with
2 the ability to exceed this investment level by a 10% margin.

3 Current Phase 4 SAVE Plan

4 **Q. Please summarize the Company's current Phase 4 SAVE Plan.**

5 A. The Phase 4 SAVE Plan was authorized by the Commission in Case No. PUE-2021-
6 00145 for 2022-2023. Under the Phase 4 SAVE Plan, the Company was authorized
7 to invest \$63 million in 2022 and \$72 million of SAVE eligible capital expenditures
8 in 2023 with the ability to exceed this investment level by a 10% margin.

9 **Q. Please outline the operational aspects of the Phase 4 SAVE Plan.**

10 A. The Phase 4 SAVE Plan is designed to facilitate the accelerated replacement of
11 SAVE eligible natural gas infrastructure. SAVE eligible infrastructure under the
12 Company's Phase 4 SAVE Plan includes the replacement of bare steel mains, cast
13 iron mains², pre-1971 coated steel mains and services, certain first-generation
14 plastic pipe, isolated bare steel services, certain risers that are prone to failure, and
15 meter and regulator ("M&R") stations.

16 **Q. Is CVA proposing any modifications to the operational aspects of the**
17 **Phase 4 Plan for Phase 5?**

18 A. Yes, as explained by Company witness Rowe, the Company is proposing to include
19 its Advanced LDAR Program in its Phase 5 SAVE Plan.

² CVA eliminated all known cast iron mains from its system in 2015.

1 Review of SAVE Plan to Date

2 **Q. Please quantify the scope of CVA's replacement of SAVE eligible**
 3 **infrastructure components and facilities during the course of the SAVE**
 4 **Plan.**

5 **A.** Since the implementation of the Company's SAVE Plan through the end of 2022,
 6 the Company has eliminated approximately 113 miles of bare steel pipe, 80 miles
 7 of coated steel pipe, 4.5 miles of cast iron pipe, and 26 miles of plastic pipe. The
 8 Company has also replaced 10,877 SAVE eligible service lines, 24,816 prone to fail
 9 risers and upgraded 14 M&R stations. Table BKR-1 below reflects this information
 10 by year and the corresponding annual SAVE spend. As explained below, these
 11 activities have been effective in enhancing system integrity, safety, and reliability,
 12 and reducing greenhouse gas emissions.

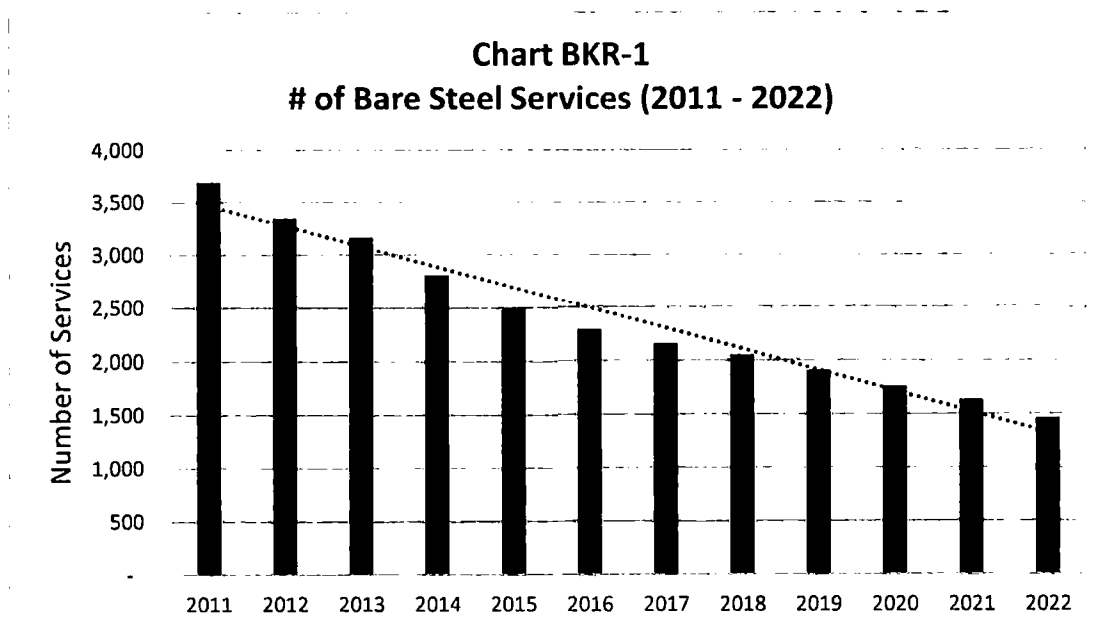
Table BKR-1

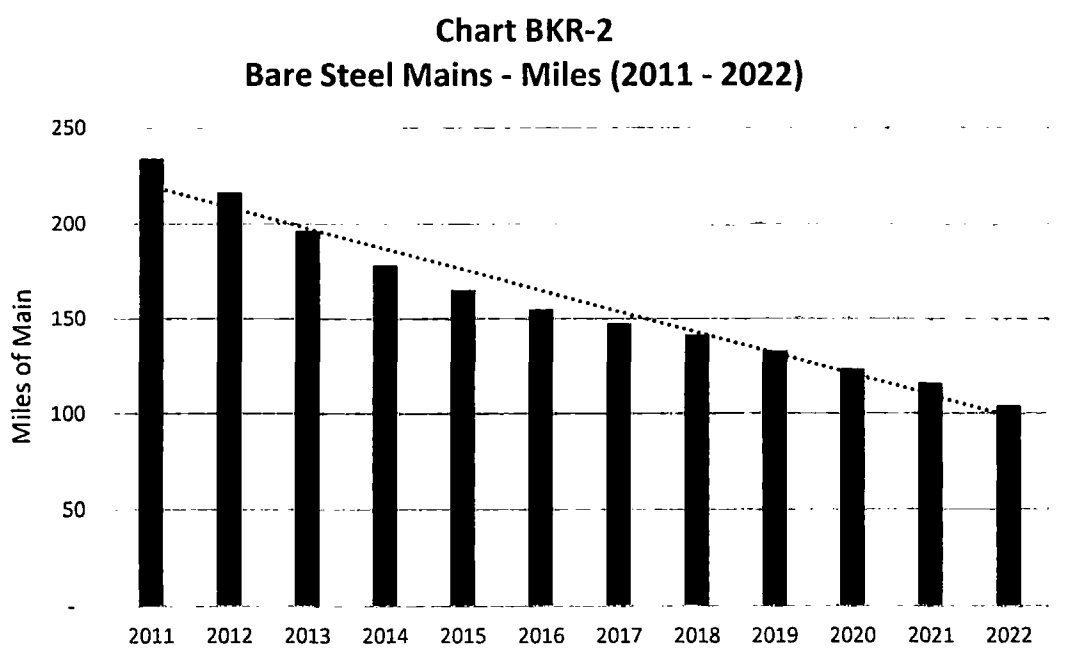
	Cast Iron	Bare Steel	Coated Steel	Plastic	Services	Risers	M&R Stations	Annual Spend
	miles remediated							
2011	0.4	8.2	1.1	0.5	885	0	0	\$7,344,430
2012	1.4	13.4	5.6	3.3	1,333	0	0	\$20,104,372
2013	0.1	14.3	4.7	3.8	1,620	1,410	0	\$27,258,645
2014	1.1	10.9	9.1	4.0	1,658	2,272	3	\$26,020,965
2015	1.5	9.6	4.6	2.2	1,078	3,500	1	\$31,250,000
2016	0.0	9.4	16.2	3.3	772*	3,766	1	\$33,756,488
2017	0.0	7.9	8.3	1.5	668*	4,368	2	\$36,963,084
2018	0.0	5.3	8.1	1.3	621	3,650	1	\$36,107,283
2019	0.0	6.5	7.3	0.7	726	3,845	2	\$37,500,000
2020	0.0	8.7	2.9	1.7	634	1,010	3	\$41,399,416
2021	0.0	6.5	5.2	0.4	484	544	0	\$36,925,312
2022	0.0	11.8	6.4	3.5	398	451	1	\$69,300,000
Total	4	113	80	26	10,877	24,816	14	\$403,929,996

*In its 2016 and 2017 SAVE filings, the Company inadvertently reported *all* replaced service lines rather than *SAVE eligible* replaced service lines in Schedule 19. The 2016 and 2017 service line replacements in table BKR-1 correctly reflect SAVE eligible service lines replaced in those years.

1 Q. Has CVA been successful in reducing the amount of SAVE eligible
2 mains and service lines from its system since the Initial SAVE Plan?

3 A. Yes. CVA's reduction in the amount of SAVE eligible mains and service lines from
4 its system is reflected in the charts below. Notably, CVA eliminated all known cast
5 iron mains from its system in 2015. Chart BKR-1 highlights the ongoing
6 replacement of bare steel services, including a 60% reduction in the number of
7 bare steel service lines since the beginning of CVA's SAVE Plan. Chart BKR-2
8 reflects the Company's ongoing replacement of bare steel mains, including a 56%
9 reduction in bare steel mains since the beginning of CVA's SAVE Plan.

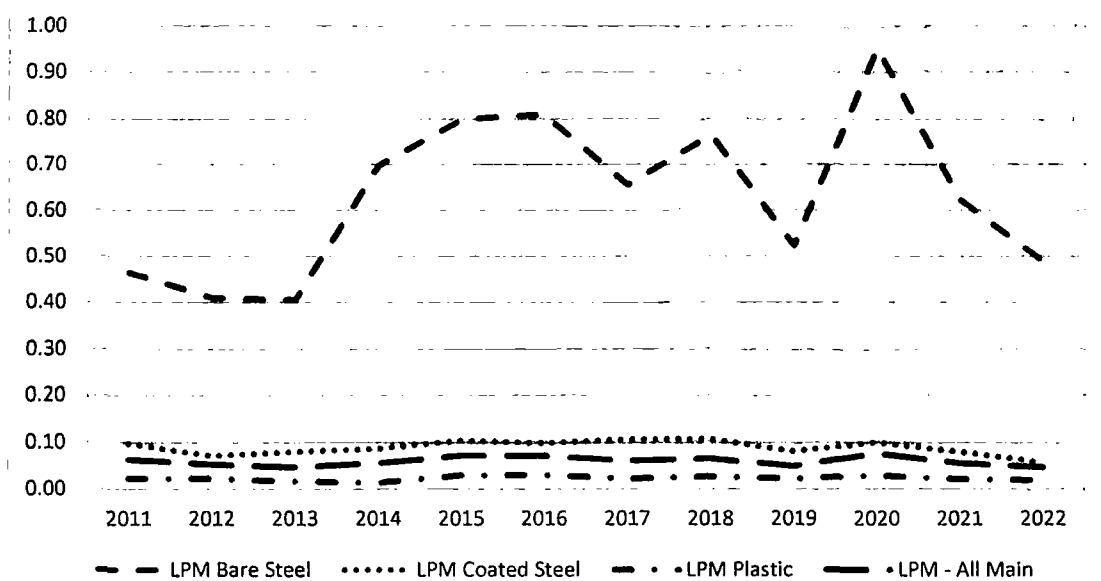




1 **Q. Please provide information on the main leak incident rates since the**
2 **beginning of the SAVE Plan.**

3 **A. Chart BKR-3 below shows the leaks per mile ("LPM") by type of main since the**
4 **beginning of the SAVE Plan.**

Chart BKR-3
Leaks per Mile (LPM) by Type of Main



1 **Q. Please discuss the Company's leak incident rate.**

2 A. The natural gas industry uses leaks per mile as a common metric to analyze leakage
 3 on pipelines. As shown in the chart above, the LPM incident rate has stayed
 4 relatively flat for plastic, coated steel, and in total, while the bare steel LPM
 5 incident rate has increased since 2011. There are two primary reasons for the
 6 increase in the bare steel LPM incident rate. First, as the miles of bare steel pipe
 7 decreases, the LPM incident rate will increase if the number of leaks has not
 8 declined at the same rate. For instance, the number of bare steel main leaks was
 9 10% higher in 2020 than at the beginning of the SAVE Plan; however, the number
 10 of miles of bare steel main has decreased by 56%. This increase in the number of
 11 leaks over the reduced miles of pipe results in a higher LPM incident rate as shown
 12 above.

1 Second, there is not a direct correlation between the replacement of bare steel pipe
2 and leak reduction. As segments of bare steel pipelines are replaced, the cathodic
3 polarization of the remaining pipeline changes. This causes the overall dynamic of
4 the electrical current on the pipeline to shift, which can exacerbate existing
5 weaknesses in the remaining segments and result in new leaks on the remaining
6 pipeline.

7 **Q. Can you provide an overview of how the SAVE Plan has enhanced**
8 **system integrity?**

9 A. Certainly. The SAVE Act has enabled CVA to accelerate its pipe replacement
10 program. Prior to enactment of the SAVE Act, CVA's capital program for SAVE
11 eligible investments averaged less than \$10 million annually. In 2012, the first full
12 year of the SAVE Plan, the annual spend doubled and has continued to grow over
13 time, reflecting CVA's commitment to improving the integrity of its system.

14 Through its SAVE Plan, the Company has been able to redefine how its system is
15 maintained. There is now a stronger focus on replacing facilities as opposed to
16 simply making short term repairs. By replacing pipeline segments that have
17 identified integrity issues, the Company has minimized the potential for
18 operational risk while enhancing its ability to serve the market and its customers
19 in a safe and reliable manner.

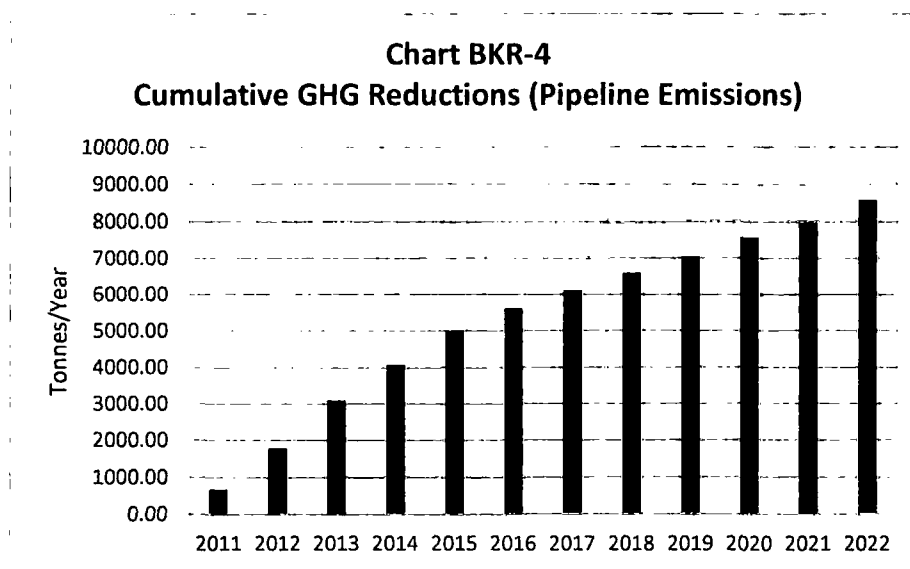
20 Beyond pipeline replacements, system integrity has also been enhanced through
21 M&R station upgrades. These upgrades enhance the Company's ability to maintain
22 stable and reliable downstream pressure to the markets and systems that rely on
23 uninterrupted natural gas service. These M&R upgrades have been particularly
24 beneficial in enhancing safety and service reliability to markets where distribution

1 system throughput and pressures can vary based on shifts in upstream supply and
2 downstream demand characteristics.

3 Across virtually all aspects of the Company's operations CVA's system reliability is
4 being enhanced and modernized in accordance with Company standards and
5 operational design.

6 **Q. Please explain how pipe replaced through CVA's SAVE Plan has**
7 **impacted greenhouse gas (GHG) emissions since the Initial SAVE Plan.**

8 A. By replacing cast iron, bare steel, and coated steel mains and services, CVA's
9 system has benefitted from reduced GHG emissions and reduced potential for
10 further emissions. As seen in chart BKR-4, CVA's cumulative GHG emission
11 reductions have now surpassed 8,500 metric tons on an annual basis. This is
12 equivalent to the GHG emissions from nearly 22 million miles driven by an average
13 passenger vehicle, or the CO2 emissions from over 1,000 homes' energy use for
14 one year. Additional information about how replacements of SAVE eligible
15 infrastructure have reduced GHG emissions is provided in Attachment B, Schedule
16 23b.



1 **Q. Please provide an update on the anticipated level of SAVE eligible**
2 **infrastructure replacement expenditures in Phase 4.**

3 **A. Table BKR-2 below provides an update to the projected spend in Phase 4.**

4 **Table BKR-2**

	2023 Submitted	2023 Updated	Variance
Blanket Main	\$22,198,046	\$21,472,394	(\$725,652)
Blanket Service Line	\$13,509,800	\$15,184,840	\$1,675,040
DVA-6 Ph 4	\$12,400,000	\$7,845,089	(\$4,554,911)
Reston/Stuart Road R-1169	\$1,000,000	\$1,000,000	\$0
Warrenton POD R-1638	\$500,000	\$500,000	\$0
Portsmouth/Lambert Trail R-1233	\$500,000	\$176,505	(\$323,495)
Petersburg POD R-1256	\$500,000	\$500,000	\$0
VAM 1 Phase 1	\$500,000	\$0	(\$500,000)
VAM 6	\$0	\$4,200,000	\$4,200,000
DVA-6 Ph 3 Carry Over	\$0	\$1,068,000	\$1,068,000
DVA 20	\$0	\$1,000,000	\$1,000,000
Total	\$51,107,846	\$52,946,828	\$1,838,982

5

6 As shown above, the Company has experienced variances in Phase 4 of the
7 program. The DVA-6 Phase 4 replacement project has experienced delays due to

1 land acquisition and subsequent project re-routing. The Company plans to execute
2 portions of Phase 4 in 2023, at a reduced scope. VAM 1 Phase 1 is currently
3 planned to begin in 2026 due to extensive permitting delays. VAM-6 and DVA-6
4 Ph 3 are carryover expenditures from 2022. Finally, DVA-20 is a segment
5 replacement near Harrisonburg that was added to the SAVE Plan.

6 Proposed Phase 5 of the SAVE Plan

7 **Q. The Company's current Phase 4 SAVE Plan was approved through**
8 **calendar year 2023. Why is the Company proposing to amend and**
9 **extend its SAVE Plan?**

10 A. As explained earlier in my testimony, the SAVE Plan has been successful in
11 accelerating the replacement of natural gas infrastructure that evidences a higher
12 rate of leakage or failure, thus enhancing system integrity, safety, and reliability.
13 The SAVE Plan has also reduced GHG emissions and reduced the potential for
14 further emissions. CVA has identified additional projects it expects to complete in
15 2024-2026 that will continue the progress made under the SAVE Plan and will
16 contribute to the positive impact on safety, reliability, and the environment that
17 the Company has been able to achieve through its SAVE Plan. Further,
18 incorporating the Advanced LDAR Program into the SAVE Plan in accordance with
19 the Virginia Energy Innovation Act will support the Company's efforts to find and
20 address leaks on its system which, in turn, will enhance the safety and reliability of
21 CVA's system and reduce greenhouse gas emissions.

22 **Q. Please discuss the Company's SAVE infrastructure budget and**
23 **anticipated spend level for 2024, 2025 and 2026.**

1 A. CVA's currently approved capital budget includes \$70 million for SAVE eligible
2 projects during calendar year 2024; however, the Company anticipates that
3 updates to the capital budget in the third quarter of 2023 will result in a slight
4 reduction of the 2024 capital budget to \$69 million for SAVE eligible projects.
5 Accordingly, CVA is requesting authority to spend up to \$69 million on SAVE
6 eligible infrastructure replacement projects in 2024. The Company further
7 requests approval to spend up to \$67 million on SAVE projects in 2025 and up to
8 \$73 million on SAVE projects in 2026 based on current budget projections. In
9 total, the Company would be authorized to spend up to \$209 million on SAVE
10 eligible infrastructure projects in Phase 5 with the ability to exceed this investment
11 by 10% on an annual basis and 10% on a cumulative basis, for a Phase 5 maximum
12 spend of \$229.9 million (consisting of construction work in progress and cost of
13 removal).

14 **Q. What projects will the Company undertake during Phase 5 of its SAVE**
15 **Plan that will enhance the integrity and reliability of the Company's**
16 **distribution system?**

17 A. The Company plans to (i) replace certain segments of its VAM-1 and DVA-6 high-
18 pressure pipelines; (ii) continue its replacement of blanket mains and services and
19 SAVE eligible risers; and (iii) replace aged and obsolete facilities at several M&R
20 stations across its system. I discuss the projects in each of these categories below.

21 **Q. Please elaborate on the high pressure pipeline replacement projects**
22 **that CVA plans to undertake in Phase 5.**

23 A. Details regarding the Company's two anticipated high pressure pipeline projects
24 are as follows:

- 1 • VAM-1 – VAM-1 is a 6" high-pressure bare steel pipeline constructed in the 1940s.
2 The pipeline runs through mountainous terrain in the Company's Lexington and
3 Lynchburg operating areas. The Company is in the process of replacing VAM-1
4 and plans to complete portions of the replacement project in 2026. Phase 8, in
5 2026, is estimated to cost approximately \$8.8 million. Phase 1, in 2026, is
6 estimated to cost approximately \$14.1 million. Permitting and land acquisition
7 costs of approximately \$1.2 million will be incurred in 2025 and are related to both
8 phases.
- 9 • DVA-6 – DVA-6 is a 1950s 8" high pressure coated steel pipeline that runs through
10 densely populated areas of Northern Virginia and serves that region of CVA's
11 operating area. The Company is in the process of replacing the DVA-6 pipeline
12 and plans to complete Phase 4 in 2024 and Phase 5 in 2026. The approximate cost
13 of these phases is expected to be \$28.2 million.

14 **Q. Please describe the Company's proposed replacements of blanket**
15 **mains and services.**

16 A. CVA's "blanket" main and service replacement projects are relatively small projects
17 that are executed by the Company's Construction Department rather than a Major
18 Projects Team, which oversees high pressure pipeline replacement projects. The
19 Company will continue to replace blanket mains and services in order to eliminate
20 bare steel, pre-1971 coated steel, and first-generation plastic pipelines from its
21 system. The Company will also continue to replace SAVE eligible risers. CVA plans
22 to spend approximately \$42.2 million on these efforts during 2024. Additional

1 information on the SAVE eligible projects planned for 2024 is provided in
2 Schedules 20 and 25 contained in Attachment B.

3 **Q. What tools does the Company use to prioritize pipeline replacement**
4 **projects?**

5 A. In Phase 4, the Company started using the Uptime MRP tool to prioritize SAVE
6 replacement projects. The Company will continue to use Uptime MRP for Phase 5.
7 This application enables the Company to make a holistic assessment of threats to
8 its distribution system that incorporates data from technologies such as GIS and
9 WMS. Specifically, this model is used to assess risk on all distribution mains,
10 services, valves, and other fittings that are outside of an M&R station. The
11 application uses geographic information to assess location-based risk factors (i.e.,
12 the proximity of pipeline segments to schools, hospitals, densely populated areas,
13 etc.) and utilizes probabilistic risk assessment to inform the prioritization of
14 infrastructure replacement. Uptime MRP also has the capabilities of Optimain –
15 the Company's prior prioritization tool that remained in place until 2022 – to
16 evaluate and rank pipe segments against a range of environmental factors (e.g.,
17 population density, building class, surface cover type, etc.), risk factors (e.g., pipe
18 segment leak history, pipe condition, pitting depth, depth of cover, etc.), and
19 economic factors. In addition, Uptime MRP uses metrics common to CVA's DIMP-
20 based risk analysis to enhance the coordination between SAVE replacement
21 prioritization and integrity management. Finally, the data derived from Uptime
22 MRP is reviewed and analyzed by the Company's subject matter experts when
23 making decisions on the timing and prioritization of projects.

24 **Q. Please elaborate on the M&R Station replacement projects that CVA**

1 **plans to undertake during Phase 5 of its SAVE Plan.**

2 A. Details regarding the anticipated SAVE eligible M&R replacement projects are as
3 follows:

- 4 • Reston/Stuart Road POD – The Reston/Stuart Road POD was built in 1984. This
5 POD serves approximately 16,500 customers around Herndon, Reston, Floris,
6 and other parts of Fairfax County in combination with several other PODs. The
7 work for this station is planned for 2025, so the final design of the project has not
8 yet been developed. However, the Company anticipates that a complete rebuild
9 of the station will be needed as the components of this station are aged and
10 nearing the end of their useful life. Specifically, the heater, regulators, and piping
11 will be evaluated for replacement. The Company has also observed corrosion on
12 the inlet header of the regulator, which is subjected to higher pressures. Although
13 this situation has been addressed with burst sleeves, corrosion issues are better
14 addressed through replacement of the station, which is nearly 40 years old. The
15 total anticipated investment for this project is approximately \$5.5 million.

- 16 • Ecoff POD – The Ecoff POD was built in the 1980s. This POD serves approximately
17 17,900 customers in the Chester, Chesterfield, and Colonial Heights market in
18 combination with several other PODs. The work for this station is planned for
19 2026, so the final design of the project has not yet been developed. Several
20 components of this station are aged and at the end of their useful life. Specifically,
21 the Company anticipates that the station's regulation and associated top works,
22 heater, and warning device will need to be replaced. Further investigation will
23 determine whether additional replacements are warranted. CVA is determining
24 whether a new site will be required due to the added size of the new station. The

1 total anticipated investment for this project is approximately \$3.7 million.

2 • Petersburg POD – Petersburg POD was built in 1988. This POD serves
3 approximately 11,150 customers in the Petersburg and Hopewell market in
4 combination with several other PODs. The work for this station is planned for
5 2024. The scope of the work includes a complete replacement of the station
6 including a new heater, regulation set, and odorization equipment. Replacement
7 of the undersized heater will prevent freeze off, which can lead to customer
8 outages and over-pressurization. Replacing the inappropriately sized regulators
9 that can become choked for capacity and lead to outages and over-pressurization
10 will enhance the station's safety and reliability. Replacement of the existing piping
11 with overly high velocity will alleviate control issues with the control lines that
12 could lead to over-pressurization. The total anticipated investment for this project
13 is approximately \$3.7 million.

14 • Portsmouth / Lambert Trail POD – The Portsmouth / Lambert Trail POD was
15 built in 1993. This POD serves approximately 39,950 customers in the
16 Portsmouth, Suffolk, and Chesapeake market in combination with several other
17 PODs. The work for this station is planned for 2024, and CVA anticipates that the
18 scope of work will be replacement of the regulation and associated top works, not
19 a complete rebuild of the station. These components are aged and outdated.
20 Replacing the regulators and top works will update the regulation that, as it ages,
21 becomes increasingly prone to failure and difficult to repair. The total anticipated
22 investment for this project is approximately \$2.7 million.

23 • Stanardsville POD – The Stanardsville POD was built in the 1960s. The POD
24 serves approximately 185 customers within the Town of Stanardsville and Greene

1 County. It is the sole feed to this part of the distribution system. The work for this
2 station is planned for 2025, so the final design of the project has not yet been
3 developed. However, the Company anticipates that, at a minimum, the station's
4 regulation and associated top works will need to be replaced. These components
5 are aged and outdated. Replacing the regulators and top works will update the
6 regulation that, as it ages, becomes increasingly prone to failure and difficult to
7 repair. As the Company conducts its site visits and investigatory work, it will
8 determine whether other components warrant replacement. The total anticipated
9 investment for this project is approximately \$4.0 million.

- 10 • Warrenton POD – The Warrenton POD was built in the 1960s. This POD serves
11 approximately 3,700 customers within the Town of Warrenton and Fauquier
12 County. The work for this station is planned for 2024. The final design of the
13 project has not yet been finalized, but the Company anticipates that replacements
14 will include the regulation and associated top works as well as the odorizer and
15 station piping. These components are aged and outdated. Replacing the
16 regulators, odorizer, and station piping will update vital station components that,
17 as they age, become increasingly prone to failure and corrosion and are difficult to
18 repair. The total investment for this project is approximately \$3.7 million.

19 The Reston/Stuart Road, Petersburg, and Portsmouth/Lamberts Trail projects
20 described above were included in the Company's filing for approval of its Phase 4
21 SAVE Plan; however, the projects were delayed and could not be completed during
22 Phase 4.

23 **Q. How did the Company select M&R replacement projects for its Phase 5**
24 **SAVE Plan?**

1 A. CVA uses its M&R Station Risk Prioritization Model ("Prioritization Model") to
2 inform its timeline of M&R Station replacement projects. The Prioritization Model
3 was developed in 2014 and reviewed and approved by the Commission's Division
4 of Utility and Railroad Safety. In addition to the Prioritization Model, the Company
5 considers other factors such as the recommendations of subject matter experts, the
6 ability to acquire additional land or permits that may be required to complete the
7 work, and how M&R Station upgrades fit into the Company's plans for other
8 infrastructure replacements.

9 **Q. Why is it important to replace aged and outdated components of M&R**
10 **stations?**

11 A. M&R facilities that are nearing the end of their useful life become more prone to
12 failure as they age. Generally, when aged components fail it is difficult to obtain
13 replacement parts to address the failure. This has the potential to prolong
14 customer outages associated with the failure and even extend the time of an
15 emergency response as the Company works to either find replacement parts or
16 engineer a way to fix the issue. Further, the operational integrity of the Company's
17 M&R stations is crucial to preventing over pressurization, ensuring proper
18 odorization of gas flowing downstream of the station and to CVA's customers and,
19 in general, maintaining the safety and reliability of the Company's system.

20 **Q. Why is CVA proposing to continue to accelerate the replacement of**
21 **each of the types of infrastructure identified in the current Phase 4**
22 **SAVE Plan?**

23 A. Phase 5 of the Company's SAVE Plan includes the same five categories of SAVE
24 eligible investment authorized by the Commission for the Phase 4 SAVE Plan.

1 Each type of pipe and system component to be retained as eligible infrastructure
2 under Phase 5 demonstrates much higher leak rates than the corresponding
3 materials that CVA is installing today. In addition, based on their operating
4 performance, there is a greater risk of failure of these pipe types and system
5 components. Across the natural gas industry, first generation systems such as bare
6 steel mains and services, first generation plastic systems like Aldyl-A and PVC pipe,
7 pre-1971 coated steel pipe, and prone to fail risers, are being replaced at an
8 accelerated rate. Also, many M&R Stations have been in service for many years
9 and have begun to reach the end of their useful life. I will discuss each category of
10 investment in more detail below.

11 **Q. Please provide the Company's rationale for continuing to accelerate**
12 **the replacement of medium and low pressure bare steel main, high**
13 **pressure bare steel main, cast iron main and bare steel service lines in**
14 **Phase 5 of the SAVE Plan.**

15 A. CVA currently operates 89 miles of medium and low-pressure bare steel mains and
16 15 miles of high pressure bare steel mains. Although CVA's LPM for high pressure
17 bare steel mains (greater than 60 psi) has been stable, CVA is still experiencing an
18 increased leakage rate for medium and low pressure bare steel mains (60 psi or
19 less) compared to corresponding materials, such as plastic and coated steel, that
20 CVA is installing today. Although bare steel comprised only 1.9% of the Company's
21 total miles of main in 2022, it accounted for 20% of the total number of main leaks.
22 Similarly, bare steel services comprised less than 1% of the Company's service
23 lines; however, they accounted for nearly 10% of the service leaks that occurred on
24 CVA's system in 2022.

1 CVA currently operates a total of approximately 279,023 service lines across its
2 operating territory, with 261,543 or 94% plastic, 15,983 or 6%, cathodically
3 protected coated steel, and 1,497, or less than 1%, bare steel.

4 As noted above the Company eliminated all known cast iron from its system in
5 2015; however, if the Company discovers cast iron pipelines on its system, it would
6 replace those pipelines as SAVE eligible infrastructure.

7 **Q. What is the Company's rationale for continuing to accelerate the**
8 **replacement of first-generation plastic pipe in Phase 5 of the SAVE**
9 **Plan?**

10 A. While the potential for leakage on plastic mains is much lower than for bare steel,
11 first generation plastic that was utilized as a substitute for steel can be vulnerable
12 to leakage due to pipe material failure and installation practices. For example,
13 Aldyl-A, which is a type of first-generation plastic that is classified as medium
14 density polyethylene, has an operating history demonstrating that it is more
15 vulnerable to stress propagation cracking than other plastics. With a MAOP of up
16 to 60 psi, cracks or breaks in these plastic facilities can pose a risk to public safety.

17 First generation plastic installation guidelines and operator practices were
18 developing to accommodate this emerging material type and were less refined than
19 today. As such, first generation plastic fusion procedures and practices could
20 result in "cold" fusions as a result of various factors such as inadequate or improper
21 heating temperatures, heating melt times, and bonding pressures, which were
22 necessary to make a sustainable gas tight joint.

23 **Q. What is the rationale for continuing to accelerate the replacement of**
24 **pre-1971 coated steel mains and services in Phase 5 of the SAVE Plan?**

1 A. Coated steel pipe installed prior to 1971 evidences a higher potential for leaks since
2 installations were not subject to stringent Federal Pipeline Safety Regulations
3 governing cathodic protection (49 CFR Part 192) until August 1971. Further, many
4 pre-1971 coated steel facilities were not initially installed with active cathodic
5 protection systems (anodes or rectifiers) but were retrofitted with these systems
6 later to comply with the mandates of 49 CFR Part 192.457. As a result of the lack
7 of active cathodic protection in the early years of the operation of such pipeline
8 facilities, those facilities experienced unchecked corrosion, creating corrosion "hot
9 spots" that have continued to deteriorate (at a somewhat slower rate) even after
10 cathodic protection was installed.

11 **Q. Please provide the Company's rationale for continuing to accelerate**
12 **the replacement of certain risers on plastic service lines in Phase 5 of**
13 **the SAVE Plan.**

14 A. A number of local distribution companies have experienced numerous failures on
15 the plastic-to-steel transition fittings of field assembled or prone to fail risers, some
16 of which have resulted in federally reportable incidents. The genesis of these types
17 of failures can be attributed to the complexity of the riser and the various riser
18 components required to make a gas tight fitting. Failure to install risers in
19 accordance with manufacturers' instructions under field conditions will result in
20 long term failure that may not be readily detectable during pressure testing at the
21 time of installation. With these risers installed directly adjacent to a structure
22 being served, any leakage is likely to result in a Grade 1 leak, which is the highest
23 leak classification and requires immediate response.

24 **Q. Please explain the Company's rationale for continuing to accelerate the**
25 **replacement of M&R Station components in Phase 5 of the SAVE Plan.**

1 A. M&R Stations reduce and control the pressure of gas entering the distribution system
 2 from higher pressure interstate pipelines, intrastate pipelines, and company-owned
 3 distribution pipelines. M&R Stations include critical components that enhance the
 4 safety and reliability of CVA's gas distribution system. Many M&R facilities lack
 5 redundancy, remote relief valves, telemetry, pipeline heaters, or gas filter/separator
 6 equipment. These important features can significantly improve the safety of these
 7 facilities. In addition, certain components in CVA's M&R Stations have been in
 8 service for many years and have begun to reach the end of their useful lives.

9 **Q. Will infrastructure replacements under Phase 5 of the SAVE Plan**
 10 **provide similar benefits to those under the current Phase 4 SAVE Plan**
 11 **and be consistent with the SAVE Act?**

12 A. Yes. Consistent with Phase 4, eligible infrastructure projects undertaken during
 13 Phase 5 will enhance safety and reliability by reducing system integrity risks
 14 associated with customer outages, corrosion, equipment failures, material failures,
 15 or natural forces. The infrastructure projects to be undertaken during Phase 5 will
 16 also reduce, or have the potential to reduce, greenhouse gas emissions.

17 **Q. Please address environmental justice.**

18 A. The Company's proposed SAVE Plan is designed in accordance with the SAVE Act
 19 and is consistent with the principles of environmental justice set forth in Va. Code
 20 § 2.2-234 *et seq.* Specifically, the SAVE Act defines "eligible infrastructure
 21 replacement" in relevant part as:

22 ...natural gas utility facility replacement projects that: (i) *enhance*
 23 *safety or reliability* by reducing system integrity risks associated
 24 with customer outages, corrosion, equipment failures, material
 25 failures, or natural forces; (ii) do not increase revenues by directly
 26 connecting the infrastructure replacement to new customers; (iii)
 27 *reduce or have the potential to reduce greenhouse gas emissions*;
 28 (iv) are commenced on or after January 1, 2010; and (v) are not

1 included in the natural gas utility's rate base in its most recent rate
2 case... [emphasis added]³
3

4 Projects eligible for inclusion in a natural gas utility's SAVE Plan must be
5 infrastructure replacement projects that enhance the safety and reliability of the
6 utility's distribution system and reduce or have the potential to reduce greenhouse
7 gas emissions. SAVE projects in general – and CVA's proposed SAVE eligible
8 projects in particular – replace existing infrastructure in order to enhance the
9 safety and reliability of the entire distribution system and to have positive impacts
10 on the environment by reducing leaks. All of CVA's customers and the
11 communities the Company serves receive these benefits.

12 CVA uses its DIMP Plan and Uptime MRP to prioritize and manage system
13 integrity risks. Accordingly, the criteria used to select SAVE projects are based on
14 maximizing the benefits of system safety and reliability and environmental
15 stewardship that flow to all customers. Since these projects involve replacement
16 or modernization of existing facilities, SAVE projects are not akin to installations
17 of new infrastructure requiring siting determinations that impact certain
18 geographic locations and communities where similar natural gas facilities
19 performing essentially the same functions did not already exist.

20 The SAVE Act requires that a SAVE rider be designed "in accordance with
21 appropriate cost causation principles in order to avoid any undue cross-
22 subsidization between rate classes." As discussed in the pre-filed direct testimony
23 of Company witness Wong, CVA's proposed SAVE rider is designed as prescribed
24 by the SAVE Act. The Company's SAVE rider is a mechanism designed to recover

³ Section 56-603 of the Code of Virginia.

1 actual costs of SAVE eligible projects from all customers, in recognition of the fact
2 that all customers subject to tariffed rates benefit from those projects, regardless
3 of geography, demographics, or income level.

4 Finally, the SAVE Act provides for notice and opportunity for a hearing as the
5 Commission may prescribe, which allows for participation of interested persons.

6 **Q. Please provide a summary of your testimony.**

7 A. The Company is proposing to amend and extend its SAVE Plan for three years (for
8 calendar years 2024 through 2026) and is requesting authorization to spend up to
9 \$69 million on SAVE eligible infrastructure replacement projects in 2024, up to
10 \$67 million in 2025, and \$73 million in 2026 for a total of \$209 million. The
11 Company requests authorization to exceed this investment by 10% on an annual
12 basis and 10% on a cumulative basis, for a Phase 4 maximum spend of \$229.9
13 million (consisting of construction work in progress and cost of removal). This
14 proposed Phase 5 SAVE Plan will be a continuation of the progress CVA has made
15 under the SAVE Plan in replacing certain infrastructure and thereby enhancing the
16 safety and reliability of the Company's distribution system and reducing GHG
17 emissions. Specifically, during Phase 5 the Company proposes to continue pipeline
18 replacement projects for its VAM-1 and DVA-6 high pressure pipelines, and
19 complete rebuilds of various M&R stations. The Company will also continue to
20 replace mains, services, and risers that have been identified as SAVE eligible
21 infrastructure. These infrastructure replacements will advance the Company's
22 efforts to replace bare steel, pre-1971 coated steel, first generation plastic pipelines
23 and SAVE eligible risers from its system. Further, incorporating the Advanced
24 LDAR Program into the SAVE Plan will enhance the safety and reliability of CVA's

1 system and reduce greenhouse gas emissions. Based on the foregoing, amending
2 and extending the SAVE Plan as proposed for Phase 5 is reasonable and prudent.

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

4 **A.** Yes, it does.

APPENDIX A

**BACKGROUND AND QUALIFICATIONS
OF
BRIAN K. ROBERTS**

I graduated from Virginia Tech with a B.S in Mechanical Engineering in 2003. I then earned my degree of Master of Business Administration from Virginia Commonwealth University in 2007. I began my career at the Virginia State Corporation Commission in 2006 where I was a Utilities Engineer conducting pipeline safety inspections of regulated gas companies. In 2013 I was awarded the position of Operations Compliance Manager with Columbia Gas of Virginia. In that role I worked with CVA to implement compliance strategies as well as acted as the DIMP Coordinator for CVA. In 2015, I moved into the Manager, Distribution Integrity Management Program (DIMP) role where I had oversight and management of the DIMP plans across all NiSource companies. In that role I served on the AGA DIMP Committee as second Vice Chair, Vice Chair, and Chairman of the committee. As previously noted, I assumed my current role in 2018.

**DIRECT TESTIMONY
OF
DAN B. ROWE**

Witness Direct Summary
Case No. PUR-2023-00119

Witness: Dan B. Rowe

Position: Manager of Risk Manager of Risk Assessment for
NiSource Corporate Services Company

Summary:

Company Witness Rowe discusses the Company's Advanced LDAR Program and the associated costs the Company is proposing to include in its Phase 5 SAVE Plan. He explains how the Company's Advanced LDAR Program uses AMLD technologies to supplement its traditional leak detection and repair processes and that the Company will continue to employ this mobile technology throughout the course of its Phase 5 SAVE Plan. He also explains that pursuant to §§ 56-603 and 56-604, as well as the Company's Stipulation in its 2022 Rate Case, the Company is seeking recovery of deferred advanced mobile leak detection costs in this proceeding.

**DIRECT TESTIMONY
OF
DAN B. ROWE
ON BEHALF OF
COLUMBIA GAS OF VIRGINIA, INC.
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2023-00119**

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

2 A. My name is Dan B. Rowe, and I am the Manager of Risk Assessment for NiSource
3 Corporate Services Company. My business address 1501 Hale Ave, Ft. Wayne, Indiana,
4 46802. A statement of my background and qualifications is attached as Appendix A.

5 **Q. Please discuss your areas of responsibility with the Company.**

6 A. As Manager of Risk Assessment, I am responsible for overseeing the risk tools used to
7 assess risk across asset classes. I am also responsible for the deployment of Advanced
8 Mobile Leak Detection ("AMLD") across NiSource, including Columbia Gas of Virginia,
9 Inc. ("CVA" or the "Company").

10 **Q. What is the nature and scope of the Company's Application in this**
11 **proceeding?**

12 A. The Company is requesting (i) authorization to amend and extend its Steps to Advance
13 Virginia's Energy ("SAVE") Plan ("SAVE Plan") for three years, through 2026 ("Phase 5")
14 and (ii) approval of a SAVE Plan Rider ("SAVE Rider") for calendar year 2024, inclusive
15 of costs associated with the Company's Advanced Leak Detection and Repair Program
16 ("Advanced LDAR Program").

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

18 A. I will discuss the Company's Advanced LDAR Program and the associated costs the
19 Company is proposing to include in its SAVE Rider. As discussed below, CVA's Advanced
20 LDAR Program uses AMLD technologies to supplement its traditional leak detection and

1 repair processes and the Company will continue to employ this mobile technology
2 throughout the course of its Phase 5 SAVE Plan.

3 Advanced Leak Detection and Repair Program

4 **Q. What is advanced mobile leak detection?**

5 A. Advanced mobile leak detection is a method of detecting leaks on natural gas pipeline
6 main lines, service lines, and meters through use of enhanced methane sensing
7 technology. Traditionally, leak surveys of pipeline facilities have been performed by foot
8 patrol. Advanced mobile leak detection offers the opportunity to leverage technology to
9 more precisely and efficiently detect and measure methane emissions by relying on high-
10 sensitivity analyzers mounted on vehicles that detect leaks when driven in the vicinity of
11 natural gas facilities.

12 **Q. What advanced mobile leak detection technology does the Company plan to**
13 **use during Phase 5 of its SAVE Plan?**

14 A. CVA plans to continue its work with Picarro, a leader in the advanced mobile leak detection
15 industry. Picarro's proprietary technology – known as the Picarro Surveyor – can be
16 retrofit on certain fleet vehicles that drive around CVA's service territory and detect
17 indications of gas leaks and collect data on those indications occurring on the Company's
18 distribution system. Picarro software analyzes the data collected, which enables CVA to
19 quantify the amount of gas escaping from each leak indication.¹ These AMLD technologies
20 enhance CVA's ability to efficiently find, prioritize, and resolve leaks, helping to reduce the

¹ As discussed herein, the Picarro technology detects "leak indications." This data is then analyzed to determine whether the indication represents a leak on the Company's distribution system and the scope – or "grade" – of that leak. Hereafter, the indications detected by the Picarro technology will be referred to simply as "leaks."

1 levels of methane – a greenhouse gas – released into the atmosphere and improve the
2 safety and reliability of the system for the Company's customers.

3 **Q. What steps has the Company taken to implement Advanced LDAR?**

4 A. The Company began its initial implementation of Advanced LDAR in June 2022 with the
5 deployment of a vehicle equipped with Picarro AMLD technology. During this initial
6 implementation phase, the Picarro vehicle was driven approximately 240 miles in the
7 Company's Central and Northern Operating Areas from June through September 2022
8 focusing on Picarro's "Analytics Mode" capabilities, which detect all leaks within reach of
9 the vehicle's sensors. During this time and following the initial implementation, the
10 Company also tested the "Emissions Quantification Mode" which detects only large
11 volume leaks² within reach of the vehicle's sensors. When leaks were detected through
12 AMLD, they were investigated using traditional inspection methods (e.g., walking the
13 areas of leak indications with traditional leak detection equipment to verify and grade the
14 leak). Through this process CVA was able to analyze the full range of capabilities this new
15 AMLD technology offers and supplement its traditional leak detection methods.

16 Since this initial implementation, CVA has continued to deploy AMLD in other areas
17 scheduled for leak detection surveys by traditional methods. In total, the Company
18 surveyed over 1,000 miles in 2022 throughout its service territory. CVA continued its
19 AMLD efforts in 2023, surveying approximately 400 miles during the first half of the year.
20 Since completion of the initial implementation -- and likely through 2024 -- the Picarro

² "Large volume leaks" are currently defined as leaks greater than 10 standard cubic feet per hour ("scfh"). This threshold will be reduced in the future as large volume leaks are fixed and eliminated.

1 vehicle has been running primarily in Emissions Quantification Mode to supplement
2 CVA's traditional leak detection activities by identifying large volume leaks.

3 **Q. What are the Company's plans for AMLD during its proposed Phase 5 SAVE**
4 **Plan?**

5 A. As the next step in CVA's transition to ALMD, the Company will add a second AMLD
6 vehicle to its Advanced LDAR Program in 2024. An additional vehicle equipped with
7 AMLD will enable the Company to double its ability to survey its territory and identify and
8 prioritize leaks. As noted above, CVA plans to run both vehicles primarily in Emissions
9 Quantification Mode, using the vehicles to detect large volume leaks that will be prioritized
10 for repair. These activities will continue to supplement and enhance CVA's traditional leak
11 detection methods.

12 Beyond 2024, CVA intends to transition from AMLD as a supplement to its traditional
13 leak detection program to AMLD as the primary means of leak detection throughout its
14 service territory. This will require three vehicles to operate in Analytics Mode, detecting
15 all leaks in their reach. Accordingly, costs related to a third Picarro vehicle are included
16 for 2026 in the table below.

17 **Q. Is the Company required to use AMLD technology to conduct leak surveys of**
18 **its pipeline facilities?**

19 A. Currently advanced leak detection technologies are not mandated by statute or regulation.
20 However, on May 18, 2023 PHMSA published a Notice of Proposed Rulemaking that, in
21 its current form, will require all gas operators to perform leakage surveys using
22 commercially available advanced technologies and practices consistent with the advanced

1 leak detection program ("ALDP") requirements proposed in §192.763³. CVA's Advanced
2 LDAR Program, which incorporates Picarro's AMLD technologies, aligns with PHMSA's
3 proposed regulations. It is important that CVA continue and expand its Advanced LDAR
4 efforts not only to position itself for compliance with PHMSA's proposed regulations, but
5 also to recognize the benefits to system safety and reliability and reduction in greenhouse
6 gas emissions that this technology offers our Company, our customers, and the
7 communities we serve.

8 Proposed Recovery through the SAVE Act

9 **Q. Is the Company proposing to recover costs related to its Advanced LDAR**
10 **Program in its SAVE filing?**

11 A. Yes. Section 56-604 of the Code of Virginia ("Code") provides that a natural gas utility's
12 SAVE Plan may include an enhanced leak detection and repair program. Section 56-603
13 of the Code defines an "Enhanced leak detection and repair program" as "a program that
14 is designed to allow a natural gas utility to deploy advanced leak detection technologies to
15 more accurately identify active leaks as part of the natural gas utility's leak management
16 program and to prioritize the repair of leaks that present a risk to safety or the
17 environment." Further, "[a] natural gas utility may amend its SAVE plan to include an
18 enhanced leak detection and repair program by filing an application to amend its
19 previously approved SAVE plan...."

20 **Q. Please explain the terms of the Stipulation in CVA's 2022 Rate Case as they**
21 **relate to the recovery of cost related to Advanced Mobile Leak Detection.**

22 A. The Stipulation provides that the Company may defer Advanced Mobile Leak Detection
23 costs, including carrying charges, in excess of the base rate baseline amount of \$1,351,835.

³ Pipeline and Hazardous Materials Administration, Pipeline Safety: Gas Pipeline Leak Detection and Repair, 88 FR 31979 (proposed May 18, 2023).

In accordance with the Stipulation, CVA is allowed to propose recovery of any deferred advanced mobile leak detection costs in a future SAVE amendment proceeding.

Q. Did the Company defer any 2022 Advanced LDAR costs in accordance with the Stipulation?

A. Yes. The Company's 2022 leak detection costs totaled \$1,527,565, and as such, the Company has deferred \$175,730. As explained by Company witness Wong, the Company requests recovery of this amount in the True-up Factor of its 2024 SAVE Rider.

Q. Please detail the costs that are proposed for recovery in the Company's Phase 5 SAVE Plan.

A. The table below details the costs associated with the Company's Advanced LDAR Program during Phase 5 of its SAVE Plan.

Advanced LDAR Program Costs	2024	2025	2026
Leak Investigation Costs (O&M)	\$ 5,928	\$ 4,028	\$ 2,970
LVL Leak Repair Costs (O&M)	\$ 405,077	\$ 417,229	\$ 486,291
Contracted Driver Costs (O&M) (1)	\$ 123,600	\$ 123,600	\$ 123,600
Additional Contracted Driver Costs (O&M)	\$ 123,600	\$ 123,600	\$ 247,200
Annual Vehicle Service Fee (O&M) (1)	\$ 63,541	\$ 63,541	\$ 63,541
Additional Annual Vehicle Service Fee (O&M)	\$ 60,000	\$ 60,000	\$ 120,000
Additional Picarro Vehicle/Technology (Capital)	\$ 1,236,000	\$ -	\$ 1,311,272
Total O&M Costs	\$ 781,746	\$ 791,998	\$ 1,043,603
Total Capital Costs	\$ 1,236,000	\$ -	\$ 1,311,272
Total Advanced LDAR Program Costs	\$ 2,017,746	\$ 791,998	\$ 2,354,875

(1) The Contracted Driver and Annual Vehicle Service Fee are costs already included in base rates. The Company is only requesting recovery of its Advanced LDAR Program costs that are not included in base rates.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

**BACKGROUND AND QUALIFICATIONS
OF
Dan B. Rowe**

I received a Bachelor of Science in Industrial Engineering from Purdue University in 2003. I began my professional utility career at NIPSCO (NiSource's Indiana based company) and have held various engineering and leadership positions in cathodic protection, gas systems operations, integrity management, and risk assessment. In the Spring of 2023, I became manager of Risk Assessment for all of NiSource.

**DIRECT TESTIMONY
OF
BRYANT K. WONG**

Witness Direct Summary
Case No. PUR-2023-00119

Witness: Bryant K. Wong

Position: Lead Regulatory Analyst for Columbia Gas of Virginia, Inc.

Summary:

Company Witness Wong explains the Company's proposal to amend and extend its SAVE Plan for three years with authorization to spend up to \$69 million in 2024, to \$67 million in 2025, and \$73 million in 2026, as well as inclusion of the Company's Advanced LDAR Program costs in its SAVE Rider with a 10% annual spending variance and 10% cumulative spending variance. He discusses the derivation of the SAVE Rider rates proposed to be in effect for the first billing unit of January 2024.

Mr. Wong explains that the SAVE Rider rate calculations for 2024 proposed in this case are based on a \$69 million projected SAVE eligible capital program for 2024; deferred 2022 and projected 2024 costs associated with the Company's Advanced LDAR Program; and the true-up of the recovery of the actual SAVE cost of service for the calendar year 2022. The detailed support for these calculations as well as other required schedules and materials in compliance with the Commission's SAVE orders, including the Company's SAVE Annual Report, are contained in Attachments A and B to the Company's Application, which he sponsors.

Finally, Mr. Wong states that the Company is proposing no changes to the annual reporting requirements.

**DIRECT TESTIMONY
OF
BRYANT K. WONG
ON BEHALF OF
COLUMBIA GAS OF VIRGINIA, INC.
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2023-00119**

1 **Q. What is your name, position of employment, and business address?**

2 A. My name is Bryant K. Wong and I am a Lead Regulatory Analyst for Columbia Gas of
3 Virginia, Inc. ("CVA" or the "Company"). My business address is 1809 Coyote Drive,
4 Chester, Virginia 23836. A statement of my background and qualifications is attached
5 as Appendix A.

6 **Q. What are your responsibilities as Lead Regulatory Analyst?**

7 A. I am responsible for providing support for CVA's rate related activities, including the
8 preparation and support of regulatory filings with the Virginia State Corporation
9 Commission ("Commission").

10 **Q. Have you previously submitted testimony before this Commission?**

11 A. Yes. I was previously employed as a Principal Utility Specialist in the Division of
12 Utility Accounting and Finance for the Commission Staff. I have submitted testimony
13 in numerous base rate cases and rate adjustment clause proceedings before the
14 Commission.

15 **Q. What is the nature and scope of the Company's Application in this**
16 **proceeding?**

17 A. The Company is requesting (i) authorization to amend and extend its SAVE Plan for
18 three years, through 2026 ("Phase 5") and (ii) approval of a SAVE Rider for calendar

1 year 2024, inclusive of costs associated with the Company's Advanced Leak Detection
2 and Repair Program ("Advanced LDAR Program").

3 **Q. Mr. Wong, what is the purpose of your testimony in this proceeding?**

4 A. I will discuss the derivation of the SAVE Rider rates proposed to be in effect for the
5 first billing unit of January 2024 based on the Company's proposed SAVE eligible
6 expenditures. The SAVE Rider rate calculations for 2024 proposed in this case are
7 based on a \$69 million projected SAVE eligible capital program for 2024; deferred
8 2022 and projected 2024 costs associated with the Company's Advanced LDAR
9 Program; and the true-up of the recovery of the actual SAVE cost of service for the
10 calendar year 2022. The detailed support for the calculations described above as well
11 as other required schedules and materials in compliance with the Commission's SAVE
12 orders, including the Company's SAVE Annual Report, are contained in Attachments
13 A and B to this Application, which I am sponsoring and will refer to throughout my
14 testimony.

15 **Q. Please summarize the Company's SAVE Plan.**

16 A. As discussed in Company witness Roberts' testimony, the SAVE Plan is a program
17 designed to accelerate the replacement of certain components of CVA's gas system
18 infrastructure in order to enhance system safety and reliability. Consistent with the
19 SAVE Act,¹ in Case No. PUE-2011-00049 the Commission authorized the Company
20 to implement its Initial SAVE Plan in 2012, which was amended in 2013. The
21 Company's SAVE Plan was then amended and extended in Case No. PUE-2015-00071
22 for the five-year period 2016 through 2020 ("Phase 2 SAVE Plan"). The Phase 2 SAVE
23 Plan was later amended in 2017 and 2019. In 2020, the Company amended and

¹ Section 56-603 *et seq.* of the Code of Virginia.

1 extended the SAVE Plan for one additional year in Case No. PUR-2020-00138
2 ("Phase 3"). In 2021, the Company amended and extended the SAVE Plan for two
3 additional years (2022-2023) in Case No. PUR-2021-00145 ("Phase 4"). Under the
4 Phase 4 SAVE Plan, the Company is currently authorized to invest \$63 million in
5 2022 and \$72 million in 2023 of SAVE eligible capital expenditures with the ability
6 to exceed this investment level by a 10% margin.

7 **Q. Please summarize the proposed Phase 5 of CVA's SAVE Plan.**

8 A. As explained in the testimony of Company witness Roberts, the Company is proposing
9 to amend and extend its SAVE Plan for three years, through 2026. Under Phase 5 of
10 the SAVE Plan, the Company requests authorization to spend up to \$69 million in
11 2024, \$67 million in 2025, and \$73 million in 2026 for a total of \$209 million. The
12 Company requests authorization to exceed this investment by up to 10% on an annual
13 basis and 10% on a cumulative basis, for a Phase 5 maximum spend of \$229.9 million
14 (consisting of construction work in progress and cost of removal). Also as explained
15 in the testimony of Company witness Rowe, the Company requests authorization to
16 include Advanced LDAR Program costs in its Phase 5 SAVE Plan. Proposed Phase 5
17 of the SAVE Plan does not reflect any changes to the manner of calculating the SAVE
18 Rider cost recovery mechanism most recently approved by the Commission. The
19 calculation of the 2024 SAVE Rider will continue to be based on appropriate cost
20 causation principles in order to avoid any undue cross-subsidization between rate
21 classes.

22 2024 SAVE Rider

23 **Q. Please provide an overview of CVA's SAVE Rider.**

24 A. The costs incurred by replacing SAVE eligible natural gas infrastructure are recovered
25 through a SAVE Rider. The SAVE Rider, which is embodied in Section 20 of the

1 Company's General Terms and Conditions, is comprised of two components: the
2 Projected Factor and the True-up Factor. The two components collectively constitute
3 a single SAVE Rider, which is billed as a fixed charge each month. The SAVE Rider is
4 applicable to Rate Schedules RS, RTS, MPS, PDS, SGTS1/SGTS2/SGTS3,
5 SGS1/SGS2/SGS3, LGS1/LGS2, TS1/TS2, and EDS.

6 **Q. Please describe the classification of SAVE eligible costs and the**
7 **associated calculation of the Projected Factor for 2024.**

8 A. The SAVE Act identifies the following five elements as "eligible infrastructure
9 replacement costs:" Return on investment, a revenue conversion factor, depreciation,
10 property taxes, and carrying costs on the over- or under- recovery of the eligible
11 infrastructure replacement costs. The Company is proposing the same methodology
12 as used in Case No. PUR-2022-00126 to calculate the cost of service. Each element
13 of the cost of service is described in Attachment B, Schedule 21.

14 **Q. Why is the Company using the ratio of the base non-gas revenues for each**
15 **rate schedule to the total Company base non-gas revenue stipulated in the**
16 **Company's most recent rate case, PUR-2022-00036 ("2022 Rate Case"),**
17 **to allocate the SAVE Plan cost of service to determine the projected rate**
18 **applicable to each rate schedule?**

19 A. As approved by the Commission for the Phase 4 SAVE Plan, the Company has
20 allocated the Phase 5 SAVE Plan cost of service utilizing the ratio of base non-gas
21 revenue for each rate schedule to the total Company base non-gas revenue to satisfy
22 the SAVE Act requirements. Virginia Code § 56-604 C states that "[a]ny SAVE plan
23 and any SAVE rider that is submitted to and approved by the Commission shall be
24 allocated and charged in accordance with appropriate cost causation principles in
25 order to avoid any undue cross-subsidization between rate classes." Thus, by

1 allocating the Phase 5 SAVE Plan cost of service to each rate schedule based on that
2 rate schedule's cost of service recovery (the base non-gas revenue) as set forth in the
3 Stipulation in the 2022 Rate Case, subsidization between rate classes is avoided. The
4 Company continues to recover the same ratio of its cost of service from each rate
5 schedule after including the Phase 5 SAVE Plan cost of service elements as used for
6 the determination of base non-gas rates in the 2022 Rate Case.

7 **Q. How are the plant balances, depreciation, and deferred income taxes**
8 **shown in Attachment A, Schedule 11a determined?**

9 A. The Company is proposing the same methodology as used in Case No. PUR-2022-
10 00126 to calculate rate base. Each element of rate base is described in Attachment B,
11 Schedule 22.

12 **Q. How will the True-up Factor be calculated under the Phase 5 SAVE Plan?**

13 A. CVA will calculate the True-up Factor in the same manner as most recently approved
14 by the Commission. The True-up Factor will be calculated based on the prior year's
15 actual cost of service utilizing the same calculations and formulas used to calculate
16 the proposed Projected Factor. The resulting actual cost of service will be allocated
17 to each rate schedule utilizing the same non-gas revenue ratios discussed above for
18 the Projected Factor. However, the True-up Factor will be based on an average of the
19 actual monthly plant balances, accumulated depreciation, and accumulated deferred
20 income taxes. The monthly plant balances and accumulated depreciation will reflect
21 all SAVE Plan related plant retirements as recorded on the books of the Company.
22 The cost of capital will be pursuant to the Final Order in the 2022 Rate Case.
23 Depreciation rates were established in the Company's most recently submitted
24 depreciation study, which was accepted by Staff by letter dated June 23, 2020. The
25 revenue conversion factor will be updated using the prior year's total operating

1 revenues and bad debt expense. The property tax rate and retirement percentage rate
2 will be updated to reflect the most current effective tax rate for the applicable SAVE
3 Plan year.

4 The actual cost of service calculated in this manner will then be compared to the cost
5 recovered on an actual, as billed, basis via the Projected Factor. The resulting over-
6 or under-recovery of the SAVE Plan cost of service, plus or minus any under- or over-
7 application of the prior year's True-up Factor including carrying costs, will be divided
8 by the estimated number of customer bills for the True-up Factor billing period to
9 determine the current year's True-up Factor.

10 **Q. Did the Company make any corrections to its SAVE Rider based on**
11 **discovery in the 2022 Rate Case?**

12 A. Yes. As stated on Page 19 of the Direct Testimony of Staff witness Armstrong in the
13 2022 Rate Case, "the Company identified an error in its presentation of historical
14 SAVE investment, such that certain service lines that are not SAVE-eligible had been
15 inadvertently presented as SAVE-eligible investment." The Company has corrected
16 its in-service service line amounts within its workpapers, which resulted in a credit in
17 the True-Up Factor schedules. Also, as a result of this correction the Company has
18 revised its end-of-year deferral balances for 2019-2021² as reflected in Schedule 14.

19 **Q. Did the Company defer any 2022 Advanced LDAR costs in accordance**
20 **with the Stipulation in the 2022 Rate Case?**

21 A. Yes. As the Stipulation states, "...the Company can defer advanced mobile leak
22 detection costs, including carrying charges, in excess of the base rate baseline amount

² The error began in January 2019.

1 of \$1,351,835. The Company may propose recovery of any deferred advanced mobile
2 leak detection costs in a future SAVE amendment proceeding.”

3 The Company’s 2022 leak detection costs totaled \$1,527,565, and as such, the
4 Company has deferred \$175,730 in accordance with the Stipulation. The Company
5 requests recovery of this amount in the True-up Factor of its 2024 SAVE Rider.

6 **Q. Did the Company include any other costs associated with its Advanced**
7 **LDAR Program in its 2024 SAVE Rider?**

8 A. Yes. As described by Company witness Dan Rowe, the Company is proposing to
9 include costs associated with its Advanced LDAR Program in its SAVE Rider.
10 Specifically, the Company has included projected 2024 costs in the Projected Factor.

11 **Q. Please describe how the Company included the 2024 Advanced LDAR**
12 **Program costs in its Projected Factor.**

13 A. The Company developed Schedule ALDAR which details the Advanced LDAR
14 Program costs included in the Company’s 2024 SAVE Rider. First, for each calendar
15 year, the Company calculates whether the actual/projected costs of the contracted
16 driver and annual vehicle maintenance fee are above the baselines set in the 2022
17 Rate Case, respectively. Any costs above the respective baselines are included in the
18 SAVE Rider. Next, the Company determines the level of any additional costs not
19 included in base rates, such as the costs of: additional vehicles/software, additional
20 vehicle maintenance fees, additional drivers, and additional detections and repairs.
21 These costs are explained in further detail by Company witness Rowe. Finally, the
22 Company calculates the jurisdictional revenue requirement of the costs and includes
23 it as a separate line item in Schedule 10.

1 **Q. Does the Company intend to continue to file an annual SAVE Report?**

2 A. Yes. Consistent with Virginia Code § 56-604 E and the Final Order approving the
3 Initial SAVE Plan, the Company will file an annual SAVE Report no later than August
4 15. The SAVE Report will provide the calculation of the True-up Factor for the
5 previous SAVE Plan year and the Projected Factor for the upcoming SAVE Plan year
6 and the resulting SAVE Rider. In addition, the annual SAVE Report will contain other
7 statistical and narrative information required by the Commission.

8 **Q. What will be the impact of the SAVE Rider on customer bills?**

9 A. The 2024 SAVE Rider will increase the annual bill for an average residential customer
10 using 64.9 Dth per year, by \$21.24, or 1.6%, when compared to the rates in effect on
11 June 29, 2023.

12 Summary

13 **Q. Please provide a summary of your testimony.**

14 A. The Company is proposing to amend and extend its SAVE Plan for three years with
15 authorization to spend up to \$69 million in 2024, \$67 million in 2025, and \$73
16 million in 2026 of SAVE eligible investment, as well as inclusion of the Company's
17 Advanced LDAR Program costs in its SAVE Rider, with a 10% annual spending
18 variance and 10% cumulative spending variance. My testimony supports derivation
19 of the SAVE Rider rates to be in effect for the first billing unit of January 2024 based
20 on the Company's proposed SAVE eligible capital expenditures and Advanced LDAR
21 Program costs. The Company is proposing no changes to the annual reporting
22 requirements.

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

24 A. Yes it does.

APPENDIX A

**BACKGROUND AND QUALIFICATIONS
OF
BRYANT K. WONG**

I graduated from James Madison University in 2015 with a Bachelor of Business Administration degree, majoring in accounting. My career with CVA began in June 2021 as a Lead Regulatory Analyst. My responsibilities include providing support for CVA's rate related activities, including the preparation and support of regulatory filings with the Commission. Prior to my employment with CVA, I worked for the Virginia State Corporation Commission in the Division of Utility Accounting and Finance from 2015 to 2021 as a utility accountant. My responsibilities included reviewing and providing testimony before the Commission on various regulatory/rate applications for electric, natural gas, and water utilities.

ATTACHMENT A

SCHEDULES 1 - 17

&

SCHEDULE ALDAR

Schedule 1

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-00119

Total 2024 SAVE Revenue Requirement

Line No.	Description	Amount
1	2022 True-up Factor Revenue Requirement (Sch 2, Line 12)	\$ (535,548)
2	2024 Projected Factor Revenue Requirement (Sch 10, Line 5)	<u>\$ 12,419,565</u>
3	Total 2024 SAVE Revenue Requirement	<u>\$ 11,884,017</u>

Schedule 2

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Revenue Requirement for Calendar Year 2022

Line No.	Description	Amount
1	Actual Cumulative Under/(Over) Recovery Balance as of December 31, 2021 (Sch 14, Line 10)	\$ (284,710)
2	Return on Investment (Sch 3, Line 11 + 22)	\$ 8,695,283
3	Depreciation Expense (Sch 4, Line 11)	\$ 1,918,602
4	Property Tax Expense (Sch 5, Line 10)	\$ 488,142
5	Advanced Leak Detection & Repair Costs (Sch ALDAR, Line 21)	\$ 164,957
6	Carrying Costs on Monthly Under/(Over) Collection Balances (Sch 6, Line 21)	<u>\$ (78,278)</u>
7	VA Jurisdictional Actual Revenue Requirement - Calendar Year 2022 (Lines 2 + 3 + 4 + 5 + 6)	\$ 11,188,705
8	Projected Factor Actual Revenue (Collections) - Calendar Year 2022 (Sch 9, Line 13)	<u>\$ (11,440,788)</u>
9	Actual Under/(Over) Collections - Calendar Year 2022 (Lines 7 + 8)	\$ (252,082)
10	True-up Factor Actual Revenue Credits/(Collections) - Calendar Year 2022 (Sch 9, Line 13)	\$ (467,094)
11	True-up Factor Projected Revenue Credits/(Collections) - Calendar Year 2023 (PUR-2022-00126, Sch 2, Line 11)	<u>\$ 468,339</u>
12	2022 True-up Factor Revenue Requirement (Lines 1 + 9 + 10 + 11)	<u><u>\$ (535,548)</u></u>

Schedule 3

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Return on Investment for January through December 2022

Line No.	Description	(1)	(2)	(3)	(4)	(5)
January 2022 through September 2022						
1	Average Net Rate Base (Sch 3a, Line 17)	\$ 99,143,353				
					Effective Income Tax Rate (Sch 8, Line 7)	Income Tax Savings
	<i>Cost of Capital:</i>					
		Weighted Cost Rate (a)	Total Cost (b)		(c)	(d)
2	Short Term Debt	0.177%	\$ 175,484		25.74%	\$ (45,170)
3	Long Term Debt	2.725%	\$ 2,701,656		25.74%	\$ (695,406)
4	Job Development Credits - Debt	0.004%	\$ 3,966		25.74%	\$ (1,021)
5	Common Equity	3.595%	\$ 3,564,204		0.00%	\$ -
6	Preferred Stock	0.179%	\$ 177,467		0.00%	\$ -
7	Job Development Credits - Equity	0.002%	\$ 1,983		0.00%	\$ -
8	Total	6.682%	\$ 6,624,759			\$ (741,597)
9	Required Operating Income (Line 8, Col 3 + Col 5)					\$ 5,883,162
10	Divided by: Revenue Conversion Factor (Sch 7, Line 7)					74.05%
11	Revenue Requirement - Return on Investment					\$ 7,945,264

October 2022 through December 2022						
12	Average Net Rate Base (Sch 3a, Line 17)	\$ 9,178,672				
					Effective Income Tax Rate (Sch 8, Line 7)	Income Tax Savings
	<i>Cost of Capital:</i>					
		Weighted Cost Rate (a)	Total Cost (b)		(c)	(d)
13	Short Term Debt	0.048%	\$ 4,415		25.74%	\$ (1,136)
14	Long Term Debt	2.438%	\$ 223,730		25.74%	\$ (57,588)
15	Job Development Credits - Debt	0.002%	\$ 165		25.74%	\$ (43)
16	Common Equity	0.743%	\$ 68,179		0.00%	\$ -
17	Preferred Stock	3.459%	\$ 317,490		0.00%	\$ -
18	Job Development Credits - Equity	0.002%	\$ 147		0.00%	\$ -
19	Total	6.691%	\$ 614,127			\$ (58,767)
20	Required Operating Income (Line 8, Col 3 + Col 5)					\$ 555,360
21	Divided by: Revenue Conversion Factor (Sch 7, Line 7)					74.05%
22	Revenue Requirement - Return on Investment					\$ 750,018

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001182024 SAVE True-Up Factor
Actual Net Rate Base for Calendar Year 2022

Line No	Description	Cumulative Balance as of Dec-21 (1)	Jan-22 (2)	Feb-22 (3)	Mar-22 (4)	Apr-22 (5)	May-22 (6)	Jun-22 (7)	Jul-22 (8)	Aug-22 (9)	Sep-22 (10)	ReD-In CWP as of 9/30/2022 (11)	Oct-22 (12)	Nov-22 (13)	Dec-22 (14)	Totals (15)
SAVE Investment																
1	Jurisdictional Plant in Service (Accts 376, 378, 380, 387, & 383.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2	Jurisdictional CWP (Accts 376, 378, 380, 387, & 383.3)	\$ 124,330,187	\$ 1,123,300	\$ 1,875,757	\$ 2,535,017	\$ 3,663,104	\$ 4,785,907	\$ 6,067,288	\$ 6,994,523	\$ 10,579,237	\$ 6,213,483	\$ 24,879,116	\$ 10,539,214	\$ 4,560,450	\$ 4,560,478	\$ 4,560,478
3	Jurisdictional Retirements	\$ (10,143,103)	\$ (258,259)	\$ (84,836)	\$ (477,054)	\$ (218,032)	\$ (739,362)	\$ (211,142)	\$ (218,904)	\$ (469,776)	\$ (261,309)	\$ -	\$ (275,574)	\$ (530,424)	\$ (605,744)	\$ (605,744)
4	Additions Net of Retirements	\$ 114,187,084	\$ 865,136	\$ 1,790,921	\$ 2,047,963	\$ 3,445,072	\$ 4,496,545	\$ 7,656,127	\$ 6,775,619	\$ 10,109,461	\$ 5,981,178	\$ 24,879,116	\$ 10,162,641	\$ 4,050,026	\$ 3,954,734	\$ 3,954,732
5	SAVE Investment Monthly Balance	\$ 114,187,084	\$ 110,052,222	\$ 110,543,040	\$ 110,891,003	\$ 122,366,076	\$ 126,862,621	\$ 134,710,748	\$ 141,496,667	\$ 151,600,128	\$ 157,481,306	\$ 24,879,116	\$ 35,041,757	\$ 36,091,783	\$ 42,991,514	\$ 42,991,514
6	Two-Month Average SAVE Investment		\$ 9,561,636	\$ 9,862,303	\$ 8,822,252	\$ 10,052,376	\$ 10,364,529	\$ 10,660,224	\$ 11,606,676	\$ 12,212,369	\$ 12,677,960		\$ 2,496,703	\$ 3,069,087	\$ 3,420,137	\$ 105,978,963
Accumulated Depreciation																
7	Monthly Depreciation Expense	\$ (3,362,030)	\$ (192,784)	\$ (198,221)	\$ (186,418)	\$ (201,563)	\$ (203,599)	\$ (210,680)	\$ (218,063)	\$ (226,436)	\$ (231,881)		\$ (3,248)	\$ (7,462)	\$ (21,632)	
8	Jurisdictional Retirements	\$ 10,143,103	\$ 258,259	\$ 84,836	\$ 477,054	\$ 218,032	\$ 739,362	\$ 211,142	\$ 218,904	\$ 469,776	\$ 261,309		\$ 375,574	\$ 530,424	\$ 605,744	
9	Cost of Removal	\$ 6,434,782	\$ 67,070	\$ 42,698	\$ 91,288	\$ 202,431	\$ 169,333	\$ 160,381	\$ 158,293	\$ 194,112	\$ 122,724		\$ 183,972	\$ 144,805	\$ 177,416	
10	Monthly Accumulated Depreciation Activity	\$ 13,215,829	\$ 132,564	\$ (67,417)	\$ 369,925	\$ 218,869	\$ 233,125	\$ 180,663	\$ 156,606	\$ 437,453	\$ 242,148		\$ 556,296	\$ 607,627	\$ 760,528	
11	Accumulated Depreciation	\$ 13,215,829	\$ 13,348,393	\$ 13,280,976	\$ 13,650,901	\$ 13,869,800	\$ 14,102,925	\$ 14,283,588	\$ 14,420,363	\$ 14,857,846	\$ 15,099,994		\$ 556,296	\$ 1,224,125	\$ 1,900,653	
12	Two-Month Average Accumulated Depreciation		\$ 1,106,643	\$ 1,109,557	\$ 1,122,182	\$ 1,146,686	\$ 1,163,530	\$ 1,181,836	\$ 1,195,168	\$ 1,219,927	\$ 1,248,243		\$ 23,179	\$ 74,184	\$ 133,849	\$ 10,737,374
13	ADIT	\$ (10,086,866)	\$ (10,246,378)	\$ (10,433,652)	\$ (10,628,213)	\$ (10,845,063)	\$ (11,116,411)	\$ (11,400,842)	\$ (11,800,616)	\$ (12,179,669)	\$ (12,363,261)		\$ (251,376)	\$ (644,686)	\$ (1,113,126)	
14	Two-Month Average ADIT		\$ (847,367)	\$ (861,751)	\$ (877,576)	\$ (894,720)	\$ (915,020)	\$ (938,177)	\$ (968,727)	\$ (999,185)	\$ (1,023,486)		\$ (10,474)	\$ (24,637)	\$ (80,743)	\$ (8,419,967)
15	Two-Month Average Net Rate Base (Lines 6 + 12 + 14)		\$ 8,811,173	\$ 8,910,108	\$ 10,668,636	\$ 10,304,354	\$ 10,635,040	\$ 11,142,885	\$ 11,737,414	\$ 12,433,105	\$ 13,102,337		\$ 2,509,406	\$ 3,136,245	\$ 3,493,344	\$ 106,284,350
16	Pension Adjustment		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 24,660	\$ 12,861	\$ 387	\$ 37,670
17	Net Rate Base (Line 15 + Line 16)		\$ 8,811,173	\$ 8,910,108	\$ 10,668,636	\$ 10,304,354	\$ 10,635,040	\$ 11,142,885	\$ 11,737,414	\$ 12,433,105	\$ 13,102,337		\$ 2,534,066	\$ 3,150,936	\$ 3,493,740	\$ 106,322,020
Twelve-month Totals of Two-month Average Net Rate Base																\$ 106,322,020

Note: Columbia uses CWP to determine Rate Base

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Prorated ADIT for Calendar Year 2022

Line No	Description	Cumulative Balance as of 12/31/2021	Roll-In 9/30/2022												Calculation for 2022
		(1)	Jan-22 (2)	Feb-22 (3)	Mar-22 (4)	Apr-22 (5)	May-22 (6)	Jun-22 (7)	Jul-22 (8)	Aug-22 (9)	Sep-22 (10)	Oct-22 (11)	Nov-22 (12)	Dec-22 (13)	
1	Accumulated Deferred Income Taxes	\$ 2,876,579	\$ 3,026,478	\$ 3,178,373	\$ 3,326,269	\$ 3,476,186	\$ 3,628,082	\$ 3,775,959	\$ 3,925,856	\$ 4,075,752	\$ 4,225,649	\$ 80,608	\$ 161,216	\$ 241,823	\$ 120,912
2	Rate Year Monthly Activity		\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 149,897	\$ 80,608	\$ 80,608	\$ 80,608	
3	Multiplied by: Proration Factors											67.39130%	34.78261%	1.08698%	
4	Prorated ADIT Activity											\$ 54,323	\$ 28,037	\$ 876	
5	Prorated ADIT Balances	\$ 2,876,579	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 54,323	\$ 82,360	\$ 83,236	\$ 83,236
6	Normalization Loss Adjustment		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24,588	\$ 12,691	\$ 397	\$ 37,675

Schedule 4

Columbia Gas of Virginia, Inc.

Case No. PUR-2023-00119

**2024 SAVE True-Up Factor
Depreciation Expense for Calendar Year 2022**

Line No.	Description	Amount
1	Depreciation Expense - Account 376: Distribution Mains (Sch 4a, Line 4)	\$ 1,255,145
2	Depreciation Expense - Account 378: M&R (Sch 4a, Line 8)	\$ 32,298
3	Depreciation Expense - Account 303.30: Intangible, Software (Sch 4a, Line 12)	\$ -
4	Depreciation Expense - Account 380: Services (Sch 4a, Line 16)	\$ 625,790
5	Depreciation Expense - Account 387: M&R (Sch 4a, Line 20)	\$ (157)
6	Total Depreciation Expense (Sch 4a, Line 21)	\$ 1,913,076
7	Multiplied by: Effective Income Tax Rate (Sch 8, Page 1, Line 7)	<u>25.74%</u>
8	Income Tax Savings	\$ (492,426)
9	Required Operating Income (Lines 6 + 8)	<u>\$ 1,420,651</u>
10	Divided by: Revenue Conversion Factor (Sch 7, Line 7)	<u>74.05%</u>
11	Revenue Requirement - Depreciation Expense	<u><u>\$ 1,918,602</u></u>

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 BAVE True-Up Factor
Actual Monthly Depreciation Expense for Calendar Year 2022

Line No	Description	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Roll-In Oct-22	Nov-22	Dec-22	Total
Account 376: Distribution Mains (Net of Retirements)														
1	Prior Month Depreciable Plant Balance	\$ 89,352,861	\$ 89,960,311	\$ 91,138,487	\$ 91,491,116	\$ 92,185,182	\$ 94,009,400	\$ 96,180,961	\$ 100,735,133	\$ 104,334,608	\$ -	\$ 2,621,794	\$ 2,669,908	
2	Current Month Depreciable Plant Activity	\$ 807,650	\$ 1,176,156	\$ 354,848	\$ 704,086	\$ 1,814,219	\$ 2,171,261	\$ 4,593,472	\$ 3,596,473	\$ 1,078,768	\$ 2,921,794	\$ 48,112	\$ 11,637,843	
3	Multiplied by Depreciation Rate	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	
4	Account 376 Depreciation Expense	\$ 129,255	\$ 130,541	\$ 131,644	\$ 132,407	\$ 134,222	\$ 137,095	\$ 141,944	\$ 147,822	\$ 151,191	\$ 2,106	\$ 4,247	\$ 12,870	\$ 1,253,146
Account 378: M&R (Net of Retirements)														
5	Prior Month Depreciable Plant Balance	\$ 1,804,276	\$ 1,804,276	\$ 1,804,276	\$ 1,804,276	\$ 1,804,276	\$ 1,804,276	\$ 1,804,023	\$ 1,804,023	\$ 1,804,023	\$ -	\$ (17,526)	\$ (17,526)	
6	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (253)	\$ -	\$ -	\$ (11,726)	\$ (17,526)	\$ -	\$ 4,713,258	
7	Multiplied by Depreciation Rate	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	
8	Account 378 Depreciation Expense	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,142	\$ 3,132	\$ (15)	\$ (31)	\$ 4,074	\$ 32,298
Account 303 30: Intangible Plant, Misc Software														
9	Prior Month Depreciable Plant Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
11	Multiplied by Depreciation Rate	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	
12	Account 303 30 Depreciation Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Account 380: Services (Net of Retirements)														
13	Prior Month Depreciable Plant Balance	\$ 19,238,917	\$ 19,510,430	\$ 19,990,600	\$ 20,853,910	\$ 21,518,689	\$ 22,259,644	\$ 23,070,949	\$ 23,763,447	\$ 24,658,808	\$ -	\$ 742,368	\$ 1,301,870	
14	Current Month Depreciable Plant Activity	\$ 271,513	\$ 480,170	\$ 663,309	\$ 684,759	\$ 741,175	\$ 810,705	\$ 712,896	\$ 675,362	\$ 463,512	\$ 742,368	\$ 569,302	\$ 533,105	
15	Multiplied by Depreciation Rate	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	
16	Account 380 Depreciation Expense	\$ 60,364	\$ 61,556	\$ 63,649	\$ 66,031	\$ 68,222	\$ 70,640	\$ 73,014	\$ 75,489	\$ 77,576	\$ 1,107	\$ 3,165	\$ 4,688	\$ 625,790
Account 387: M&R (Net of Retirements)														
17	Prior Month Depreciable Plant Balance	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ (8,919)	\$ -	\$ -	\$ -	
18	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
19	Multiplied by Depreciation Rate	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	
20	Account 387 Depreciation Expense	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ -	\$ -	\$ -	\$ (157)
21	Total (Lines 4 + 8 + 12 + 16 + 20)	\$ 192,784	\$ 185,221	\$ 195,418	\$ 201,583	\$ 205,568	\$ 210,840	\$ 218,083	\$ 226,436	\$ 231,881	\$ 3,248	\$ 7,402	\$ 21,632	\$ 1,813,076

Note: The Depreciation methodology should be consistent with how the Company accounts for Depreciation expense on its books.

Note: The Depreciable Plant balance should exclude CUMP.

Note: The Company added Lines 2, 6, 10, 14, & 18 to show the current month activity which receives a half month of depreciation.

Schedule 5

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Property Tax Expense for Calendar Year 2022

Line No.	Description	Amount
1	VA Jurisdictional SAVE Investment (Sch 3a, Line 5)	\$ 114,187,084
2	Property Tax Rate (Sch 5a, Line 9)	<u>0.5683%</u>
3	2022 Annual Property Tax Expense	\$ 648,982
4	Multiplied by: Effective Income Tax Rate (Sch 8, Line 7)	<u>25.74%</u>
5	Income Tax Savings	<u>\$ (167,048)</u>
6	Required Operating Income (Lines 3 + 5)	\$ 481,934
7	Divided by: Revenue Conversion Factor (Sch 7, Page 1, Line 7)	<u>74.05%</u>
8	Revenue Requirement - Property Tax Expense	\$ 650,856
9	Ratio of Pre-roll-in Months to 12	<u>75.00%</u>
10	Revenue Requirement - Property Tax Expense	<u>\$ 488,142</u>

Note: Post roll-in amounts through Dec. 31 excluded from revenue requirement.

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Property Tax Rate Calculation for Calendar Year 2022

Line No.	Acct No.	Description	Total Co. 12/31/2021 Balance	Juris. Factor [4]	Juris. 12/31/2021 Balance
1	101	Gross Plant in Service (Excl. CIAC) [1]	\$ 1,551,297,790	90.536%	\$ 1,404,482,967
2	106	Completed Construction Not Classified [1]	\$ 44,308,515	90.536%	\$ 40,115,157
3	107	Construction Work In Progress	\$ 3,037,689	90.536%	\$ 2,750,202
4	154	Materials and supplies [1]	\$ 656,743	90.782%	\$ 596,204
5	164.1	Firm Storage Service [2]	\$ 12,180,590	93.902%	\$ 11,437,818
6	164.2	LNG Storage Service	\$ 797,094	93.902%	\$ 748,487
7		Total Plant For Property Taxes			\$ 1,460,130,836
8		Property Tax Expense At 12/31/22 [3]	\$ 9,141,296	90.782%	\$ 8,298,651
9		Effective Rate (Line 8 / Line 7)			<u>0.5683%</u>

[1] From the 12/31/2021 Financial Statement

[2] Percent of Total Storage Subject to Tax

[3] From the 12/31/2022 Financial Statement

[4] Schedule 40a Case No. PUR-2022-00036

Schedule 6

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE True-Up Factor
Carrying Costs on Under(Over) Recovery Balances for Calendar Year 2022

Carrying Costs on Under(Over) Recovery Balances for Calendar Year 2022																	
Line No	Description	Cost of Capital Effective Dates		Roll-In 8/31/2022												Total	
		Feb 2019	Oct 2022	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22		Dec-22
				(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Two-Month Average Net Rate Base (Sch 3e, Line 17)				\$ 9,811,173	\$ 9,910,106	\$ 10,069,836	\$ 10,304,354	\$ 10,635,040	\$ 11,142,985	\$ 11,737,414	\$ 12,433,105	\$ 13,102,337	\$ 2,533,996	\$ 3,150,936	\$ 3,493,740	
2	Weighted Average Cost of Capital	8.682%	8.691%		\$ 655,563	\$ 662,163	\$ 672,666	\$ 686,537	\$ 710,833	\$ 744,574	\$ 784,294	\$ 830,780	\$ 878,496	\$ 189,545	\$ 210,823	\$ 233,759	
3	Deductible Interest x Effective Tax Rate	0.745%	0.640%		\$ (73,366)	\$ (74,128)	\$ (75,300)	\$ (77,077)	\$ (79,551)	\$ (83,350)	\$ (87,709)	\$ (93,000)	\$ (98,006)	\$ (18,224)	\$ (20,174)	\$ (22,399)	
4	Return on Net Rate Base (Lines 2 + 3)				\$ 582,195	\$ 588,035	\$ 597,366	\$ 611,460	\$ 631,083	\$ 661,224	\$ 696,496	\$ 737,780	\$ 777,492	\$ 153,321	\$ 190,649	\$ 211,360	
5	Depreciation (Net of Tax) (Sch 4e, Line 21 x (1-Tax Rate))				\$ 143,147	\$ 144,971	\$ 147,343	\$ 149,681	\$ 152,858	\$ 156,585	\$ 161,848	\$ 168,151	\$ 172,195	\$ 2,412	\$ 5,497	\$ 16,064	
6	Property Tax (Net of Tax) (Sch 5, Line 6)				\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ 40,161	\$ -	\$ -	\$ -	
7	Advanced Leak Detection & Repair O&M (Net of Tax) (Sch ALDAR, Line 16)				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,144
8	Total SAVE Costs (Lines 4 + 5 + 6 + 7)				\$ 765,502	\$ 773,198	\$ 784,872	\$ 801,302	\$ 823,869	\$ 857,970	\$ 898,607	\$ 946,092	\$ 988,648	\$ 155,732	\$ 193,145	\$ 349,506	
9	Divided by Revenue Conversion Factor (Sch 7, Line 7)				74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%
10	Total SAVE Cost Revenue Requirement				\$ 1,033,818	\$ 1,044,211	\$ 1,059,977	\$ 1,082,185	\$ 1,112,684	\$ 1,158,686	\$ 1,213,577	\$ 1,277,706	\$ 1,336,799	\$ 210,316	\$ 254,868	\$ 472,136	
11	Customer Collections (Sch 9)				\$ (1,304,563)	\$ (1,306,938)	\$ (1,309,853)	\$ (1,308,883)	\$ (1,310,026)	\$ (1,309,675)	\$ (1,309,027)	\$ (1,317,315)	\$ (1,313,202)	\$ (36,106)	\$ (36,105)	\$ (36,178)	
12	Under(Over) Collection (Lines 10 + 11)				\$ (270,745)	\$ (264,727)	\$ (248,875)	\$ (226,726)	\$ (197,344)	\$ (150,978)	\$ (95,449)	\$ (38,509)	\$ 23,598	\$ 171,211	\$ 223,791	\$ 432,958	
13	Cumulative Under(Over) Recovery Balances (1/231/21 bal + Line 12)			\$ (264,710)	\$ (595,456)	\$ (820,182)	\$ (1,069,056)	\$ (1,295,786)	\$ (1,493,130)	\$ (1,644,109)	\$ (1,738,558)	\$ (1,779,167)	\$ (1,758,566)	\$ (1,584,358)	\$ (1,359,567)	\$ (828,600)	
14	Deferred Tax Asset / (Liability) on Under(Over) Recovery Balance - Starting 2021			\$ 73,284	\$ 142,974	\$ 211,115	\$ 273,175	\$ 333,535	\$ 384,332	\$ 425,194	\$ 447,762	\$ 457,658	\$ 451,884	\$ 407,814	\$ 349,065	\$ 238,252	
15	Net Under(Over) Recovery Balances			\$ (211,426)	\$ (412,461)	\$ (606,067)	\$ (793,882)	\$ (962,251)	\$ (1,109,796)	\$ (1,220,915)	\$ (1,291,796)	\$ (1,321,506)	\$ (1,303,686)	\$ (1,176,544)	\$ (1,008,672)	\$ (687,357)	
16	Two-Month Average Under(Over) Recovery Balances				\$ (23,996)	\$ (42,555)	\$ (58,456)	\$ (73,172)	\$ (85,294)	\$ (97,071)	\$ (104,896)	\$ (106,875)	\$ (109,371)	\$ (103,343)	\$ (91,956)	\$ (70,676)	
17	Multiplied by Weighted Cost of Capital	8.682%	8.691%		\$ (1,737)	\$ (2,844)	\$ (3,805)	\$ (4,880)	\$ (5,785)	\$ (6,486)	\$ (6,966)	\$ (7,275)	\$ (7,308)	\$ (8,914)	\$ (8,063)	\$ (4,729)	
18	Deductible Interest x Effective Tax Rate	0.745%	0.640%		\$ 194	\$ 318	\$ 437	\$ 547	\$ 645	\$ 726	\$ 783	\$ 814	\$ 818	\$ 662	\$ 583	\$ 453	
19	Carrying Costs on Under(Over) Recovery (Lines 17 + 18)				\$ (1,543)	\$ (2,526)	\$ (3,468)	\$ (4,342)	\$ (5,121)	\$ (5,760)	\$ (6,213)	\$ (6,461)	\$ (6,490)	\$ (8,253)	\$ (5,510)	\$ (4,276)	
20	Divided by Revenue Conversion Factor (Sch 7, Line 7)				74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%	74.05%
21	Total Carrying Costs Revenue Requirement				\$ (2,083)	\$ (3,411)	\$ (4,888)	\$ (6,884)	\$ (8,816)	\$ (11,778)	\$ (15,390)	\$ (19,728)	\$ (24,865)	\$ (34,444)	\$ (47,441)	\$ (65,776)	\$ (79,278)

Schedule 7

Columbia Gas of Virginia, Inc.

Case No. PUR-2023-00119

**2024 SAVE True-Up Factor
Revenue Conversion Factor for 2022**

Line No.	Description	Amount
1	Total Amount	100.00%
2	Multiplied by: 1 - Uncollectible Percentage	<u>99.71%</u>
3	Subtotal	99.71%
4	Multiplied by: 1 - Federal Income Tax Rate	<u>79.00%</u>
5	Subtotal	78.77%
6	Multiplied by: 1 - State Income Tax Rate	<u>94.00%</u>
7	Revenue Conversion Factor	<u><u>74.05%</u></u>

Schedule 7a

Page 1 of 1

Columbia Gas of Virginia, Inc.

Case No. PUR-2023-00119

Uncollectible Percentage Calculation for Calendar Year 2022

Line No.	Description	Amount
1	Total 2022 Jurisdictional Revenues	\$ 420,598,352
2	Total 2022 Jurisdictional Bad Debt Expense	<u>\$ 1,211,237</u>
3	2022 Jurisdictional Bad Debt Expense %	<u><u>0.2880%</u></u>

Schedule 8

Columbia Gas of Virginia, Inc.

Case No. PUR-2023-00119

Effective Tax Rate Calculation

Line No.	Description	Amount
1	Total Amount	100.00%
2	Less: State Income Tax Rate	<u>6.00%</u>
3	Subtotal	94.00%
4	Multiplied by: Federal Income Tax Rate	<u>21.00%</u>
5	Effective Federal Income Tax Rate	19.74%
6	Plus: State Income Tax Rate	<u>6.00%</u>
7	Effective Tax Rate	<u>25.74%</u>

Note: Effective tax rate should be calculated using updated tax rates and apportionment factors for the true-up period.

Schedule 9

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-00119

Actual Revenue Collections for Calendar Year 2022

Line No.	Month	Year	Actual Projected Factor Revenue Collections	Actual True-Up Factor Revenue Collections	Actual True-Up Factor Interest Collections	Total Actual Revenue Collections
1	January	2022	\$ 1,265,835	\$ (60,016)	\$ 98,743	\$ 1,304,563
2	February	2022	\$ 1,270,096	\$ (60,255)	\$ 99,097	\$ 1,308,938
3	March	2022	\$ 1,270,024	\$ (60,277)	\$ 99,106	\$ 1,308,853
4	April	2022	\$ 1,270,056	\$ (60,258)	\$ 99,096	\$ 1,308,893
5	May	2022	\$ 1,271,158	\$ (60,312)	\$ 99,182	\$ 1,310,028
6	June	2022	\$ 1,270,815	\$ (60,296)	\$ 99,155	\$ 1,309,675
7	July	2022	\$ 1,270,185	\$ (60,262)	\$ 99,104	\$ 1,309,027
8	August	2022	\$ 1,278,226	\$ (60,645)	\$ 99,735	\$ 1,317,315
9	September	2022	\$ 1,274,239	\$ (60,466)	\$ 99,429	\$ 1,313,202
10	October	2022	\$ 109	\$ (60,505)	\$ 99,502	\$ 39,106
11	November	2022	\$ 14	\$ (60,650)	\$ 99,741	\$ 39,105
12	December	2022	\$ 33	\$ (60,734)	\$ 99,879	\$ 39,178
13			<u>\$ 11,440,788</u>	<u>\$ (724,675)</u>	<u>\$ 1,191,769</u>	<u>\$ 11,907,882</u>

Note: The Projected Factor was set to zero effective with the roll-in of SAVE investment to base rates, 9-28-2022.
Remaining small amounts in October through December 2022 are the result of subsequent billing adjustments.

Schedule 10

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-00119**2024 SAVE Projected Factor
Projected Revenue Requirement for Calendar Year 2024**

Line No.	Description	Amount
1	Return on Investment (Sch 11, Line 11)	\$ 9,228,206
2	Depreciation Expense (Sch 12, Line 11)	\$ 2,119,808
3	Property Tax Expense (Sch 13, Line 8)	\$ 513,400
4	Advanced Leak Detection & Repair - O&M (Sch ALDAR, Line 21)	\$ 558,151
5	2024 Projected Factor Revenue Requirement	<u>\$ 12,419,565</u>

Schedule 11

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE Projected Factor
Projected Return on Investment for Calendar Year 2024

Line No.	Description	(1)	(2)	(3)	(4)	(5)
1	Average Net Rate Base (Sch 11a, Line 17)	\$ 112,934,172				
					Effective Income Tax Rate (Sch 8, Line 7)	Income Tax Savings
	<i>Cost of Capital:</i>					
		(a)	(b)	(c)		(d)
2	Short Term Debt	0.048%	\$ 54,321	25.74%		\$ (13,982)
3	Long Term Debt	2.438%	\$ 2,752,770	25.74%		\$ (708,563)
4	Job Development Credits - Debt	0.002%	\$ 2,033	25.74%		\$ (523)
5	Common Equity	0.743%	\$ 838,875	0.00%		\$ -
6	Preferred Stock	3.459%	\$ 3,906,393	0.00%		\$ -
7	Job Development Credits - Equity	0.002%	\$ 1,807	0.00%		\$ -
8	Total	6.691%	7,556,200			\$ (723,069)
9	Required Operating Income (Line 8, Col 3 + Col 5)					\$ 6,833,131
10	Divided by: Revenue Conversion Factor (Sch 7, Page 1, Line 7)					74.05%
11	Revenue Requirement - Return on Investment					<u>\$ 9,228,206</u>

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001182024 SAGE Projected Factor
Projected Net Rate Base for Calendar Year 2024

Line No	Description	Cumulative Balance as of Dec-23 (1)	Jan-24 (2)	Feb-24 (3)	Mar-24 (4)	Apr-24 (5)	May-24 (6)	Jun-24 (7)	Jul-24 (8)	Aug-24 (9)	Sep-24 (10)	Oct-24 (11)	Nov-24 (12)	Dec-24 (13)	Totals (14)
SAVE Investment															
1	Jurisdictional Plant in Service (Accts 376, 378, 380, 387, & 303.3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2	Jurisdictional CWIP (Accts 376, 378, 380, 387, & 303.3)	\$ 95,125,681	\$ 3,788,072	\$ 1,668,854	\$ 2,028,874	\$ 2,384,894	\$ 2,668,375	\$ 6,916,575	\$ 4,009,301	\$ 3,555,498	\$ 3,226,324	\$ 6,129,962	\$ 2,277,899	\$ 26,125,548	\$ 26,125,548
3	Jurisdictional Retirements	\$ (8,057,071)	\$ (284,838)	\$ (193,087)	\$ (291,696)	\$ (208,736)	\$ (302,842)	\$ (504,540)	\$ (379,159)	\$ (353,158)	\$ (328,946)	\$ (696,903)	\$ (274,019)	\$ (1,222,730)	\$ (1,222,730)
4	Additions Net of Retirements	\$ 90,071,611	\$ 3,503,234	\$ 1,475,767	\$ 1,735,178	\$ 2,174,958	\$ 2,655,534	\$ 6,412,035	\$ 3,630,142	\$ 3,202,340	\$ 2,897,378	\$ 5,432,959	\$ 2,003,880	\$ 24,902,817	\$ 24,902,817
5	SAVE Investment Monthly Balances	\$ 90,071,611	\$ 63,575,448	\$ 65,049,215	\$ 66,784,393	\$ 68,959,349	\$ 101,514,883	\$ 107,928,917	\$ 111,557,059	\$ 114,759,400	\$ 117,659,778	\$ 126,192,777	\$ 127,196,657	\$ 152,009,474	\$ 152,009,474
6	Two-Month Average SAVE Investment		\$ 7,651,961	\$ 7,859,381	\$ 7,993,067	\$ 8,155,869	\$ 8,353,093	\$ 8,728,742	\$ 9,145,168	\$ 9,429,652	\$ 9,684,132	\$ 10,116,856	\$ 10,518,226	\$ 11,637,339	\$ 109,271,785
Accumulated Depreciation															
7	Monthly Depreciation Expense	\$ (949,075)	\$ (135,770)	\$ (149,531)	\$ (153,042)	\$ (167,148)	\$ (181,720)	\$ (169,365)	\$ (177,637)	\$ (184,108)	\$ (189,810)	\$ (198,759)	\$ (207,048)	\$ (228,566)	\$ (228,566)
8	Jurisdictional Retirements	\$ 6,067,071	\$ 294,835	\$ 193,087	\$ 291,696	\$ 208,736	\$ 302,842	\$ 504,540	\$ 379,159	\$ 353,158	\$ 328,946	\$ 696,903	\$ 274,019	\$ 1,222,730	\$ 1,222,730
9	Cost of Removal	\$ 2,719,569	\$ 132,817	\$ 92,814	\$ 153,819	\$ 93,123	\$ 138,214	\$ 157,442	\$ 156,138	\$ 151,089	\$ 143,227	\$ 195,234	\$ 132,633	\$ 274,484	\$ 274,484
10	Monthly Accumulated Depreciation Activity	\$ 7,627,565	\$ 281,882	\$ 136,370	\$ 292,474	\$ 145,712	\$ 277,335	\$ 492,617	\$ 357,460	\$ 320,121	\$ 262,363	\$ 563,437	\$ 199,903	\$ 1,207,829	\$ 1,207,829
11	Accumulated Depreciation	\$ 7,627,565	\$ 8,109,447	\$ 8,245,817	\$ 8,538,291	\$ 8,684,003	\$ 8,961,338	\$ 9,453,955	\$ 9,811,415	\$ 10,131,536	\$ 10,413,899	\$ 11,007,337	\$ 11,206,939	\$ 12,474,568	\$ 12,474,568
12	Two-Month Average Accumulated Depreciation		\$ 664,042	\$ 681,469	\$ 699,338	\$ 717,596	\$ 735,223	\$ 787,304	\$ 802,724	\$ 830,958	\$ 856,060	\$ 892,551	\$ 925,565	\$ 966,729	\$ 8,538,587
13	ADIT	\$ (4,351,842)	\$ (4,678,154)	\$ (4,838,736)	\$ (5,037,133)	\$ (5,212,577)	\$ (5,445,499)	\$ (5,689,875)	\$ (6,183,308)	\$ (6,451,028)	\$ (6,698,870)	\$ (7,192,169)	\$ (7,383,987)	\$ (8,431,486)	\$ (8,431,486)
14	Two-Month Average ADIT		\$ (378,187)	\$ (396,454)	\$ (411,495)	\$ (427,071)	\$ (444,087)	\$ (472,299)	\$ (503,041)	\$ (526,431)	\$ (547,812)	\$ (578,795)	\$ (607,340)	\$ (659,977)	\$ (5,950,068)
15	Two-Month Average Net Rate Base (Lines 6 + 12 + 14)		\$ 7,939,838	\$ 8,144,377	\$ 8,260,910	\$ 8,446,514	\$ 8,644,229	\$ 9,021,747	\$ 9,444,849	\$ 9,734,378	\$ 9,892,280	\$ 10,432,613	\$ 10,834,481	\$ 11,965,091	\$ 112,881,304
16	Proration Adjustment														\$ 62,887
17	Net Rate Base (Line 15 + Line 16)														<u>\$ 112,944,172</u>

Note: Columbia uses CWP to determine Rate Base.

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE Projected Factor
Prorated ADIT for Calendar Year 2024

Line No	Description	Cumulative Balance as of Dec-23 (1)	Jan-24 (2)	Feb-24 (3)	Mar-24 (4)	Apr-24 (5)	May-24 (6)	Jun-24 (7)	Jul-24 (8)	Aug-24 (9)	Sep-24 (10)	Oct-24 (11)	Nov-24 (12)	Dec-24 (13)	Calculation for 2024
1	Accumulated Deferred Income Taxes	\$ 1,163,380	\$ 1,278,943	\$ 1,396,507	\$ 1,513,070	\$ 1,629,633	\$ 1,746,196	\$ 1,862,759	\$ 1,979,323	\$ 2,095,886	\$ 2,212,449	\$ 2,329,012	\$ 2,445,575	\$ 2,562,139	\$ 1,862,759
2	Rate Year Monthly Activity		\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	\$ 116,563	
3	Multipled by Proration Factors		91.80328%	83.87878%	75.40984%	67.21311%	58.74317%	50.54845%	42.07650%	33.60656%	25.40684%	16.93989%	8.74317%	0.27322%	
4	Prorated ADIT Activity		\$ 107,009	\$ 97,773	\$ 87,900	\$ 78,346	\$ 68,473	\$ 58,918	\$ 49,046	\$ 39,173	\$ 29,819	\$ 19,746	\$ 10,191	\$ 318	
5	Prorated ADIT Balances	\$ 1,163,380	\$ 1,270,389	\$ 1,368,162	\$ 1,456,062	\$ 1,534,408	\$ 1,602,881	\$ 1,661,799	\$ 1,710,845	\$ 1,750,018	\$ 1,779,836	\$ 1,799,382	\$ 1,809,573	\$ 1,809,892	\$ 1,809,892
6	Normalization Loss Adjustment		\$ 8,750	\$ 7,995	\$ 7,188	\$ 6,407	\$ 5,599	\$ 4,818	\$ 4,011	\$ 3,203	\$ 2,422	\$ 1,615	\$ 833	\$ 26	\$ 52,867

Schedule 12

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 SAVE Projected Factor
Projected Depreciation Expense for Calendar Year 2024

Line No.	Description	Amount
1	Depreciation Expense - Account 376: Distribution Mains (Sch 12a, Line 4)	\$ 1,028,186
2	Depreciation Expense - Account 378: M&R (Sch 12a, Line 8)	\$ 186,506
3	Depreciation Expense - Account 303.30: Intangible, Software (Sch 12a, Line 12)	\$ 228,855
4	Depreciation Expense - Account 380: Services (Sch 12a, Line 16)	\$ 670,226
5	Depreciation Expense - Account 387: M&R (Sch 12a, Line 20)	<u>\$ (70)</u>
6	Total Depreciation Expense (Sch 12a, Line 21)	\$ 2,113,703
7	Multiplied by: Effective Income Tax Rate (Sch 8, Line 7)	<u>25.74%</u>
8	Income Tax Savings	\$ (544,067)
9	Required Operating Income (Lines 6 + 8)	<u>\$ 1,569,636</u>
10	Divided by: Revenue Conversion Factor (Sch 7, Page 1, Line 7)	<u>74.05%</u>
11	Revenue Requirement - Depreciation Expense	<u><u>\$ 2,119,808</u></u>

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-001192024 BAVE Projected Factor
Projected Monthly Depreciation Expense for Calendar Year 2024

Line No	Description	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Total
<i>Account 376 Distribution Mains (Net of Retirements)</i>														
1	Prior Month Depreciable Plant Balance	\$ 46,984,860	\$ 48,419,828	\$ 49,287,053	\$ 50,122,671	\$ 51,036,676	\$ 52,819,750	\$ 53,562,318	\$ 51,382,211	\$ 53,787,505	\$ 55,931,769	\$ 72,148,945	\$ 73,399,621	
2	Current Month Depreciable Plant Activity	\$ 1,434,738	\$ 867,425	\$ 835,618	\$ 917,005	\$ 1,780,075	\$ 5,742,568	\$ 2,819,885	\$ 2,405,294	\$ 2,144,264	\$ 6,214,776	\$ 1,253,076	\$ 12,203,283	
3	Multiplied by: Depreciation Rate	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	
4	Account 376 Depreciation Expense	\$ 68,771	\$ 70,430	\$ 71,658	\$ 72,921	\$ 74,865	\$ 80,288	\$ 86,480	\$ 90,227	\$ 93,506	\$ 99,531	\$ 104,915	\$ 114,614	\$ 1,028,186
<i>Account 378: MSR (Net of Retirements)</i>														
5	Prior Month Depreciable Plant Balance	\$ 7,581,888	\$ 7,703,707	\$ 7,790,441	\$ 7,795,789	\$ 8,545,076	\$ 8,592,604	\$ 8,567,808	\$ 8,591,604	\$ 8,561,740	\$ 8,565,213	\$ 9,040,130	\$ 9,047,284	
6	Current Month Depreciable Plant Activity	\$ 141,718	\$ 68,733	\$ 8,358	\$ 749,277	\$ 37,528	\$ 5,202	\$ 3,788	\$ 136	\$ (6,527)	\$ 454,817	\$ 7,154	\$ 11,837,490	
7	Multiplied by: Depreciation Rate	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	
8	Account 378 Depreciation Expense	\$ 13,284	\$ 13,493	\$ 13,573	\$ 14,230	\$ 14,815	\$ 14,953	\$ 14,960	\$ 14,904	\$ 14,958	\$ 15,348	\$ 15,751	\$ 28,068	\$ 188,500
<i>Account 303.30: Intangible Plant, Misc Software</i>														
9	Prior Month Depreciable Plant Balance	\$ -	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	\$ 1,194,025	
10	Current Month Depreciable Plant Activity	\$ 1,194,025	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
11	Multiplied by: Depreciation Rate	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	
12	Account 303.30 Depreciation Expense	\$ 9,950	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 19,900	\$ 228,855
<i>Account 380 Services (Net of Retirements)</i>														
13	Prior Month Depreciable Plant Balance	\$ 13,674,184	\$ 14,407,520	\$ 14,827,129	\$ 15,821,330	\$ 16,330,004	\$ 17,087,935	\$ 17,732,202	\$ 18,538,651	\$ 19,335,561	\$ 20,068,203	\$ 20,961,509	\$ 21,709,159	
14	Current Month Depreciable Plant Activity	\$ 733,358	\$ 519,809	\$ 664,201	\$ 508,674	\$ 737,930	\$ 664,267	\$ 808,448	\$ 798,810	\$ 782,841	\$ 863,306	\$ 743,650	\$ 862,044	
15	Multiplied by: Depreciation Rate	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	
16	Account 380 Depreciation Expense	\$ 43,781	\$ 45,713	\$ 47,818	\$ 50,102	\$ 52,046	\$ 54,230	\$ 58,522	\$ 58,021	\$ 61,451	\$ 63,985	\$ 68,489	\$ 68,991	\$ 670,220
<i>Account 387 MSR (Net of Retirements)</i>														
17	Prior Month Depreciable Plant Balance	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	
18	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
19	Multiplied by: Depreciation Rate	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	
20	Account 387 Depreciation Expense	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	(70)
21	Total (Lines 4 + 8 + 12 + 16 + 20)	\$ 135,770	\$ 149,531	\$ 153,942	\$ 157,148	\$ 161,720	\$ 169,365	\$ 177,837	\$ 184,108	\$ 189,810	\$ 198,758	\$ 207,049	\$ 228,668	\$ 2,113,703

Note: The Depreciation methodology should be consistent with how the Company accounts for Depreciation expense on its books.

Note: The Depreciable Plant balance should exclude CIVIP.

Note: The Company added Lines 2, 6, 10, 14, & 18 to show the current month activity which receives a half month of depreciation.

Columbia Gas of Virginia, Inc.
Case No. PUR-2023-061192024 SAGE Projected Factor
Projected Monthly Depreciation Expense for Calendar Year 2023

Line No	Description	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total
Account 378- Distribution Mains (Net of Retirements)														
1	Prior Month Depreciable Plant Balance	\$ 14,607,450	\$ 15,368,507	\$ 16,198,777	\$ 16,975,831	\$ 20,848,888	\$ 39,816,867	\$ 41,154,852	\$ 41,762,820	\$ 42,281,500	\$ 42,743,802	\$ 44,083,705	\$ 44,353,868	
2	Current Month Depreciable Plant Activity	\$ 781,057	\$ 768,270	\$ 2,819,054	\$ 1,873,057	\$ 10,087,870	\$ 1,238,094	\$ 607,968	\$ 518,680	\$ 482,302	\$ 1,338,903	\$ 270,163	\$ 2,631,022	
3	Multiplied by Depreciation Rate	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	
4	Account 378 Depreciation Expense	\$ 21,622	\$ 22,739	\$ 25,325	\$ 28,707	\$ 43,902	\$ 58,436	\$ 58,770	\$ 60,582	\$ 61,269	\$ 62,588	\$ 63,749	\$ 65,940	\$ 574,452
Account 378- MSR (Net of Retirements)														
5	Prior Month Depreciable Plant Balance	\$ 4,985,732	\$ 4,703,399	\$ 4,731,017	\$ 4,819,817	\$ 4,675,778	\$ 4,677,699	\$ 4,678,819	\$ 4,678,810	\$ 4,679,842	\$ 4,678,311	\$ 4,784,969	\$ 4,786,845	
6	Current Month Depreciable Plant Activity	\$ 7,857	\$ 27,628	\$ (111,400)	\$ 56,159	\$ 1,924	\$ 1,220	\$ 890	\$ 32	\$ (1,530)	\$ 108,657	\$ 1,677	\$ 2,775,343	
7	Multiplied by Depreciation Rate	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	0.17%	
8	Account 378 Depreciation Expense	\$ 8,185	\$ 8,216	\$ 8,143	\$ 8,095	\$ 8,145	\$ 8,148	\$ 8,150	\$ 8,151	\$ 8,149	\$ 8,241	\$ 8,335	\$ 10,754	\$ 100,712
Account 303.30- Intangible Plant, Miss Software														
9	Prior Month Depreciable Plant Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
11	Multiplied by Depreciation Rate	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	
12	Account 303.30 Depreciation Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Account 380- Services (Net of Retirements)														
13	Prior Month Depreciable Plant Balance	\$ 1,834,774	\$ 2,105,244	\$ 2,547,285	\$ 3,109,269	\$ 3,735,402	\$ 4,539,775	\$ 5,843,136	\$ 6,962,663	\$ 8,306,346	\$ 9,573,107	\$ 11,007,075	\$ 12,242,292	
14	Current Month Depreciable Plant Activity	\$ 270,469	\$ 442,052	\$ 561,974	\$ 626,132	\$ 804,373	\$ 1,103,391	\$ 1,339,527	\$ 1,323,663	\$ 1,288,782	\$ 1,433,888	\$ 1,235,217	\$ 1,431,872	
15	Multiplied by Depreciation Rate	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	
16	Account 380 Depreciation Expense	\$ 6,140	\$ 7,250	\$ 8,815	\$ 10,668	\$ 12,886	\$ 15,688	\$ 19,875	\$ 23,825	\$ 27,862	\$ 32,071	\$ 36,230	\$ 40,388	\$ 241,085
Account 387- MSR (Net of Retirements)														
17	Prior Month Depreciable Plant Balance	\$ -	\$ -	\$ -	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	\$ (2,990)	
18	Current Month Depreciable Plant Activity	\$ -	\$ -	\$ (2,990)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
19	Multiplied by Depreciation Rate	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	
20	Account 387 Depreciation Expense	\$ -	\$ -	\$ (3)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (6)	\$ (56)
21	Total (Lines 4 + 8 + 12 + 16 + 20)	\$ 38,847	\$ 38,205	\$ 42,379	\$ 47,482	\$ 64,837	\$ 82,450	\$ 87,689	\$ 92,552	\$ 97,295	\$ 102,894	\$ 108,308	\$ 116,974	\$ 916,793

Note: The Depreciation methodology should be consistent with how the Company accounts for Depreciation expense on its books.
Note: The Depreciable Plant balance should exclude CIVIP.
Note: The Company added Lines 2, 6, 10, 14, & 18 to show the current month activity which receives a half month of depreciation.