FILE

PUCO EXHIBIT FILING

Date of Hearing: October 2, 2017

Case No. 16-2422-GA-ALT

PUCO Case Caption: In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative form of Regulation to Extend and Increase Its Infrastructure Replacement Program.

List of exhibits being filed:

Joint Exhibit 1
Columbia Gas Exhibits 1-5
OCC Exhibits 1-4
Staff Exhibits 1-2

Reporter's Signature:

Date Submitted:

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

- - -

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program. : Case No. 16-2422-GA-ALT

- - -

PROCEEDINGS

before Greta See, Hearing Examiner, at the Public Utilities Commission of Ohio, 180 East Broad Street, Room C, Columbus, Ohio, called at 10:00 a.m. on Monday, October 2, 2017.

- - -

ARMSTRONG & OKEY, INC.
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- - -

CERTIFICATE

I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter on Monday, October 2, 2017, and carefully compared with my original stenographic notes.

Cynthia L. Cunningham

Cynthia L. Cunningham

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FILE

JOINT EXHIBIT 1

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program.	)	Case No. 16-2422-GA-ALT

JOINT STIPULATION AND RECOMMENDATION

Rule 4901-1-30(A), Ohio Administrative Code ("O.A.C."), provides that any two or more parties may enter into a written stipulation concerning the proposed resolution of some or all of the issues in a proceeding. The purpose of this document is to set forth the understanding of Columbia Gas of Ohio, Inc. ("Columbia"), the Staff of the Public Utilities Commission of Ohio ("Staff")[1] and Ohio Partners for Affordable Energy ("OPAE")[2] (collectively, the "Signatory Parties" or "Parties")[3], and to recommend that the Public Utilities Commission of Ohio ("Commission") approve and adopt this Joint Stipulation and Recommendation ("Stipulation"), resolving all of the issues in this proceeding.

The settlement agreement embodied in this Stipulation was reached only after negotiations between and among knowledgeable and capable parties and reflects a bargained compromise involving a balancing of competing interests. Although the Stipulation does not necessarily reflect the position that any Party would have taken if it had litigated all of the issues addressed below, the Parties believe the Stipulation is supported by adequate data and information, strikes a reasonable balance (as a package) among the various interests represented by the

[1] For the purpose of entering into this Joint Stipulation and Recommendation, Staff is considered a party under Rule 4901-1-10(C), O.A.C.

[2] OPAE filed Objections to the Staff Report on August 15, 2017; however, by signing this Stipulation, OPAE is no longer pursuing its Objections.

[3] Industrial Energy Users-Ohio is also a party to this proceeding, and has indicated that it does not oppose this Joint Stipulation and Recommendation.

Parties, does not violate any important regulatory principle, and is in the public interest.

For purposes of resolving certain issues raised in this proceeding, the Signatory Parties stipulate and recommend as follows:

1. In the Application filed in this docket, Columbia proposed to continue the alternative regulation plan originally approved in Case No. 08-0073-GA-ALT, et al., and extended for a five-year period (with clarifications to its scope[4]) in Case No. 11-5515-GA-ALT, for an additional five-year period (incorporating IRP investments made from January 1, 2018, through December 31, 2022). The Parties agree that the Commission should approve the Application, with the modifications described herein.

REAUTHORIZATION AND TERM

2. Columbia may continue its Rider IRP mechanism to reflect IRP investments made through December 31, 2022. However, should Columbia file a base rate case with new rates effective before December 31, 2022, the Parties recognize that as part of any such rate case interested parties may challenge any aspect of the IRP and the Commission may, as a result of such challenge or on its own initiative, revise Columbia's IRP prior to December 31, 2022.

ANNUAL RIDER IRP ADJUSTMENT LIMIT AND AMRP O&M SAVINGS

3. In Columbia's last alternative regulation plan extension filing proceeding there was a contentious dispute regarding the monthly Rider IRP charge to be paid by Columbia's Small General Service[5] (SGS Class). Columbia's annual Rider IRP adjustment filings have sometimes involved disputes regarding, and the amount of, AMRP O&M savings to be credited to customers. The Parties believe these contentious issues can be resolved by setting maximum limits on the monthly Rider IRP charges for each year of the next

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[4] The Signatory Parties agree that the 4,100 miles of Priority Pipe, of which 1,640 miles of Priority Pipe are to be replaced by December 31, 2017, includes pre-1955 unprotected coated steel pipe, which is considered bare steel.

[5] Small General Service includes Small General Sales Service, Small General Schools Sales, Service, Small Gas Transportation Service, Small General Schools Transportation Service, Full Requirements Small General Transportation Service, and Full Requirements Small General Schools Transportation Service.

extended term, while guaranteeing a minimum level of savings to be credited to customers in future Rider IRP adjustment proceedings for the same years. Columbia will continue to pass back the greater of the actual O&M savings or the minimum AMRP O&M savings listed below.

4. The maximum monthly Rider IRP SGS Class rates for investments in Calendar Years 2018 through 2022, and the corresponding guaranteed minimum levels of AMRP O&M savings for those calendar years, will be as follows:

Investment Year	2018	2019	2020	2021	2022
Rates Effective	**May 2019**	**May 2020**	**May 2021**	**May 2022**	**May 2023**
Maximum Rider IRP SGS Class Rate	$11.35	$12.50	$13.70	$14.95	$16.20
Minimum AMRP O&M Savings	$2.00 million	$2.00 million	$2.25 million	$2.50 million	$2.50 million

5. The Parties agree that for Columbia's Rider IRP adjustment cases covering investments for years 2018 through 2022, all IRP projects completed during those years are considered projects that otherwise would not have been included in Columbia's capital replacement program and, therefore, there should be no adjustments to the IRP Rider rate on that basis.[6]

[6] The Opinion an Order approving Columbia's original IRP provided, "Columbia shall provide evidence in its annual Rider IRP applications to show that the rider was not used to recover the costs of projects that otherwise would have been included in its capital recovery program." Case Nos. 08-72-GA-AIR et al, Opinion and Order (December 3, 2008) at 14.

ADDITIONAL TERMS AND CONDITIONS

6. This Stipulation is expressly conditioned upon the Commission's adoption and approval of the Stipulation in its entirety, without material modification.

7. Should the Commission reject or materially modify all or any part of this Stipulation, the Parties shall have the right, within 30 days of issuance of the Commission's order, to file an application for rehearing or to terminate and withdraw from the Stipulation by filing a notice with the Commission in this proceeding and serving all the Parties. The Parties agree that they will not oppose or argue against any application for rehearing that seeks to uphold the original, unmodified Stipulation.

8. Upon the Commission's issuance of any entry on rehearing that does not adopt the Stipulation without material modification, any party may terminate and withdraw from the Stipulation by filing a notice with the Commission within 30 days of the Commission's entry on rehearing.

9. Upon notice of termination or withdrawal by any party, pursuant to the above provisions, the Stipulation shall immediately become null and void. In such event, the Signatory Parties agree that all Parties should be provided an opportunity to file comments on Columbia's application and/or file objections to the Staff Report.

10. If the Stipulation becomes null and void and the Commission determines that a hearing is necessary, the Parties urge the Commission to give all Parties an opportunity to present testimony, cross-examine witnesses, and brief issues. The Parties further urge the Commission to decide Columbia's application based upon the record and briefs as if this Stipulation had never been executed.

11. The Signatory Parties agree not to oppose the admission into the record of all pre-filed testimony in this matter. The Parties further agree to waive all cross-examination of witnesses providing pre-filed testimony, unless this Stipulation becomes null and void due to a material modification by the Commission.

12. This Stipulation is entered into as an overall compromise and resolution of all of the issues presented in this proceeding. This Stipulation does not necessarily represent the position any Signatory Party would have taken absent the execution of this Stipulation.

13. Except for enforcement purposes or as otherwise specified below, the Signatory Parties agree not to cite this Stipulation, the information and data contained in it, or any Commission Order approving the Stipulation as precedent in any future proceeding for or against any other Signatory Party.

14. Except as otherwise specified in this Stipulation, the Signatory Parties urge the Commission not to construe or apply any specific element or item contained in or supporting the Stipulation as the results that any Signatory Party might support or seek had the Signatory Parties not reached this Stipulation.

CONCLUSION

15. The Signatory Parties stipulate, agree, and recommend that the Commission issue a final Opinion and Order in this proceeding, ordering as follows:

    A. The rates, terms, and conditions agreed to in this Stipulation by all Signatory Parties are approved in accordance with §§ 4929.05, 4929.051(B) and 4929.11, Ohio Revised Code; and

    B. The Application in this matter is adopted in accordance with the recommendations of the Signatory Parties, subject to the modifications set forth in the Stipulation.

In conclusion, the undersigned Parties respectfully request that the Commission issue an Opinion and Order approving and adopting this Joint Stipulation and Recommendation.

AGREED THIS 18th DAY OF AUGUST, 2017.

/s/ Stephen B. Seiple
Stephen B. Seiple (0003809)
Columbia Gas of Ohio, Inc.

/s/ John H. Jones
(per email authorization 08/17/17)
John H. Jones (0051913)
Assistant Attorney General,
Public Utilities Section
On behalf of the Staff of the Public Utilities Commission of Ohio

/s/ Colleen L. Mooney
(per telephone authorization 08/18/17)
Colleen L. Mooney (0015668)
Ohio Partners for Affordable Energy

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 18th day of August, 2017, upon the parties listed below.

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Attorney for
COLUMBIA GAS OF OHIO, INC.

COLUMBIA EX. 1

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

APPLICATION OF
COLUMBIA GAS OF OHIO, INC.

1. Introduction

Pursuant to Revised Code §§ 4929.05, 4929.051(B), and 4929.11, Columbia Gas of Ohio, Inc. ("Columbia") submits this application for authorization to continue its alternative rate plan (most recently reapproved in Case No. 11-5515-GA-ALT) for another five-year period (2018-2022). The information required by Ohio Admin. Code 4901:1-19-06(C) is attached in the following exhibits:

Exhibit A: Alternative Rate Plan

Exhibit B: Authorized Exempted Services

Exhibit C: Discussion Regarding Cross-Subsidization of Services

Exhibit D: Discussion Regarding Compliance with Revised Code §§ 4905.35 and 4929.02

Exhibit E: List of Witnesses Sponsoring Application Exhibits

Exhibit F: Current Tariff Schedules

Exhibit G: Typical Bill Comparison

Columbia is filing the testimony in support of this Application contemporaneous with this Application.

2. Notice

As required by Ohio Admin. Code 4901:1-16-06(A), Columbia notified Commission Staff on December 27, 2016, that Columbia intended to file this Application, by letter addressed to the directors of the Utilities and the Service Monitoring and Enforcement Departments. Columbia also notified the mayor and legislative authority of each municipality Columbia serves of Columbia's intent to file this Application and the proposed rates on January 27, 2017, in writing.

3. Explanation of the Plan's Justness and Reasonableness

With customers paying approximately 30% less than they were at the end of Columbia's last rate case, now is an optimal time to invest in infrastructure. Columbia's Infrastructure Replacement Program will continue to improve the safety and reliability of service, leading to reduced leakage.

Because the costs of these infrastructure investments are not collected from customers immediately as Columbia makes its investments, but rather are spread over the useful life of the investments, the corresponding impact on customers' bills is moderated. As of May 2018, the monthly Rider IRP rate for customers served under Columbia's Small General Service Rate Schedule is expected to be less than $10.20 per month, reflecting approximately $1.7 billion of cumulative investment made by Columbia through calendar year 2017. And Columbia plans to spend an estimated additional $1.5 billion on the IRP over the next five years. Again, this investment will be recovered from customers over the useful life of the assets.

4. Conclusion

For the reasons provided in this Application, Columbia respectfully requests that the Commission again extend Columbia's Infrastructure Replacement Program and Rider IRP for another five years, pursuant to the terms outlined herein, and grant any other necessary and proper relief.

Respectfully submitted,

/s/ Eric B. Gallon

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COLUMBIA GAS OF OHIO, INC.

Verification

STATE OF OHIO)
) ss:
FRANKLIN COUNTY)

Daniel A. Creekmur, being first duly cautioned and sworn, deposes and says that he is the President of Columbia Gas of Ohio, Inc.; that the statements and schedules submitted herewith contain proposed revisions to existing schedule sheets and establish the facts and grounds upon which this Application is based; and that the data and facts set forth herein are true to the best of his knowledge and belief.

Daniel A. Creekmur
President

Sworn to before me, and subscribed in my presence, this 27th day of February, 2017.

Notary Public

SEAL

NOTARIAL SEAL
STATE OF OHIO

CHERYL A. MacDONALD
Notary Public, State of Ohio
My Commission Expires
March 26, 2017

Verification

STATE OF OHIO)
) ss:
FRANKLIN COUNTY)

Shawn Anderson, being first duly cautioned and sworn, deposes and says that he is the Treasurer and Chief Risk Officer of Columbia Gas of Ohio, Inc., Applicant herein, that the statements and schedules submitted herewith contain proposed revisions to existing schedule sheets, establish the facts and grounds upon which this Application is based, and that the data and facts set forth herein are true to the best of his knowledge and belief.

Shawn Anderson
Treasurer and Chief Risk Officer

Sworn to before me and subscribed in my presence this 27TH day of February, 2017.

Notary Public

SEAL

NOTARIAL SEAL
STATE OF OHIO

CHERYL A. MacDONALD
Notary Public, State of Ohio
My Commission Expires
March 26, 2017

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017, upon the parties listed below.

/s/ Eric B. Gallon
Eric B. Gallon

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Exhibit A
Ohio Admin. Code 4901:1-19-06(C)(2)
Detailed Alternative Rate Plan

1. Background

1.1. Case No. 07-478-GA-UNC

In 2005, the Commission began investigating the cause of riser failures throughout the state. After Commission Staff issued an investigation report in November 2006,[1] the Commission's Chairman asked Ohio's local distribution companies to "begin [a] riser inventory to identify the types and locations of risers on [their systems],"[2] "address[ ] any *** faulty riser conditions immediately[,]" and "proactively repair or replace any riser identified" as "prone-to-failure" in the Staff report.[3] He also asked them to consider "taking over responsibility for *** customer owned service lines."[4]

Columbia responded by proposing a new Infrastructure Replacement Program ("IRP").[5] Columbia proposed to replace the prone-to-failure risers on its system and associated customer service lines; assume responsibility for maintaining, repairing, and replacing customer service lines; capitalize its investments in those facilities; and recover its riser- and service-line-related costs. And, in 2007, the Commission approved much of Columbia's request. It approved Columbia's 3-year plan to replace its prone-to-failure risers and authorized Columbia to assume responsibility for associated service lines with hazardous leaks.[6] It approved "Columbia's assumption of appropriate rights and responsibilities" for

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[1] *See In the Matter of the Investigation of the Installation, Use, and Performance of Natural Gas Service Risers Throughout the State of Ohio and Related Matters*, Case No. 05-463-GA-COI ("*Riser Investigation Case*"), Staff Report (Nov. 24, 2006).

[2] *Riser Investigation Case*, Letter from Alan R. Schriber, Chairman, PUCO to All Local Distribution Companies (Jan. 2, 2007).

[3] *Riser Investigation Case*, Letter from Alan R. Schriber, Chairman, PUCO to All Local Distribution Companies (Jan. 23, 2007).

[4] *Riser Investigation Case*, Letter from Alan R. Schriber (Jan. 2, 2007).

[5] *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of Tariffs to Recover Through an Automatic Adjustment Clause Costs Associated with the Establishment of an Infrastructure Replacement Program and for Approval of Certain Accounting Treatment*, Case No. 07-478-GA-UNC ("*2007 IRP Case*"), Application (Apr. 25, 2007).

[6] *2007 IRP Case*, Entry, ¶23, at 8 (July 11, 2007); *see also 2007 IRP Case*, Entry on Rehearing, ¶13, at 5 (Sept. 12, 2007).

the risers and service lines it replaced.[7] And it gave Columbia accounting authority to defer costs related to Columbia's riser inventory and replacement and new assumptions of responsibility.[8]

Early the next year, the Commission approved (with minor modifications)[9] a stipulation and recommendation reaffirming Columbia's responsibility for replacing prone-to-failure risers and maintaining, repairing, and replacing hazardous customer service lines.[10] The approved stipulation agreed Columbia could capitalize its investment in those risers and customer service lines.[11] It agreed Columbia would recover its IRP revenue requirement through a monthly, fixed IRP Rider.[12] It agreed Columbia could record as a regulatory asset the depreciation, incremental property taxes, and post in-service carrying charges ("PISCC") related to its investment in risers and service lines as Columbia replaced them, for recovery through the IRP Rider.[13] And it established a process for annual proceedings to establish the annual IRP Rider rate[14] and true-up revenues collected against revenue estimated.[15]

1.2. Case No. 08-73-GA-ALT

While the stipulation in that case was still pending, Columbia filed an application for authority to increase its gas distribution service rates and for approval of an alternative regulation plan.[16] In the alternative regulation plan, Columbia proposed adding two more components to its IRP: an Accelerated Mains Replacement ("AMRP") Program and an Automatic Meter Reading Devices ("AMRD") program. The AMRP was expected "to replace approximately 3,770 miles of bare steel pipe, 280 miles of cast iron/wrought iron pipe and an estimated 350,000 to 360,000 steel service lines (company-owned and customer-owned)

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[7] *2007 IRP Case*, Entry, ¶23, at 8 (July 11, 2007).

[8] *Id.*

[9] *See 2007 IRP Case*, Opinion and Order, at 36 (Apr. 9, 2008).

[10] *2007 IRP Case*, Amended Stipulation and Recommendation, ¶1, at 10 (Dec. 28, 2007).

[11] *Id.* ¶2, at 10.

[12] *Id.* ¶13, at 14.

[13] *Id.* ¶2, at 10.

[14] *Id.* ¶ 5, at 11.

[15] *Id.* ¶14, at 14.

[16] *See In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges*, Case No. 08-0073-GA-ALT ("*2008 IRP Case*"), Verified Application for Authority to Increase Rates for Gas Distribution Service and for Approval of an Alternative Regulation Plan (Mar. 3, 2008).

over a period of approximately 25 years." The AMRD program was expected to install AMRDs on over 380,000 meters.[17]

In December 2008, the Commission approved[18] a stipulation and recommendation to resolve Columbia's second IRP application.[19] Among other things, the approved stipulation agreed that Columbia's IRP should continue for another five years (or until the Commission approved new base rates or a new alternative rate plan for Columbia, whichever came first).[20] It agreed Columbia's Rider IRP should continue[21] and recover Columbia's costs for the components of the IRP,[22] with a reconciliation of costs recoverable and costs actually recovered.[23] The Commission approved the recovery of costs related to the AMRP with the understanding that the rider would not recover project costs that would "otherwise be funded by Columbia's existing capital replacement program" and that Columbia would "provide evidence in its annual Rider IRP applications" to prove this.[24] And the approved stipulation agreed Columbia would install AMRD on all of the residential and commercial meters it served, over an approximately five-year period.[25] Lastly, Columbia agreed (with Commission approval) to start limiting increases in the monthly Rider IRP charge for Columbia's Small General Service Class. Columbia agreed to limit its initial (2009) Rider IRP charge at $1.10/month; limit its 2010, 2011, 2012, and 2013 monthly charges at $2.20, $3.20, $4.20, and $5.20, respectively; and defer any costs in excess of those limits for recovery in later proceedings (with carrying charges computed at Columbia's effective long-term debt rate).[26]

1.3. Case No. 11-5515-GA-ALT

In May 2012, Columbia filed its most recent application to extend its alternative rate plan, this time through 2017.[27] Columbia reported that it finished re-

[17] *Id.* at 4-5.
[18] *2008 IRP Case,* Opinion and Order (Dec. 3, 2008).
[19] *2008 IRP Case,* Joint Stipulation and Recommendation (Oct. 24, 2008).
[20] *Id.* at 9, ¶10.A.
[21] *Id.* at 8, ¶10 and 16, ¶17.
[22] *Id.* at 8, ¶10.
[23] *Id.* at 9, ¶10.A.
[24] *2008 IRP Case,* Opinion and Order at 14 (Dec. 3, 2008).
[25] *2008 IRP Case,* Joint Stipulation and Recommendation at 9, ¶. 10.A.
[26] *See id.* at 12-13, ¶11.
[27] *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation,* Case No. 11-5515-GA-ALT ("*2011 IRP Case*"), Application, Exhibit A, at 2 (May 8, 2012).

placing its prone-to-fail risers in 2011.[28] Columbia explained the "riser replacement cost component [would] remain in Rider IRP until Columbia includes [those] investments into its base rates during its next base rate [case]."[29] And Columbia reported that it expected to finish installing AMRDs in 2013.[30]

Columbia also reported that it had repaired or replaced more than 55,000 customer service lines under its IRP, more than expected.[31] Columbia stated that it expected to continue repairing or replacing approximately 14,000 service lines a year, at an annual cost of approximately $21 million.[32] Columbia explained it would continue capitalizing and including those costs in its IRP.[33]

With regard to its AMRP, Columbia proposed to continue capitalizing and recovering costs "to replace inside meters with outside meters as necessary to mitigate the safety risks associated with higher operating pressures."[34] And Columbia proposed clarifying the AMRP's scope to include two specific types of "nonpriority" pipe: (1) nonpriority pipe within the bounds of priority pipe replacement projects, when it is more economical to replace the pipe than attempt to tie it into the existing pipe; and (2) plastic and ineffectively coated steel pipe associated with priority pipe replacement projects.[35]

In September 2012, Columbia filed a stipulation and recommendation,[36] which the Commission approved and adopted a few months later.[37] That approved stipulation granted the clarification that Columbia had sought with regard to the scope of the AMRP. In particular, it authorized Columbia to replace non-priority pipe as part of Columbia's AMRP when replacing it was more economical than tying it into existing pipe, but only if the pipe length was less than or equal to certain specified footages (between 205 feet and 435 feet, depending on pipe diameter).[38] It authorized Columbia to replace sections of plastic pipe associated with priority pipe-replacement projects, so long as the plastic pipe re-

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[28] *Id.* at 3.

[29] *Id.*

[30] *Id.* at 5. Columbia later reported that it installed AMRDs on all but 1,102 active meters by 2013. *2011 IRP Case*, Report on Installation of Automatic Meter Reading Devices (Mar. 3, 2014).

[31] *2011 IRP Case*, Application, Exhibit A, at 3.

[32] *Id.*

[33] *Id.*

[34] *Id.* at 4-5.

[35] *Id.* at 2.

[36] *2011 IRP Case*, Joint Stipulation and Recommendation (Sept. 26, 2012).

[37] *2011 IRP Case*, Opinion and Order (Nov. 28, 2012).

[38] *2011 IRP Case*, Joint Stipulation and Recommendation at 3.

placed did not exceed 5% of the pipe footage replaced under the AMRP each year.[39] And it authorized Columbia to replace ineffectively coated steel pipe associated with priority pipe-replacement projects, so long as Columbia cathodically tested the coating on any coated steel pipe installed after 1954 and only included the costs of testing and replacing ineffectively coated steel pipe in Rider IRP.[40]

The approved stipulation noted that Columbia expected to replace approximately 1,640 miles of priority pipe under the AMRP by the end of 2017. Columbia agreed that if it falls short of that goal, Columbia cannot recover the costs for the shortfall through Rider IRP.[41]

The approved stipulation also established a new basis for calculating O&M savings from the AMRP. It agreed that O&M savings would be calculated based on savings from avoided leak inspection, leak repair, general/other, and half of supervision and engineering. Columbia also guaranteed minimum O&M savings, "to be credited to customers in future Rider IRP adjustment proceedings," increasing from $750,000 in 2012 to $1,250,000 in 2014 through 2017. In return, the parties agreed that all IRP projects completed between 2012 and 2017 would not be "considered to be projects that otherwise would have been included in Columbia's capital replacement program ***."[42]

The approved stipulation further clarified the AMRP should include "costs of system improvements for future growth *** only if the improvements are for the same purpose as the original role of the priority pipe and the cost is no more than an in-kind *** replacement of the replaced pipe ***."[43] It clarified that Columbia could capitalize and recover the cost to move inside meters outside only where Columbia replaced the pipe segment associated with the meter, increased the pipe's pressure to regulated pressure (greater than 1 psig), and operated the replacement mains and associated service lines at that pressure within two years.[44] And it clarified that, when a governmental entity asks Columbia to relocate its facilities, Columbia can recover costs associated with replacing pipe

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[39] *Id.* at 4.

[40] *Id.*

[41] *Id.* at 3.

[42] *Id.* at 6.

[43] *Id.* at 4.

[44] *Id.* at 4-5.

segments that include priority pipe within a public right-of-way only if plastic pipe makes up no more than 25% of the total relocated footage.[45]

Finally, the approved stipulation imposed limits on the monthly rider IRP charge for Columbia's SGS and SGTS customers, starting at $6.20 in 2013 and rising to $10.20 in 2017.[46] Additionally, it required Columbia to provide $2,562,500, funded by Columbia's shareholders, to continue its low-income customer assistance fund through the 2017-18 winter heating season.[47]

2. Description of the Proposed Alternative Rate Plan Extension

Columbia now seeks the Commission's approval to continue the IRP and Rider IRP, under the scope and procedures currently applicable to both, for another 5-year period, from 2018 through 2022.

2.1. Infrastructure Replacement Program

2.1.1. Risers and Hazardous Customer Service Lines

As indicated in Columbia's prior filings, Columbia completed its replacement of prone-to-failure risers in June 2011, for $16 million less than originally estimated. The riser replacement cost component will remain in Rider IRP, however, until Columbia includes its riser-related investments into its base rates during its next base rate case.

Columbia proposes to continue capitalizing and including within its IRP the costs associated with maintaining, repairing, and replacing customer service lines that Columbia has determined to present an existing or probable hazard to persons or property. Through December 2016, Columbia has repaired or replaced 256,989 customer service lines under the IRP. Columbia expects service line repairs and replacements to cost approximately $25 million annually for the next five years.

2.1.2. Accelerated Mains Replacement Program

Columbia also includes within its current IRP program a mechanism for recovering costs associated with the replacement of priority pipe and the associ-

[45] *Id.* at 5.
[46] *Id.* at 7.
[47] *Id.*

ated metallic customer or company-owned service lines. Columbia has identified approximately 4,100 miles of priority pipe[48] and an estimated 350,000 to 360,000 associated metallic service lines to replace under the AMRP. Columbia proposes to continue capitalizing and recovering the costs of these replacements through Rider IRP.

By the end of 2017, Columbia plans to have replaced at least 1,640 miles of priority pipe and approximately 200,000 associated service lines. Total costs through 2017 are estimated to be $1.3 million. Based on current projections, Columbia estimates it will finish replacing priority pipe within the twenty-five-year period.

Columbia will continue to use a systematic approach in the replacement of priority pipe. By identifying large portions of the system and prioritizing based on age, leak history, geographic proximity, and other factors, Columbia can concentrate resources in a given area and leverage economies of scale to minimize construction costs and disruption to the communities it serves. In addition, this systematic approach allows for the conversion of larger diameter pipe for low pressure systems to smaller diameter pipe for higher pressure systems, which improves service reliability and capacity while reducing installation and ongoing maintenance costs.

Columbia uses a software program - Optimain DS™ - to help evaluate and rank pipe segments system-wide against a range of environmental conditions, risks, and other factors. Optimain DS™ is the industry's leading comprehensive decision support solution for predictive failure analysis and risk assessment.

2.1.2.1. Inside Meters

Columbia proposes to continue replacing inside meters with outside meters as necessary to mitigate the safety risks associated with higher operating pressures. As under the approved stipulation in Case No. 11-5515-GA-ALT, Columbia proposes to continue capitalizing and recovering costs associated with this activity through Rider IRP only when three conditions are met: (1) The meter is connected to a segment of pipe to be replaced as part of the AMRP; (2) Columbia plans to, and actually does, increase the pressure in that pipe to regulated pressure (greater than 1 lb /psig); and (3) Columbia plans to, and actu-

[48] The priority pipe total of 4,100 miles includes 155 miles of unprotected coated steel. *See In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation*, Case No. 11-5515-GA-ALT, Prepared Direct Testimony of Eric T. Belle at 6 (May 8, 2012).

ally does, operate the replacement mains and associated service lines at regulated pressure within two years of relocating the first meter on the project.

2.1.2.2. Associated and Interspersed Non-Priority Pipe

As under the approved stipulation in Case No. 11-5515-GA-ALT, Columbia proposes to continue capitalizing and recovering through Rider IRP its costs to replace interspersed sections of non-priority pipe contained within the bounds of priority pipe replacement projects, so long as the footage of the non-priority pipe is less than or equal to the following amounts:

PIPE DIAMETER	FOOTAGE
8″	205′
6″	250′
4″	365′
2″	435′

Columbia proposes to continue capitalizing and recovering its costs to replace first generation plastic pipe or Aldyl-A when such pipe is associated with priority pipe in replacement projects, up to 5% of the total AMRP program footage for each calendar year. Columbia proposes to continue its existing process for identifying and quantifying the footage of plastic pipe replaced for each AMRP project.

Columbia also proposes to continue capitalizing and recovering its costs to replace ineffectively coated steel pipe associated with priority pipe replacement projects. Columbia proposes to continue cathodically testing coated steel pipe installed after 1954 to determine whether it is ineffectively coated, and would only include in Rider IRP the costs to test and replace the steel pipe if ineffectively coated.

And Columbia proposes to continue capitalizing and recovering its costs associated with replacing pipe segments that include priority pipe within a public right-of-way, where a governmental entity has asked Columbia to relocate its facilities, so long as any plastic pipe associated with the relocation is no more than 25% of the total relocated footage.

2.1.3. Automatic Meter Reading Devices

Columbia also includes within Rider IRP the costs associated with installing automatic meter reading devices on all residential and commercial meters. Columbia had installed AMRDs on all but 1,102 of its active meters by the end of 2013. Columbia agreed, in the approved stipulation in Case No. 11-5515-GA-ALT, that it would not seek cost recovery through Rider IRP for any AMRDs installed after December 31, 2013. Like the riser replacement cost component, however, the AMRD component will remain in Rider IRP until Columbia includes its pre-2014 AMRD-related investments into its base rates during its next base rate case.

2.2. Rider IRP

2.2.1. Revenue Requirement Components

Columbia will recover its IRP costs by computing a revenue requirement based on cumulative plant investment through December 31 (date certain) of the calendar year prior to that in which the rates from its annual IRP application become effective. This revenue requirement will provide for a return on rate base of 10.95% (an 8.12% rate of return plus a tax gross-up factor) and the return of all program costs. In particular, the revenue requirement includes the following components:

2.2.1.1. Return on Net Plant Investment

Investment will be valued at the date certain and include cumulative gross plant additions (capitalized at Columbia's actual cost of replacement and shown as an increase to rate base as projects are placed in service), less cumulative retirements, less the associated accumulated reserve for depreciation, plus the cost of removal, plus cumulative retirements, plus cumulative capitalized interest or post-in-service carrying costs (at Columbia's weighted long-term cost of debt), plus cumulative deferred depreciation expense (at the applicable, Commission-approved depreciation rate), plus cumulative deferred property taxes (at the estimated composite property tax rate), and less net deferred income taxes associated with the IRP.

Columbia requests accounting authority to: (1) continue accounting for the deferral of depreciation expense on all investment between the date the property is placed into service and the date recovery of the investment commences; (2) to continue deferring property taxes on all investment between the dates the property is placed into service and the date recovery of the investment commences; and (3) to continue deferral of post-in-service carrying costs on all investment between the dates the property is placed into service and the date recovery of the investment commences.

Deferred expenses such as deferred depreciation, deferred property taxes, and deferred PISCC are amortized over the life of the associated assets using the current depreciation rate. Amortization does not begin until Columbia starts recovering the associated expense through rates.

2.2.1.2. Customer Education Expenses

Consistent with the treatment provided in Columbia's prior alternative regulation cases, Columbia is requesting authority to accrue customer education expenses to FERC 182, Other Regulatory Assets for recovery through the IRP.

2.2.1.3. O&M Savings Associated with the AMRP

As under the stipulation approved in Case No. 11-5515-GA-ALT, Columbia is proposing to guarantee minimum AMRP O&M savings of $1.25 million per year, which will be shown as a line item reduction in the annual revenue requirement calculation to be credited to customers in future Rider IRP adjustment proceedings. Columbia will continue to guarantee to pass back the greater of the actual O&M savings or $1.25 million per year.

Columbia proposes to continue calculating actual O&M savings by comparing savings from avoided leak inspection, leak repair, and general/other, and half of the savings from supervision and engineering, to Columbia's actual expenses incurred in each of those four categories during the baseline twelve-month period ending in September 30, 2008.

2.2.2. Process for Establishing Rider IRP Rates

As under prior IRPs, Columbia will file a pre-filing notice each November 30 containing partially estimated Rider IRP schedules for the charge to become effective the following May. These schedules will combine estimated and actual data through December 31. By the following February 28, Columbia will file an updated application with schedules supporting the proposed Rider IRP based on actual costs through December. Consistent with prior IRP orders, each annual application will true-up authorized revenues to those actually collected from customers. And, if Columbia files a general rate case between 2018 and 2022, the cumulative IRP investments and adjusted operating expenses will be included in base rates and Rider IRP will be reset to zero.

2.2.3. Monthly Rider IRP Rates

As under the approved stipulation in Case No. 11-5515-GA-ALT, Columbia proposes annual maximum rates for its monthly Rider IRP charge for Columbia's SGS and SGTS customers ("SGS Class"). Specifically, Columbia proposes that the SGS Class Rider IRP charge based on data for Calendar Years 2018-2022 not exceed the following amounts:

Calendar Year	Monthly Charge for SGS Class
2018	$11.50
2019	$12.80
2020	$14.10
2021	$15.40
2022	$16.70

Columbia's proposed maximum monthly SGS Class rates reflect the historic cost increases over the last four years of Columbia's cost per mile. Using the average annual increase over the most recent four years (6.47%) and applying this percentage to determine the capital necessary to install another 820 miles of priority pipe, Columbia proposes the maximum Rider IRP rates contained above.

Columbia proposes to continue deferring any costs in excess of the monthly rate limits, with carrying charges at Columbia's long-term debt rate, for recovery in any subsequent Rider IRP application during the five-year period of this extended IRP (so long as recovery would not cause Columbia to exceed the applicable maximum rate).

Exhibit B
Ohio Admin. Code 4901:1-19-06(C)(3)
Authorized Exempted Services

As required by Ohio Admin. Code 4901:1-19-06(C)(3), the following is a list of the services the Commission has authorized Columbia to exempt and the case number(s) authorizing those exemptions:

Approved exempted services:	natural gas commodity sales services; ancillary services
Case numbers:	08-1344-GA-EXM 12-2637-GA-EXM

Moreover, as further required by Ohio Admin. Code 4901:1-19-06(C)(3), attached are copies of Columbia's approved Standard of Conduct (First Revised Tariff Sheet No. 22, Section VII). Columbia did not file a separation plan, for the reasons provided in its original exemption application (*see* Application Exhibit V, Case No. 08-1344-GA-EXM (Jan. 30, 2009)).

SECTION VII
PART 22 - STANDARDS OF CONDUCT

22.1 Standards of Conduct

In operation of the Company Customer CHOICE^{SM} Program, the Company will adhere to the following Standards of Conduct for Marketing Affiliates and Internal Merchant Operations:

1) Company must apply any tariff provision relating to transportation services in the same manner to the same or similarly situated persons if there is discretion in the application of the provision.

2) Company must strictly enforce a tariff provision for which there is no discretion in the application of the provision.

3) Company may not, through a tariff provision or otherwise, give any Retail Natural Gas Supplier or Governmental Aggregator or any Retail Natural Gas Supplier's or Governmental Aggregator's customers preference in matters, rates, information, or charges relating to transportation service including, but not limited to, scheduling, balancing, metering, storage, Backup Service or curtailment policy. For purposes of Company's Customer CHOICE^{SM} Program, any ancillary service provided by Company, e.g. billing and envelope service, that is not tariffed will be priced uniformly for all Retail Natural Gas Suppliers or Governmental Aggregators and available to all equally.

4) Company must process all similar requests for transportation in the same manner and within the same approximate period of time.

5) Company shall not disclose to anyone other than a Columbia Gas of Ohio employee, or employee of NiSource performing services for Columbia Gas of Ohio, any information regarding an existing or proposed gas transportation arrangement, which Company receives from the following sources:

   a) a customer or Retail Natural Gas Supplier or Governmental Aggregator
   b) a potential customer or Retail Natural Gas Supplier or Governmental Aggregator
   c) any agent of such customer or potential customer, or
   d) a Retail Natural Gas Supplier, Governmental Aggregator or other entity seeking to supply gas to a customer or potential customer, unless such customer, agent, or Retail Natural Gas Supplier or Governmental Aggregator authorizes disclosure of such information.

6) If a customer requests information about Retail Natural Gas Suppliers, Company should provide a list of all Retail Natural Gas Suppliers operating on its system and currently enrolling Customers, but shall not endorse any Retail Natural Gas Supplier nor indicate that any Retail Natural Gas Supplier will receive a preference.

7) To the maximum extent practicable, Company's operating employees and the operating employees of its marketing affiliate must function independently of each other. This includes complete separation of the Company's procurement activities from the affiliated marketing company's procurement activities.

SECTION VII
PART 22 - STANDARDS OF CONDUCT

8) Company shall not condition or tie its agreements for gas supply or for the release of interstate pipeline capacity to any agreement by a Retail Natural Gas Supplier, customer or other third party in which its marketing affiliate is involved.

9) Company and its marketing affiliate shall keep separate books of accounts and records.

10) Neither Company nor its marketing affiliate personnel shall communicate to any customer, Retail Natural Gas Supplier or third party the idea that any advantage might accrue for such customer, Retail Natural Gas Supplier or third party in the use of Company's service as a result of that customer's, Retail Natural Gas Supplier's or other third party's dealing with its marketing affiliate.

11) Company shall establish a complaint procedure for issues concerning compliance with these standards of conduct. All complaints, whether written or verbal, shall be referred to Columbia's General Counsel or his/her designee. The General Counsel or his/her designee shall orally acknowledge the complaint to the complainant within five (5) working days of receipt. The General Counsel or his/her designee shall prepare a written statement of the complaint which shall contain the name of the complainant and a detailed factual report of the complaint, including all relevant dates, companies involved, employees involved, and specific claim. The General Counsel or his/her designee shall communicate the results of the preliminary investigation to the complainant in writing within thirty (30) days after the complaint was received including a description of any course of action, which was taken. The General Counsel or his/her designee shall keep a file with all such complaint statements for a period of not less than three years.

12) If Company offers any Retail Natural Gas Supplier or any Retail Natural Gas Supplier's customers a discount or fee waiver for transportation services, balancing, meters or meter installation, storage or any other service offered to Retail Natural Gas Suppliers. Company must, upon request, prospectively offer such discounts or fee waivers to all similarly situated Retail Natural Gas Suppliers or Retail Natural Gas Suppliers' customers under similar terms and conditions.

13) Columbia Gas of Ohio's name or logo will not be used in its marketing affiliate's promotional material, unless the promotional material discloses in plain, legible or audible language, on the first page or at the first point where Columbia Gas of Ohio's name or logo appears, that its marketing affiliate is not the same company as Columbia Gas of Ohio. Columbia Gas of Ohio is also prohibited from participating in exclusive joint activities with its marketing affiliate including advertising, marketing, sales calls or joint proposals to any existing or potential customers.

Exhibit C
Ohio Admin. Code 4901:1-19-06(C)(4)
Cross-Subsidization of Services

As required by Ohio Admin. Code 4901:1-19-06(C)(4), Columbia states that it does not expect cross-subsidization of services to occur under its Alternative Regulation Plan. Extending Rider IRP, along with Columbia's monthly delivery charge rate design, will continue to significantly reduce the subsidization of lower-use customers that would result from a rate design based on volumetric rates for recovery of fixed distribution service costs.

Exhibit D
Ohio Admin. Code 4901:1-19-06(C)(5)
Compliance with Revised Code §§ 4905.35 and 4929.02

Revised Code § 4905.35

Columbia complies with Revised Code § 4905.35. Columbia's public utility services are available on a comparable and nondiscriminatory basis. Columbia does not presently offer any bundled regulated and unregulated services. Columbia does not base the availability of any regulated services or goods, or the availability of a discounted rate or improved quality, price, term or condition for any regulated services or goods, on the identity of the supplier of any other services or goods or on the purchase of any unregulated services or goods from Columbia. Columbia offers its regulated services or goods to all similarly situated customers, including any persons with which it is affiliated or which it controls, under comparable terms and conditions.

Additionally, Columbia's approved Standard of Conduct (First Revised Tariff Sheet No. 22, Section VII) (attached in Exhibit B) requires Columbia to administer its CHOICE® program, and its tariffs more generally, in a nondiscriminatory and non-preferential manner, making all untariffed services equally available to all.

Revised Code § 4929.02

Revised Code § 4929.02 sets forth the state policy regarding natural gas services and goods. Columbia substantially complies with those policies. Columbia's Gas Transportation Service Program and CHOICE® Program both offer unbundled and comparable natural gas services and goods alternatives that allow customers to choose the supplier, price, terms, and other conditions that meet their needs. Those programs promote diversity of natural gas supplies and suppliers, by giving consumers effective control over the selection of those supplies and suppliers.

Extending Columbia's Rider IRP will further advance Ohio's policies. By ensuring Columbia can continue to timely recover its investments in replacing and repairing aging infrastructure, the plan will enhance Columbia's ability to continue offering adequate, reliable, and reasonably priced natural gas goods and services. As described in the plan, the Commission will continue to review and approve customer prices, so those prices will remain reasonable.

Columbia has worked proactively with stakeholders in Ohio to implement unbundled and ancillary service offerings that provide customers with effective and convenient choices to meet their natural gas supply needs. Columbia's large Stakeholder Group has addressed and resolved issues related to the changes in the provision and delivery of natural gas service. As discussed above in Columbia's discussion of its Commission-authorized exempt services, the Stakeholder process has resulted in the creation and implementation of Columbia's SSO and SCO auction process for procurement of natural gas commodity supplies.

Implementing these proposals, along with Columbia's existing service programs, will ensure continued and enhanced compliance with the policies contained in Revised Code §§ 4905.35 and 4929.02.

Exhibit E
Ohio Admin. Code 4901:1-19-06(C)(6)
List of Witnesses

Pursuant to Ohio Admin. Code 4901:1-19-06(C)(6), Columbia provides the following list of witnesses in support of its application and the corresponding exhibits each are sponsoring:

(1) Melissa Thompson, Columbia's Director of Regulatory Policy, will summarize Columbia's application, review Columbia's experience under the existing IRP, address the various requirements in the Ohio Revised Code and Ohio Administrative Code that specifically relate to alternative rate filings, and testify to the justness and reasonableness of Columbia's request to continue its IRP. Ms. Thompson is sponsoring Exhibits A – F.

(2) Donald Ayers, Columbia's Director of Construction, will describe Columbia's AMRP and provide information to support extending that program. Mr. Ayers is also sponsoring Exhibit A.

(3) Diana Beil, Columbia's Regulatory Programs Manager, will explain the underlying accounting. Ms. Beil is sponsoring Exhibit G.

Each witness's testimony is being filed contemporaneous with this Application.

Exhibit F
Current Tariff Schedules

RIDER IRP – INFRASTRUCTURE REPLACEMENT PROGRAM RIDER

APPLICABILITY

Applicable to all customer accounts served under rate schedules SGS, GS and LGS.

DESCRIPTION

An additional charge per account per month, regardless of gas consumed, to recover costs associated with:

a) **Riser and Hazardous Customer Service Line Replacement Program** - The replacement of customer-owned Natural Gas Risers identified in the November 24, 2006 Report by the Staff of the Public Utilities Commission of Ohio in Case No. 05-463-GA-COI as prone to failure and the maintenance, repair and replacement of hazardous customer-owned service lines.
b) **Accelerated Mains Replacement Program** – The replacement of bare steel and cast iron or wrought iron main lines, and associated company and customer-owned metallic service lines.
c) **Automated Meter Reading Devices Program** – The installation of automated meter reading devices on meters located at customer premises.

This Rider shall be calculated annually pursuant to a Notice filed no later than November 30 of each year based on nine months of actual data and three months of estimated data for the calendar year. The filing shall be updated by no later than February 28 of the following year to reflect the use of actual calendar year data. Such adjustments to the Rider will become effective with bills rendered on and after the first billing unit of May of each year.

RATE

Rate SGS, Small General Service	$7.65/Month
Rate GS, General Service	$57.34/Month
Rate LGS, Large General Service	$1,753.76/Month

RIDER IRP – INFRASTRUCTURE REPLACEMENT PROGRAM RIDER

APPLICABILITY

Applicable to all customer accounts served under rate schedules SGTS, GTS and LGTS.

DESCRIPTION

An additional charge per account per month, regardless of gas consumed, to recover costs associated with:

a) **Riser and Hazardous Customer Service Line Replacement Program -** The replacement of customer-owned Natural Gas Risers identified in the November 24, 2006 Report by the Staff of the Public Utilities Commission of Ohio in Case No. 05-463-GA-COI as prone to failure and the maintenance, repair and replacement of hazardous customer-owned service lines.
b) **Accelerated Mains Replacement Program –** The replacement of bare steel and cast iron or wrought iron main lines, and associated company and customer-owned metallic service lines.
c) **Automated Meter Reading Devices Program –** The installation of automated meter reading devices on meters located inside customer's premises.

This Rider shall be calculated annually pursuant to a Notice filed no later than November 30 of each year based on nine months of actual data and three months of estimated data for the calendar year. The filing shall be updated by no later than February 28 of the following year to reflect the use of actual calendar year data. Such adjustments to the Rider will become effective with bills rendered on and after the first billing unit of May of each year.

RATE

Rate SGTS, Small General Transportation Service	$7.65/Month
Rate GTS, General Transportation Service	$57.34/Month
Rate LGTS, Large General Transportation Service	$1,753.76/Month

SECTION VII
PART 29 - BILLING ADJUSTMENTS

RIDER IRP –
INFRASTRUCTURE REPLACEMENT PROGRAM RIDER

29.3 APPLICABILITY

Applicable to all customer accounts served under rate schedules FRSGTS, FRGTS, FRLGTS.

29.4 DESCRIPTION

An additional charge per account per month, regardless of gas consumed, to recover costs associated with:

a) **Riser and Hazardous Customer Service Line Replacement Program** - The replacement of customer-owned Natural Gas Risers identified in the November 24, 2006 Report by the Staff of the Public Utilities Commission of Ohio in Case No. 05-463-GA-COI as prone to failure and the maintenance, repair and replacement of hazardous customer-owned service lines.
b) **Accelerated Mains Replacement Program** – The replacement of bare steel and cast iron or wrought iron main lines, and associated company and customer-owned metallic service lines.
c) **Automated Meter Reading Devices Program** – The installation of automated meter reading devices on meters located inside customer's premises.

This Rider shall be calculated annually pursuant to a Notice filed no later than November 30 of each year based on nine months of actual data and three months of estimated data for the calendar year. The filing shall be updated by no later than February 28 of the following year to reflect the use of actual calendar year data. Such adjustments to the Rider will become effective with bills rendered on and after the first billing unit of May of each year.

29.5 RATE

Rate FRSGTS, Full Requirements Small General Transportation Service	\$7.65/Month
Rate FRGTS Full Requirements General Transportation Service	\$57.34/Month
Rate FRLGTS, Full Requirements Large General Transportation Service	\$1,753.76/Month

Exhibit G
Typical Bill Comparison

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE SMALL GENERAL SALES SERVICE (SGS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 1 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS CURRENT BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**SMALL GENERAL SERVICE SALES SERVICE**													
2	ALL GAS USED		0.8141	0.8141	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		28.01	29.31	1.3000	4.6%								
4	MONTHLY DELIVERY CHARGE YEAR 2		29.31	30.61	1.3000	4.4%								
5	MONTHLY DELIVERY CHARGE YEAR 3		30.61	31.91	1.3000	4.2%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.91	33.21	1.3000	4.1%								
7	MONTHLY DELIVERY CHARGE YEAR 5		33.21	34.51	1.3000	3.9%								
8	YEAR 1	7.0					36.56	37.93	1.36	3.7%	35.43	71.99	73.36	1.9%
9	YEAR 2	7.0					37.93	39.29	1.36	3.6%	35.43	73.36	74.72	1.9%
10	YEAR 3	7.0					39.29	40.65	1.36	3.5%	35.43	74.72	76.08	1.8%
11	YEAR 4	7.0					40.65	42.02	1.36	3.4%	35.43	76.08	77.45	1.8%
12	YEAR 5	7.0					42.02	43.38	1.36	3.2%	35.43	77.45	78.81	1.8%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX RATE		4.987%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE SMALL GENERAL SALES SERVICE - SCHOOLS (SGS - SCHOOLS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 2 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS CURRENT BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**SMALL GENERAL SERVICE SALES SERVICE - SCHOOLS**													
2	ALL GAS USED		0.8141	0.8141	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		27.12	28.42	1.3000	4.8%								
4	MONTHLY DELIVERY CHARGE YEAR 2		28.42	29.72	1.3000	4.6%								
5	MONTHLY DELIVERY CHARGE YEAR 3		29.72	31.02	1.3000	4.4%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.02	32.32	1.3000	4.2%								
7	MONTHLY DELIVERY CHARGE YEAR 5		32.32	33.62	1.3000	4.0%								
8	YEAR 1	7.0					35.63	36.99	1.36	3.8%	35.43	71.06	72.42	1.9%
9	YEAR 2	7.0					36.99	38.36	1.36	3.7%	35.43	72.42	73.79	1.9%
10	YEAR 3	7.0					38.36	39.72	1.36	3.6%	35.43	73.79	75.15	1.8%
11	YEAR 4	7.0					39.72	41.09	1.36	3.4%	35.43	75.15	76.52	1.8%
12	YEAR 5	7.0					41.09	42.45	1.36	3.3%	35.43	76.52	77.88	1.8%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX RATE		4.987%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE SMALL GENERAL TRANSPORTATION SERVICE (SGTS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**SMALL GENERAL TRANSPORTATION SERVICE**													
2	ALL GAS USED		0.3767	0.3767	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		28.01	29.31	1.3000	4.6%								
4	MONTHLY DELIVERY CHARGE YEAR 2		29.31	30.61	1.3000	4.4%								
5	MONTHLY DELIVERY CHARGE YEAR 3		30.61	31.91	1.3000	4.2%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.91	33.21	1.3000	4.1%								
7	MONTHLY DELIVERY CHARGE YEAR 5		33.21	34.51	1.3000	3.9%								
8	YEAR 1	7.0					33.35	34.71	1.36	4.1%	36.28	69.62	70.99	2.0%
9	YEAR 2	7.0					34.71	36.08	1.36	3.9%	36.28	70.99	72.35	1.9%
10	YEAR 3	7.0					36.08	37.44	1.36	3.8%	36.28	72.35	73.72	1.9%
11	YEAR 4	7.0					37.44	38.81	1.36	3.6%	36.28	73.72	75.08	1.9%
12	YEAR 5	7.0					38.81	40.17	1.36	3.5%	36.28	75.08	76.45	1.8%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX		4.987%											
17	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE SMALL GENERAL TRANSPORTATION SERVICE (SGTS - SCHOOLS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**SMALL GENERAL TRANSPORTATION SERVICE - SCHOOLS**													
2	ALL GAS USED		0.3767	0.3767	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		27.12	28.42	1.3000	4.8%								
4	MONTHLY DELIVERY CHARGE YEAR 2		28.42	29.72	1.3000	4.6%								
5	MONTHLY DELIVERY CHARGE YEAR 3		29.72	31.02	1.3000	4.4%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.02	32.32	1.3000	4.2%								
7	MONTHLY DELIVERY CHARGE YEAR 5		32.32	33.62	1.3000	4.0%								
8	YEAR 1	7.0					32.41	33.78	1.36	4.2%	36.28	68.69	70.05	2.0%
9	YEAR 2	7.0					33.78	35.14	1.36	4.0%	36.28	70.05	71.42	1.9%
10	YEAR 3	7.0					35.14	36.51	1.36	3.9%	36.28	71.42	72.78	1.9%
11	YEAR 4	7.0					36.51	37.87	1.36	3.7%	36.28	72.78	74.15	1.9%
12	YEAR 5	7.0					37.87	39.24	1.36	3.6%	36.28	74.15	75.51	1.8%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX		4.987%											
17	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE (FRSGTS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE**													
2	ALL GAS USED		0.7964	0.7964	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		28.01	29.31	1.3000	4.6%								
4	MONTHLY DELIVERY CHARGE YEAR 2		29.31	30.61	1.3000	4.4%								
5	MONTHLY DELIVERY CHARGE YEAR 3		30.61	31.91	1.3000	4.2%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.91	33.21	1.3000	4.1%								
7	MONTHLY DELIVERY CHARGE YEAR 5		33.21	34.51	1.3000	3.9%								
8	YEAR 1	7.0					36.43	37.80	1.36	3.7%	36.28	72.71	74.07	1.9%
9	YEAR 2	7.0					37.80	39.16	1.36	3.6%	36.28	74.07	75.44	1.8%
10	YEAR 3	7.0					39.16	40.52	1.36	3.5%	36.28	75.44	76.80	1.8%
11	YEAR 4	7.0					40.52	41.89	1.36	3.4%	36.28	76.80	78.17	1.8%
12	YEAR 5	7.0					41.89	43.25	1.36	3.3%	36.28	78.17	79.53	1.7%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX		4.987%											
17	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE (FRSGTS - SCO)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 6 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE - STANDARD CHOICE OFFER (SCO)**													
2	ALL GAS USED		0.7964	0.7964	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		28.01	29.31	1.3000	4.6%								
4	MONTHLY DELIVERY CHARGE YEAR 2		29.31	30.61	1.3000	4.4%								
5	MONTHLY DELIVERY CHARGE YEAR 3		30.61	31.91	1.3000	4.2%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.91	33.21	1.3000	4.1%								
7	MONTHLY DELIVERY CHARGE YEAR 5		33.21	34.51	1.3000	3.9%								
8	YEAR 1	7.0					36.43	37.80	1.36	3.7%	36.28	72.71	74.07	1.9%
9	YEAR 2	7.0					37.80	39.16	1.36	3.6%	36.28	74.07	75.44	1.8%
10	YEAR 3	7.0					39.16	40.52	1.36	3.5%	36.28	75.44	76.80	1.8%
11	YEAR 4	7.0					40.52	41.89	1.36	3.4%	36.28	76.80	78.17	1.8%
12	YEAR 5	7.0					41.89	43.25	1.36	3.3%	36.28	78.17	79.53	1.7%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX		4.987%											
17	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE (FRSGTS - SCHOOLS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 7 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS SMALL GENERAL TRANSPORTATION SERVICE - SCHOOLS**													
2	ALL GAS USED		0.7964	0.7964	-	0.0%					4.8210			
3	MONTHLY DELIVERY CHARGE YEAR 1		27.12	28.42	1.3000	4.8%								
4	MONTHLY DELIVERY CHARGE YEAR 2		28.42	29.72	1.3000	4.6%								
5	MONTHLY DELIVERY CHARGE YEAR 3		29.72	31.02	1.3000	4.4%								
6	MONTHLY DELIVERY CHARGE YEAR 4		31.02	32.32	1.3000	4.2%								
7	MONTHLY DELIVERY CHARGE YEAR 5		32.32	33.62	1.3000	4.0%								
8	YEAR 1	7.0					35.50	36.86	1.36	3.8%	36.28	71.77	73.14	1.9%
9	YEAR 2	7.0					36.86	38.23	1.36	3.7%	36.28	73.14	74.50	1.9%
10	YEAR 3	7.0					38.23	39.59	1.36	3.6%	36.28	74.50	75.87	1.8%
11	YEAR 4	7.0					39.59	40.96	1.36	3.4%	36.28	75.87	77.23	1.8%
12	YEAR 5	7.0					40.96	42.32	1.36	3.3%	36.28	77.23	78.60	1.8%
13	EXCISE TAX FIRST 100		0.1593											
14	EXCISE TAX NEXT 1900		0.0877											
15	EXCISE TAX OVER 2000		0.0411											
16	GROSS RECEIPTS TAX		4.987%											
17	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE GENERAL SERVICE (GS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**GENERAL SERVICE**													
2	FIRST 25 MCF		2.3104	2.3104	-						4.8210			
3	NEXT 75 MCF		1.8921	1.8921	-									
4	Over 100 MCF		1.6246	1.6246	-									
5	MONTHLY DELIVERY CHARGE YEAR 1		119.07	118.68	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		118.68	131.69	13.0100	11.0%								
7	MONTHLY DELIVERY CHARGE YEAR 3		131.69	144.71	13.0200	9.9%								
8	MONTHLY DELIVERY CHARGE YEAR 4		144.71	158.00	13.2900	9.2%								
9	MONTHLY DELIVERY CHARGE YEAR 5		158.00	171.41	13.4100	8.5%								
10	YEAR 1	25.0					189.83	189.42	(0.41)	-0.2%	126.54	316.37	315.96	-0.1%
11	YEAR 1	100.0					351.36	350.95	(0.41)	-0.1%	506.14	857.50	857.09	0.0%
12	YEAR 1	500.0					1,070.43	1,070.02	(0.41)	0.0%	2,530.71	3,601.15	3,600.74	0.0%
13	YEAR 1	1,500.0					2,868.13	2,867.72	(0.41)	0.0%	7,592.13	10,460.26	10,459.85	0.0%
14	YEAR 2	25.0					189.42	203.08	13.66	7.2%	126.54	315.96	329.61	4.3%
15	YEAR 2	100.0					350.95	364.61	13.66	3.9%	506.14	857.09	870.75	1.6%
16	YEAR 2	500.0					1,070.02	1,083.68	13.66	1.3%	2,530.71	3,600.74	3,614.40	0.4%
17	YEAR 2	1,500.0					2,867.72	2,881.38	13.66	0.5%	7,592.13	10,459.85	10,473.51	0.1%
18	YEAR 3	25.0					203.08	216.75	13.67	6.7%	126.54	329.61	343.28	4.1%
19	YEAR 3	100.0					364.61	378.28	13.67	3.7%	506.14	870.75	884.42	1.6%
20	YEAR 3	500.0					1,083.68	1,097.35	13.67	1.3%	2,530.71	3,614.40	3,628.06	0.4%
21	YEAR 3	1,500.0					2,881.38	2,895.05	13.67	0.5%	7,592.13	10,473.51	10,487.18	0.1%
22	YEAR 4	25.0					216.75	230.70	13.95	6.4%	126.54	343.28	357.24	4.1%
23	YEAR 4	100.0					378.28	392.23	13.95	3.7%	506.14	884.42	898.37	1.6%
24	YEAR 4	500.0					1,097.35	1,111.31	13.95	1.3%	2,530.71	3,628.06	3,642.02	0.4%
25	YEAR 4	1,500.0					2,895.05	2,909.00	13.95	0.5%	7,592.13	10,487.18	10,501.13	0.1%
26	YEAR 5	25.0					230.70	244.78	14.08	6.1%	126.54	357.24	371.32	3.9%
27	YEAR 5	100.0					392.23	406.31	14.08	3.6%	506.14	898.37	912.45	1.6%
28	YEAR 5	500.0					1,111.31	1,125.38	14.08	1.3%	2,530.71	3,642.02	3,656.10	0.4%
29	YEAR 5	1,500.0					2,909.00	2,923.08	14.08	0.5%	7,592.13	10,501.13	10,515.21	0.1%
30	EXCISE TAX FIRST 100		0.1593											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE GENERAL SERVICE SCHOOLS (GS - SCHOOLS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL FUEL COST ADDITIONS ROPOSED BII (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**GENERAL SERVICE SCHOOLS**													
2	FIRST 25 MCF		2.2245	2.2245	-						4.8210			
3	NEXT 75 MCF		1.8271	1.8271	-									
4	Over 100 MCF		1.573	1.5730										
5	MONTHLY DELIVERY CHARGE YEAR 1		117.94	117.55	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		117.55	130.56	13.0100	11.1%								
7	MONTHLY DELIVERY CHARGE YEAR 3		130.56	143.58	13.0200	10.0%								
8	MONTHLY DELIVERY CHARGE YEAR 4		143.58	156.87	13.2900	9.3%								
9	MONTHLY DELIVERY CHARGE YEAR 5		156.87	170.28	13.4100	8.5%								
10	YEAR 1	25.0					186.39	185.98	(0.41)	-0.2%	126.54	312.92	312.51	-0.1%
11	YEAR 1	100.0					342.80	342.39	(0.41)	-0.1%	506.14	848.94	848.53	0.0%
12	YEAR 1	500.0					1,040.21	1,039.80	(0.41)	0.0%	2,530.71	3,570.92	3,570.51	0.0%
13	YEAR 1	1,500.0					2,783.73	2,783.32	(0.41)	0.0%	7,592.13	10,375.86	10,375.45	0.0%
14	YEAR 2	25.0					185.98	199.64	13.66	7.3%	126.54	312.51	326.17	4.4%
15	YEAR 2	100.0					342.39	356.05	13.66	4.0%	506.14	848.53	862.19	1.6%
16	YEAR 2	500.0					1,039.80	1,053.46	13.66	1.3%	2,530.71	3,570.51	3,584.17	0.4%
17	YEAR 2	1,500.0					2,783.32	2,796.97	13.66	0.5%	7,592.13	10,375.45	10,389.11	0.1%
18	YEAR 3	25.0					199.64	213.31	13.67	6.8%	126.54	326.17	339.84	4.2%
19	YEAR 3	100.0					356.05	369.72	13.67	3.8%	506.14	862.19	875.86	1.6%
20	YEAR 3	500.0					1,053.46	1,067.12	13.67	1.3%	2,530.71	3,584.17	3,597.84	0.4%
21	YEAR 3	1,500.0					2,796.97	2,810.64	13.67	0.5%	7,592.13	10,389.11	10,402.78	0.1%
22	YEAR 4	25.0					213.31	227.26	13.95	6.5%	126.54	339.84	353.80	4.1%
23	YEAR 4	100.0					369.72	383.67	13.95	3.8%	506.14	875.86	889.81	1.6%
24	YEAR 4	500.0					1,067.12	1,081.08	13.95	1.3%	2,530.71	3,597.84	3,611.79	0.4%
25	YEAR 4	1,500.0					2,810.64	2,824.60	13.95	0.5%	7,592.13	10,402.78	10,416.73	0.1%
26	YEAR 5	25.0					227.26	241.34	14.08	6.2%	126.54	353.80	367.87	4.0%
27	YEAR 5	100.0					383.67	397.75	14.08	3.7%	506.14	889.81	903.89	1.6%
28	YEAR 5	500.0					1,081.08	1,095.16	14.08	1.3%	2,530.71	3,611.79	3,625.87	0.4%
29	YEAR 5	1,500.0					2,824.60	2,838.68	14.08	0.5%	7,592.13	10,416.73	10,430.81	0.1%
30	*EXCISE TAX FIRST 100*		*0.1593*											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE GENERAL TRANSPORTATION SERVICE(GTS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL FUEL COST ADDITIONS ROPOSED BI (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**GENERAL TRANSPORTATION SERVICE**													
2	FIRST 25 MCF		1.873	1.873	-						4.8210			
3	NEXT 75 MCF		1.4547	1.4547	-									
4	Over 100 MCF		1.1872	1.1872										
5	MONTHLY DELIVERY CHARGE YEAR 1		119.07	118.68	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		118.68	131.69	13.0100	11.0%								
7	MONTHLY DELIVERY CHARGE YEAR 3		131.69	144.71	13.0200	9.9%								
8	MONTHLY DELIVERY CHARGE YEAR 4		144.71	158.00	13.2900	9.2%								
9	MONTHLY DELIVERY CHARGE YEAR 5		158.00	171.41	13.4100	8.5%								
10	YEAR 1	25.0					178.35	177.94	(0.41)	-0.2%	129.56	307.91	307.50	-0.1%
11	YEAR 1	100.0					305.44	305.03	(0.41)	-0.1%	518.26	823.69	823.28	0.0%
12	YEAR 1	500.0					840.83	840.42	(0.41)	0.0%	2,591.29	3,432.12	3,431.71	0.0%
13	YEAR 1	1,500.0					2,179.31	2,178.90	(0.41)	0.0%	7,773.86	9,953.17	9,952.76	0.0%
14	YEAR 2	25.0					177.94	191.60	13.66	7.7%	129.56	307.50	321.16	4.4%
15	YEAR 2	100.0					305.03	318.69	13.66	4.5%	518.26	823.28	836.94	1.7%
16	YEAR 2	500.0					840.42	854.08	13.66	1.6%	2,591.29	3,431.71	3,445.36	0.4%
17	YEAR 2	1,500.0					2,178.90	2,192.56	13.66	0.6%	7,773.86	9,952.76	9,966.42	0.1%
18	YEAR 3	25.0					191.60	205.27	13.67	7.1%	129.56	321.16	334.83	4.3%
19	YEAR 3	100.0					318.69	332.35	13.67	4.3%	518.26	836.94	850.61	1.6%
20	YEAR 3	500.0					854.08	867.75	13.67	1.6%	2,591.29	3,445.36	3,459.03	0.4%
21	YEAR 3	1,500.0					2,192.56	2,206.23	13.67	0.6%	7,773.86	9,966.42	9,980.09	0.1%
22	YEAR 4	25.0					205.27	219.22	13.95	6.8%	129.56	334.83	348.79	4.2%
23	YEAR 4	100.0					332.35	346.31	13.95	4.2%	518.26	850.61	864.56	1.6%
24	YEAR 4	500.0					867.75	881.70	13.95	1.6%	2,591.29	3,459.03	3,472.99	0.4%
25	YEAR 4	1,500.0					2,206.23	2,220.18	13.95	0.6%	7,773.86	9,980.09	9,994.04	0.1%
26	YEAR 5	25.0					219.22	233.30	14.08	6.4%	129.56	348.79	362.86	4.0%
27	YEAR 5	100.0					346.31	360.39	14.08	4.1%	518.26	864.56	878.64	1.6%
28	YEAR 5	500.0					881.70	895.78	14.08	1.6%	2,591.29	3,472.99	3,487.07	0.4%
29	YEAR 5	1,500.0					2,220.18	2,234.26	14.08	0.6%	7,773.86	9,994.04	10,008.12	0.1%
30	EXCISE TAX FIRST 100		0.1593											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											
34	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE GENERAL TRANSPORTATION SERVICE - SCHOOLS (GTS - SCHOOLS)

EXHIBIT G
SHEET 11 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL FUEL COST ADDITIONS ROPOSED BII (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**SMALL GENERAL TRANSPORTATION SERVICE - SCHOOLS**													
2	FIRST 25 MCF		1.7871	1.7871	-						4.8210			
3	NEXT 75 MCF		1.3897	1.3897	-									
4	Over 100 MCF		1.1356	1.1356										
5	MONTHLY DELIVERY CHARGE YEAR 1		117.94	117.55	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		117.55	130.56	13.0100	11.1%								
7	MONTHLY DELIVERY CHARGE YEAR 3		130.56	143.58	13.0200	10.0%								
8	MONTHLY DELIVERY CHARGE YEAR 4		143.58	156.87	13.2900	9.3%								
9	MONTHLY DELIVERY CHARGE YEAR 5		156.87	170.28	13.4100	8.5%								
10	YEAR 1	25.0					174.91	174.50	(0.41)	-0.2%	129.56	304.47	304.06	-0.1%
11	YEAR 1	100.0					296.88	296.47	(0.41)	-0.1%	518.26	815.13	814.73	-0.1%
12	YEAR 1	500.0					810.60	810.19	(0.41)	-0.1%	2,591.29	3,401.89	3,401.48	0.0%
13	YEAR 1	1,500.0					2,094.91	2,094.50	(0.41)	0.0%	7,773.86	9,868.77	9,868.36	0.0%
14	YEAR 2	25.0					174.50	188.16	13.66	7.8%	129.56	304.06	317.72	4.5%
15	YEAR 2	100.0					296.47	310.13	13.66	4.6%	518.26	814.73	828.38	1.7%
16	YEAR 2	500.0					810.19	823.85	13.66	1.7%	2,591.29	3,401.48	3,415.14	0.4%
17	YEAR 2	1,500.0					2,094.50	2,108.15	13.66	0.7%	7,773.86	9,868.36	9,882.02	0.1%
18	YEAR 3	25.0					188.16	201.83	13.67	7.3%	129.56	317.72	331.39	4.3%
19	YEAR 3	100.0					310.13	323.80	13.67	4.4%	518.26	828.38	842.05	1.7%
20	YEAR 3	500.0					823.85	837.52	13.67	1.7%	2,591.29	3,415.14	3,428.81	0.4%
21	YEAR 3	1,500.0					2,108.15	2,121.82	13.67	0.6%	7,773.86	9,882.02	9,895.69	0.1%
22	YEAR 4	25.0					201.83	215.78	13.95	6.9%	129.56	331.39	345.34	4.2%
23	YEAR 4	100.0					323.80	337.75	13.95	4.3%	518.26	842.05	856.01	1.7%
24	YEAR 4	500.0					837.52	851.47	13.95	1.7%	2,591.29	3,428.81	3,442.76	0.4%
25	YEAR 4	1,500.0					2,121.82	2,135.78	13.95	0.7%	7,773.86	9,895.69	9,909.64	0.1%
26	YEAR 5	25.0					215.78	229.86	14.08	6.5%	129.56	345.34	359.42	4.1%
27	YEAR 5	100.0					337.75	351.83	14.08	4.2%	518.26	856.01	870.08	1.6%
28	YEAR 5	500.0					851.47	865.55	14.08	1.7%	2,591.29	3,442.76	3,456.84	0.4%
29	YEAR 5	1,500.0					2,135.78	2,149.86	14.08	0.7%	7,773.86	9,909.64	9,923.72	0.1%
30	EXCISE TAX FIRST 100		0.1593											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											
34	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS GENERAL TRANSPORTATION SERVICE - (FRGTS)

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL FUEL COST ADDITIONS ROPOSED BII (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS GENERAL TRANSPORTATION SERVICE**													
2	FIRST 25 MCF		2.2927	2.2927	-						4.8210			
3	NEXT 75 MCF		1.8744	1.8744	-									
4	Over 100 MCF		1.6069	1.6069										
5	MONTHLY DELIVERY CHARGE YEAR 1		119.07	118.68	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		118.68	131.69	13.0100	11.0%								
7	MONTHLY DELIVERY CHARGE YEAR 3		131.69	144.71	13.0200	9.9%								
8	MONTHLY DELIVERY CHARGE YEAR 4		144.71	158.00	13.2900	9.2%								
9	MONTHLY DELIVERY CHARGE YEAR 5		158.00	171.41	13.4100	8.5%								
10	YEAR 1	25.0					189.37	188.96	(0.41)	-0.2%	129.56	318.93	318.52	-0.1%
11	YEAR 1	100.0					349.50	349.09	(0.41)	-0.1%	518.26	867.76	867.35	0.0%
12	YEAR 1	500.0					1,061.14	1,060.73	(0.41)	0.0%	2,591.29	3,652.43	3,652.02	0.0%
13	YEAR 1	1,500.0					2,840.25	2,839.84	(0.41)	0.0%	7,773.86	10,614.12	10,613.71	0.0%
14	YEAR 2	25.0					188.96	202.61	13.66	7.2%	129.56	318.52	332.18	4.3%
15	YEAR 2	100.0					349.09	362.75	13.66	3.9%	518.26	867.35	881.01	1.6%
16	YEAR 2	500.0					1,060.73	1,074.39	13.66	1.3%	2,591.29	3,652.02	3,665.68	0.4%
17	YEAR 2	1,500.0					2,839.84	2,853.50	13.66	0.5%	7,773.86	10,613.71	10,627.36	0.1%
18	YEAR 3	25.0					202.61	216.28	13.67	6.7%	129.56	332.18	345.85	4.1%
19	YEAR 3	100.0					362.75	376.42	13.67	3.8%	518.26	881.01	894.68	1.6%
20	YEAR 3	500.0					1,074.39	1,088.06	13.67	1.3%	2,591.29	3,665.68	3,679.35	0.4%
21	YEAR 3	1,500.0					2,853.50	2,867.17	13.67	0.5%	7,773.86	10,627.36	10,641.03	0.1%
22	YEAR 4	25.0					216.28	230.24	13.95	6.5%	129.56	345.85	359.80	4.0%
23	YEAR 4	100.0					376.42	390.37	13.95	3.7%	518.26	894.68	908.63	1.6%
24	YEAR 4	500.0					1,088.06	1,102.01	13.95	1.3%	2,591.29	3,679.35	3,693.30	0.4%
25	YEAR 4	1,500.0					2,867.17	2,881.12	13.95	0.5%	7,773.86	10,641.03	10,654.99	0.1%
26	YEAR 5	25.0					230.24	244.32	14.08	6.1%	129.56	359.80	373.88	3.9%
27	YEAR 5	100.0					390.37	404.45	14.08	3.6%	518.26	908.63	922.71	1.5%
28	YEAR 5	500.0					1,102.01	1,116.09	14.08	1.3%	2,591.29	3,693.30	3,707.38	0.4%
29	YEAR 5	1,500.0					2,881.12	2,895.20	14.08	0.5%	7,773.86	10,654.99	10,669.07	0.1%
30	EXCISE TAX FIRST 100		0.1593											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											
34	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS GENERAL TRANSPORTATION SERVICE - SCHOOLS (FRGTS - SCHOOLS)

EXHIBIT G
SHEET 13 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL FUEL COST ADDITIONS ROPOSED BII (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS GENERAL TRANSPORTATION SERVICE - SCHOOLS**													
2	FIRST 25 MCF		2.2068	2.2068	-						4.8210			
3	NEXT 75 MCF		1.8094	1.8094	-									
4	Over 100 MCF		1.5553	1.5553										
5	MONTHLY DELIVERY CHARGE YEAR 1		117.94	117.55	-0.3900	-0.3%								
6	MONTHLY DELIVERY CHARGE YEAR 2		117.55	130.56	13.0100	11.1%								
7	MONTHLY DELIVERY CHARGE YEAR 3		130.56	143.58	13.0200	10.0%								
8	MONTHLY DELIVERY CHARGE YEAR 4		143.58	156.87	13.2900	9.3%								
9	MONTHLY DELIVERY CHARGE YEAR 5		156.87	170.28	13.4100	8.5%								
10	YEAR 1	25.0					185.92	185.51	(0.41)	-0.2%	129.56	315.49	315.08	-0.1%
11	YEAR 1	100.0					340.94	340.53	(0.41)	-0.1%	518.26	859.20	858.79	0.0%
12	YEAR 1	500.0					1,030.91	1,030.51	(0.41)	0.0%	2,591.29	3,622.20	3,621.79	0.0%
13	YEAR 1	1,500.0					2,755.85	2,755.44	(0.41)	0.0%	7,773.86	10,529.71	10,529.30	0.0%
14	YEAR 2	25.0					185.51	199.17	13.66	7.4%	129.56	315.08	328.74	4.3%
15	YEAR 2	100.0					340.53	354.19	13.66	4.0%	518.26	858.79	872.45	1.6%
16	YEAR 2	500.0					1,030.51	1,044.16	13.66	1.3%	2,591.29	3,621.79	3,635.45	0.4%
17	YEAR 2	1,500.0					2,755.44	2,769.10	13.66	0.5%	7,773.86	10,529.30	10,542.96	0.1%
18	YEAR 3	25.0					199.17	212.84	13.67	6.9%	129.56	328.74	342.41	4.2%
19	YEAR 3	100.0					354.19	367.86	13.67	3.9%	518.26	872.45	886.12	1.6%
20	YEAR 3	500.0					1,044.16	1,057.83	13.67	1.3%	2,591.29	3,635.45	3,649.12	0.4%
21	YEAR 3	1,500.0					2,769.10	2,782.77	13.67	0.5%	7,773.86	10,542.96	10,556.63	0.1%
22	YEAR 4	25.0					212.84	226.80	13.95	6.6%	129.56	342.41	356.36	4.1%
23	YEAR 4	100.0					367.86	381.81	13.95	3.8%	518.26	886.12	900.07	1.6%
24	YEAR 4	500.0					1,057.83	1,071.79	13.95	1.3%	2,591.29	3,649.12	3,663.07	0.4%
25	YEAR 4	1,500.0					2,782.77	2,796.72	13.95	0.5%	7,773.86	10,556.63	10,570.58	0.1%
26	YEAR 5	25.0					226.80	240.87	14.08	6.2%	129.56	356.36	370.44	4.0%
27	YEAR 5	100.0					381.81	395.89	14.08	3.7%	518.26	900.07	914.15	1.6%
28	YEAR 5	500.0					1,071.79	1,085.86	14.08	1.3%	2,591.29	3,663.07	3,677.15	0.4%
29	YEAR 5	1,500.0					2,796.72	2,810.80	14.08	0.5%	7,773.86	10,570.58	10,584.66	0.1%
30	EXCISE TAX FIRST 100		0.1593											
31	EXCISE TAX NEXT 1900		0.0877											
32	EXCISE TAX OVER 2000		0.0411											
33	GROSS RECEIPTS TAX		4.987%											
34	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE LARGE GENERAL SERVICE (LGS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS PROPOSED BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**LARGE GENERAL SERVICE**													
2	FIRST 2,000 MCF		0.9476	0.9476	-	0.0%					4.8210			
3	NEXT 13,000 MCF		0.7886	0.7886	-	0.0%								
4	NEXT 85,000 MCF		0.7566	0.7566	-	0.0%								
5	Over 100,000 MCF		0.7106	0.7106	-	0.0%								
6	MONTHLY DELIVERY CHARGE - Year 1		3258.05	3,667.90	409.850	12.6%								
7	MONTHLY DELIVERY CHARGE - Year 2		3667.90	4118.40	450.500	12.3%								
8	MONTHLY DELIVERY CHARGE - Year 3		4118.40	4573.03	454.6300	11.0%								
9	MONTHLY DELIVERY CHARGE - Year 4		4573.03	5036.31	463.2800	10.1%								
10	MONTHLY DELIVERY CHARGE - Year 5		5036.31	5505.13	468.8200	9.3%								
11	YEAR 1	1,500.0					5,058.44	5,488.73	430.29	8.5%	7,592.13	12,650.58	13,080.87	3.4%
12	YEAR 1	6,500.0					9,521.75	9,952.04	430.29	4.5%	32,899.25	42,421.01	42,851.29	1.0%
13	YEAR 1	19,500.0					20,694.58	21,124.86	430.29	2.1%	98,697.75	119,392.33	119,822.62	0.4%
14	YEAR 2	1,500.0					5,488.73	5,961.70	472.97	8.6%	7,592.13	13,080.87	13,553.83	3.6%
15	YEAR 2	6,500.0					9,952.04	10,425.01	472.97	4.8%	32,899.25	42,851.29	43,324.26	1.1%
16	YEAR 2	19,500.0					21,124.86	21,597.83	472.97	2.2%	98,697.75	119,822.62	120,295.58	0.4%
17	YEAR 3	1,500.0					5,961.70	6,439.00	477.30	8.0%	7,592.13	13,553.83	14,031.13	3.5%
18	YEAR 3	6,500.0					10,425.01	10,902.31	477.30	4.6%	32,899.25	43,324.26	43,801.56	1.1%
19	YEAR 3	19,500.0					21,597.83	22,075.13	477.30	2.2%	98,697.75	120,295.58	120,772.89	0.4%
20	YEAR 4	1,500.0					6,439.00	6,925.38	486.38	7.6%	7,592.13	14,031.13	14,517.52	3.5%
21	YEAR 4	6,500.0					10,902.31	11,388.70	486.38	4.5%	32,899.25	43,801.56	44,287.95	1.1%
22	YEAR 4	19,500.0					22,075.13	22,561.52	486.38	2.2%	98,697.75	120,772.89	121,259.27	0.4%
23	YEAR 5	1,500.0					6,925.38	7,417.58	492.20	7.1%	7,592.13	14,517.52	15,009.72	3.4%
24	YEAR 5	6,500.0					11,388.70	11,880.90	492.20	4.3%	32,899.25	44,287.95	44,780.15	1.1%
25	YEAR 5	19,500.0					22,561.52	23,053.72	492.20	2.2%	98,697.75	121,259.27	121,751.47	0.4%
26	EXCISE TAX FIRST 100		0.1593											
27	EXCISE TAX NEXT 1900		0.0877											
28	EXCISE TAX OVER 2000		0.0411											
29	EXCISE TAX FLEXED RATE		0.0200											
30	GROSS RECEIPTS TAX		4.987%											
31	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE LARGE GENERAL TRANSPORTATION SERVICE (LGTS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 15 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL' FUEL COST ADDITIONS ROPOSED BIL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**LARGE GENERAL TRANSPORTATION SERVICE**													
2	FIRST 2,000 MCF		0.5102	0.5102	-	0.0%					4.8210			
3	NEXT 13,000 MCF		0.3512	0.3512	-	0.0%								
4	NEXT 85,000 MCF		0.3192	0.3192	-	0.0%								
5	Over 100,000 MCF		0.2732	0.2732	-	0.0%								
6	MONTHLY DELIVERY CHARGE - Year 1		3258.05	3667.90	409.8500	12.6%								
7	MONTHLY DELIVERY CHARGE - Year 2		3667.90	4118.40	450.5000	12.3%								
8	MONTHLY DELIVERY CHARGE - Year 3		4118.40	4573.03	454.6300	11.0%								
9	MONTHLY DELIVERY CHARGE - Year 4		4573.03	5036.31	463.2800	10.1%								
10	MONTHLY DELIVERY CHARGE - Year 5		5036.31	5505.13	468.8200	9.3%								
11	YEAR 1	1,500.0					4,369.62	4,799.91	430.29	9.8%	7,773.86	12,143.48	12,573.77	3.5%
12	YEAR 1	6,500.0					6,536.87	6,967.16	430.29	6.6%	33,686.74	40,223.61	40,653.90	1.1%
13	YEAR 1	19,500.0					11,739.92	12,170.21	430.29	3.7%	101,060.21	112,800.13	113,230.42	0.4%
14	YEAR 2	1,500.0					4,799.91	5,272.88	472.97	9.9%	7,773.86	12,573.77	13,046.74	3.8%
15	YEAR 2	6,500.0					6,967.16	7,440.12	472.97	6.8%	33,686.74	40,653.90	41,126.86	1.2%
16	YEAR 2	19,500.0					12,170.21	12,643.17	472.97	3.9%	101,060.21	113,230.42	113,703.39	0.4%
17	YEAR 3	1,500.0					5,272.88	5,750.18	477.30	9.1%	7,773.86	13,046.74	13,524.04	3.7%
18	YEAR 3	6,500.0					7,440.12	7,917.43	477.30	6.4%	33,686.74	41,126.86	41,604.16	1.2%
19	YEAR 3	19,500.0					12,643.17	13,120.48	477.30	3.8%	101,060.21	113,703.39	114,180.69	0.4%
20	YEAR 4	1,500.0					5,750.18	6,236.56	486.38	8.5%	7,773.86	13,524.04	14,010.43	3.6%
21	YEAR 4	6,500.0					7,917.43	8,403.81	486.38	6.1%	33,686.74	41,604.16	42,090.55	1.2%
22	YEAR 4	19,500.0					13,120.48	13,606.86	486.38	3.7%	101,060.21	114,180.69	114,667.07	0.4%
23	YEAR 5	1,500.0					6,236.56	6,728.76	492.20	7.9%	7,773.86	14,010.43	14,502.63	3.5%
24	YEAR 5	6,500.0					8,403.81	8,896.01	492.20	5.9%	33,686.74	42,090.55	42,582.75	1.2%
25	YEAR 5	19,500.0					13,606.86	14,099.06	492.20	3.6%	101,060.21	114,667.07	115,159.27	0.4%
26	EXCISE TAX FIRST 100		0.1593											
27	EXCISE TAX NEXT 1900		0.0877											
28	EXCISE TAX OVER 2000		0.0411											
29	EXCISE TAX FLEXED RATE		0.0200											
30	GROSS RECEIPTS TAX		4.987%											
31	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE FULL REQUIREMENTS LARGE GENERAL TRANSPORTATION SERVICE (FRLGTS)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

EXHIBIT G
SHEET 16 OF 17
WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHL' FUEL COST ADDITIONS 'ROPOSED BIL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**FULL REQUIREMENTS LARGE GENERAL TRANSPORTATION SERVICE**													
2	FIRST 2,000 MCF		0.9299	0.9299	-	0.0%					4.8210			
3	NEXT 13,000 MCF		0.7709	0.7709	-	0.0%								
4	NEXT 85,000 MCF		0.7389	0.7389	-	0.0%								
5	Over 100,000 MCF		0.6929	0.6929	-	0.0%								
6	MONTHLY DELIVERY CHARGE - Year 1		3258.05	3667.90	409.8500	12.6%								
7	MONTHLY DELIVERY CHARGE - Year 2		3667.90	4118.40	450.5000	12.3%								
8	MONTHLY DELIVERY CHARGE - Year 3		4118.40	4573.03	454.6300	11.0%								
9	MONTHLY DELIVERY CHARGE - Year 4		4573.03	5036.31	463.2800	10.1%								
10	MONTHLY DELIVERY CHARGE - Year 5		5036.31	5505.13	468.8200	9.3%								
11	YEAR 1	1,500.0					5,030.57	5,460.86	430.29	8.6%	7,773.86	12,804.43	13,234.72	3.4%
12	YEAR 1	6,500.0					9,400.97	9,831.26	430.29	4.6%	33,686.74	43,087.70	43,517.99	1.0%
13	YEAR 1	19,500.0					20,332.21	20,762.50	430.29	2.1%	101,060.21	121,392.43	121,822.71	0.4%
14	YEAR 2	1,500.0					5,460.86	5,933.82	472.97	8.7%	7,773.86	13,234.72	13,707.69	3.6%
15	YEAR 2	6,500.0					9,831.26	10,304.22	472.97	4.8%	33,686.74	43,517.99	43,990.96	1.1%
16	YEAR 2	19,500.0					20,762.50	21,235.47	472.97	2.3%	101,060.21	121,822.71	122,295.68	0.4%
17	YEAR 3	1,500.0					5,933.82	6,411.13	477.30	8.0%	7,773.86	13,707.69	14,184.99	3.5%
18	YEAR 3	6,500.0					10,304.22	10,781.52	477.30	4.6%	33,686.74	43,990.96	44,468.26	1.1%
19	YEAR 3	19,500.0					21,235.47	21,712.77	477.30	2.2%	101,060.21	122,295.68	122,772.98	0.4%
20	YEAR 4	1,500.0					6,411.13	6,897.51	486.38	7.6%	7,773.86	14,184.99	14,671.37	3.4%
21	YEAR 4	6,500.0					10,781.52	11,267.91	486.38	4.5%	33,686.74	44,468.26	44,954.65	1.1%
22	YEAR 4	19,500.0					21,712.77	22,199.15	486.38	2.2%	101,060.21	122,772.98	123,259.37	0.4%
23	YEAR 5	1,500.0					6,897.51	7,389.71	492.20	7.1%	7,773.86	14,671.37	15,163.57	3.4%
24	YEAR 5	6,500.0					11,267.91	11,760.11	492.20	4.4%	33,686.74	44,954.65	45,446.85	1.1%
25	YEAR 5	19,500.0					22,199.15	22,691.35	492.20	2.2%	101,060.21	123,259.37	123,751.57	0.4%
26	EXCISE TAX FIRST 100		0.1593											
27	EXCISE TAX NEXT 1900		0.0877											
28	EXCISE TAX OVER 2000		0.0411											
29	EXCISE TAX FLEXED RATE		0.0200											
30	GROSS RECEIPTS TAX		4.987%											
31	FRANKLIN COUNTY SALES TAX		7.500%											

COLUMBIA GAS OF OHIO, INC.
CASE NO. 16-2422-GA-ALT
TYPICAL BILL COMPARISON
RATE SCHEDULE LARGE GENERAL TRANSPORTATION SERVICE - MAINLINE (LGTS MAINLINE)
PROJECTED RATES EFFECTIVE: MAY 2019 THROUGH 2022

WITNESS: DIANA M. BEIL

LINE NO.	RATE CODE	USAGE MCF (A)	MOST CURRENT RATE (B)	PROPOSED RATE (C)	INCREASE (D=C-B)	PERCENT OF INCREASE (E=D/B)	CURRENT BILL (F)	PROPOSED BILL (G)	DOLLAR INCREASE (H=G-F)	PERCENT OF INCREASE (I=H/F)	AVE. MONTHLY FUEL COST ADDITIONS TO BILL (J)	CURRENT BILL INCLUDING FUEL COST (K=F+J)	PROPOSED BILL INCLUDING FUEL COST (L=G+J)	PERCENT OF CHANGE (M=(L-K)/K)
1	**LARGE GENERAL TRANSPORTATION SERVICE - MAINLINE**													
2	ALL GAS USED - YEAR 1		0.2732	0.2732	-	0.0%					4.8210			
3	ALL GAS USED - YEAR 2		0.2732	0.2732	-	0.0%								
4	ALL GAS USED - YEAR 3		0.2732	0.2732	-	0.0%								
5	ALL GAS USED - YEAR 4		0.2732	0.2732	-	0.0%								
6	ALL GAS USED - YEAR 5		0.2732	0.2732	-	0.0%								
7	CUSTOMER CHARGE YEAR 1		3258.05	3667.90	409.8500	12.6%								
8	CUSTOMER CHARGE YEAR 2		3667.90	4118.40	450.5000	12.3%								
9	CUSTOMER CHARGE YEAR 3		4118.40	4573.03	454.6300	11.0%								
10	CUSTOMER CHARGE YEAR 4		4573.03	5036.31	463.2800	10.1%								
11	CUSTOMER CHARGE YEAR 5		5036.31	5505.13	468.8200	9.3%								
8	YEAR 1	1,500.0					3,996.39	4,426.68	430.29	10.8%	7,773.86	11,770.26	12,200.54	3.7%
9	YEAR 1	6,500.0					5,670.73	6,101.02	430.29	7.6%	33,686.74	39,357.46	39,787.75	1.1%
10	YEAR 1	19,500.0					9,960.39	10,390.68	430.29	4.3%	101,060.21	111,020.60	111,450.89	0.4%
11	YEAR 2	1,500.0					4,426.68	4,899.65	472.97	10.7%	7,773.86	12,200.54	12,673.51	3.9%
12	YEAR 2	6,500.0					6,101.02	6,573.98	472.97	7.8%	33,686.74	39,787.75	40,260.72	1.2%
13	YEAR 2	19,500.0					10,390.68	10,863.65	472.97	4.6%	101,060.21	111,450.89	111,923.86	0.4%
14	YEAR 3	1,500.0					4,899.65	5,376.95	477.30	9.7%	7,773.86	12,673.51	13,150.81	3.8%
15	YEAR 3	6,500.0					6,573.98	7,051.28	477.30	7.3%	33,686.74	40,260.72	40,738.02	1.2%
16	YEAR 3	19,500.0					10,863.65	11,340.95	477.30	4.4%	101,060.21	111,923.86	112,401.16	0.4%
17	YEAR 4	1,500.0					5,376.95	5,863.33	486.38	9.0%	7,773.86	13,150.81	13,637.20	3.7%
18	YEAR 4	6,500.0					7,051.28	7,537.67	486.38	6.9%	33,686.74	40,738.02	41,224.41	1.2%
19	YEAR 4	19,500.0					11,340.95	11,827.33	486.38	4.3%	101,060.21	112,401.16	112,887.54	0.4%
20	YEAR 5	1,500.0					5,863.33	6,355.54	492.20	8.4%	7,773.86	13,637.20	14,129.40	3.6%
21	YEAR 5	6,500.0					7,537.67	8,029.87	492.20	6.5%	33,686.74	41,224.41	41,716.61	1.2%
22	YEAR 5	19,500.0					11,827.33	12,319.53	492.20	4.2%	101,060.21	112,887.54	113,379.74	0.4%
23	EXCISE TAX FIRST 100		0.1593											
24	EXCISE TAX NEXT 1900		0.0877											
25	EXCISE TAX OVER 2000		0.0411											
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27	GROSS RECEIPTS TAX		4.987%											
28	FRANKLIN COUNTY SALES TAX		7.500%											

Columbia Exhibit No. 2

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.)	Case No. 16-2422-GA-ALT

PREPARED DIRECT TESTIMONY OF
DONALD AYERS
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

/s/ Eric B. Gallon
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(Willing to accept service by e-mail)

Attorneys for
COLUMBIA GAS OF OHIO, INC.

February 27, 2017

PREPARED DIRECT TESTIMONY
OF DONALD AYERS

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Donald Ayers and my business address is 290 W. Nationwide Boulevard, Columbus, Ohio 43215.

Q: What is your current position and what are your responsibilities?

A: I am the Director of Construction for Columbia Gas of Ohio, Inc. ("Columbia"), Columbia Gas of Kentucky, and Northern Indiana Public Service Company. My principal responsibilities for Columbia include directing and managing all contracted construction activities, overseeing the scheduled execution of Columbia's construction plans, negotiating construction contracts with qualified contractors, and ensuring Columbia's pipeline installations are compliant and safe. I work with internal stakeholders, including the Engineering Department, to ensure that Columbia's Accelerated Mains Replacement Program ("AMRP") projects are installed in a timely fashion, and I work with municipalities with permitting and restoration concerns.

Q: What is your employment history?

A: In 1988, I began my career with Columbia as an Accounting Clerk in Columbus. From there, I held multiple positions with Columbia, including Meter Reader, Service Technician, Operations Technician, and Service Supervisor. In 1996, I transitioned into Columbia's Measurement and Regulation Department, first as a Supervisor and then as a Frontline Leader. In 2001, I moved back to Columbia's Operations Team, first as a Field Operations Leader and finally as an Operations Center Manager. I was then promoted in 2005 to the Manager of System Operations for Columbia and Columbia Gas of Kentucky, Inc. In this role, I was tasked with ensuring Columbia's Measurement and Regulation ("M&R"), corrosion and leakage programs were conducted on a timely basis, as well as ensuring compliance with federal and state pipeline safety standards. In 2015, I was promoted again to my current role as Director of Construction.

Q: Have you previously testified before this Commission?

A. No.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to describe Columbia's Infrastructure Replacement Program ("IRP"), specifically the Accelerated Mains Replacement Program ("AMRP") and the Hazardous Customer Service Line program ("HCSL Program"). I will also explain the factors I am seeing in construction of Columbia's AMRP projects that have changed since Columbia's last extension in 2011, and the foreseeable changes in the proposed five-year term of this extension.

II. OVERVIEW OF IRP PROGRAMS

Q: Please describe the scope of the AMRP.

A: Columbia's AMRP targets certain types of mains for replacement over a 25-year timeframe. The size and scope of the main replacement projects completed each year will vary, from replacing small individual segments of main to replacing extremely large segments of pipe across a relatively wide geographic area.

The types of gas main explicitly included in the AMRP, as initially approved, were bare steel, unprotected coated steel, wrought iron, and cast iron. These types of main ("Priority Pipe" or "Priority Main") are typically more likely to leak, due to their material type, protection, age, and other characteristics. Also explicitly included in the AMRP is the replacement of all metallic service lines and associated appurtenances.

In Columbia's last extension of the IRP, Case No. 11-5515-GA-ALT, the Commission adopted a Stipulation and Recommendation ("2011 Stipulation") that, among other things, clarified the scope of the AMRP to expressly include certain items, including interspersed sections of nonpriority pipe, first generation plastic pipe, ineffectively coated steel, meter move outs, and government relocations.

Q: Please describe the HCSL Program.

A: As an outgrowth of the prone-to-fail riser survey and replacement program, of which I was a team leader, Columbia also is responsible for maintaining, repairing, and replacing customer-owned service lines that Columbia has determined present an existing or probable hazard to persons or property or require a scheduled repair or replacement based upon severity or location.

As of the end of 2016, Columbia has replaced approximately 70,257 hazardous customer service lines as part of the HCSL Program. This program ensures that hazardous customer service lines are not only replaced safely and efficiently, but that Columbia continues to own and maintain these service lines.

Q: Since beginning the AMRP, how many miles of pipe has Columbia replaced?

A: The table below breaks down the type of pipe replaced over the first nine years (2008-2016) of the AMRP:

Infrastructure Category	Mileage Replaced
Bare Steel	1,337
Cast Iron/Wrought Iron	86
Pre-1955 Unprotected Coated Steel	165
Pre-1954 Coated Steel	73
First Generation Plastic	202

Q: How does Columbia determine which mains it will replace as part of its AMRP program?

A: Columbia uses Optimain DS™, a commercially available software package, to help evaluate and risk-rank pipe segments system-wide against a range of environmental conditions (*e.g.*, population density, building class, surface cover type) and risk factors (*e.g.*, pipe segment leak history, pipe condition, pitting depth, depth of cover). The program enables Columbia to specifically target some of the worst segments of distribution pipe for replacement.

Using this program, Columbia identifies, ranks, and selects projects based on the level of relative risk that would be removed from the system. Columbia also uses its operational and engineering knowledge to monitor and replace other critical segments that could pose additional risk if replacement is delayed. Columbia also works collaboratively with local and state governments to replace Priority Pipe where public improvement work will occur.

Q: Why is Columbia seeking to continue its current AMRP?

A: Columbia's initial intent, which is to accelerate the replacement of our Priority Main and to provide safe and reliable service to our customers, remains unchanged. This program allows Columbia to continue to implement its systematic replacement strategy, which targets the identification, selection, and replacement of Priority Pipe in large geographic areas with high relative risk. Extending the current AMRP also enables Columbia to coordinate the replacement of its Priority Pipe in advance of state or municipal construction projects, which eliminates long-term complaints over the intrusive maintenance efforts that Columbia would otherwise have to take in order to repair leaks and maintain an aging natural gas system.

As the Director of Construction, and formerly Columbia's leader overseeing leakage and corrosion control, I have seen corroded, bare steel mains and services in the trench. Continuing the accelerated replacement of hazardous pipelines ensures Columbia can maintain safe and reliable delivery of natural gas.

Q: Would continuing the AMRP provide any other benefits?

A: Yes. In addition to the increased safety of Columbia's customers, continuing the AMRP is essential to maintaining access to highly-skilled and operator-qualified construction contractor resources.

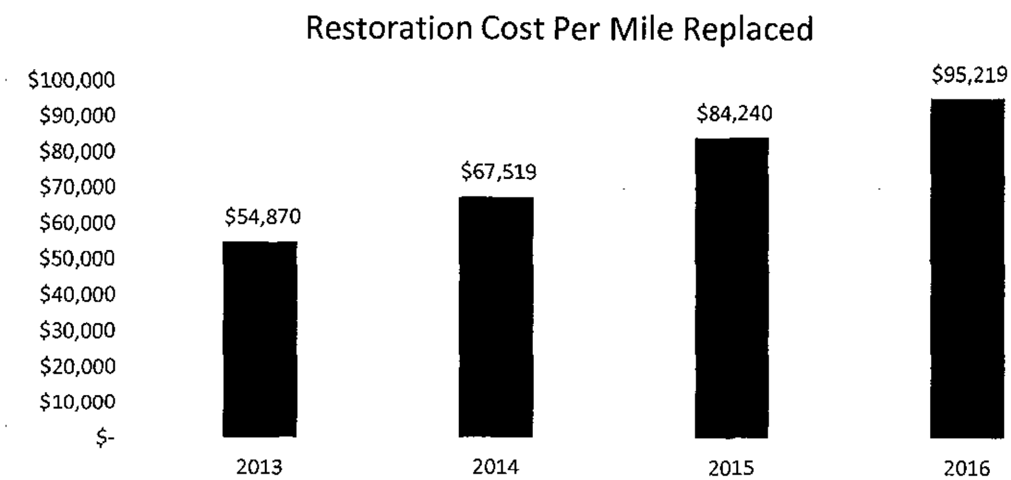
Retaining quality, operator-qualified construction contractors can be a challenge. In 2011, Columbia implemented its contractor acquisition strategy, which focused on building long-term relationships with Columbia's blanket contractors. Due to increased construction contractor needs across the industry and the relatively small technically competent labor market, blanket contractors are having high personnel turnover, making it more difficult to meet Columbia's resource needs. Continuing Columbia's current AMRP will ensure a consistent stream of business, thereby encouraging contractors to expand their businesses in Ohio and hire the needed labor resources that will play a vital role in the construction of Columbia's projects.

III. CHANGES INCREASING AMRP COSTS

A. Restoration and Underground Facility Camera Work

Q: Since 2011, have you seen any changes in the environment in which Columbia is able to do business?

A: Yes. One of the largest changes I have seen is the large increases in restoration expenses, both hard surface (e.g., road pavement and sidewalk) and soft surface (e.g., grass seed and lawn care). This is driven, largely, by municipal right-of-way ordinances and permit requirements when Columbia is required to open cut to install mains and services.



Q. Are you familiar with directional boring or drilling?

A. Yes. Directional boring is a pipeline installation technique that utilizes a drill to guide and install the pipeline without open cutting a trench.

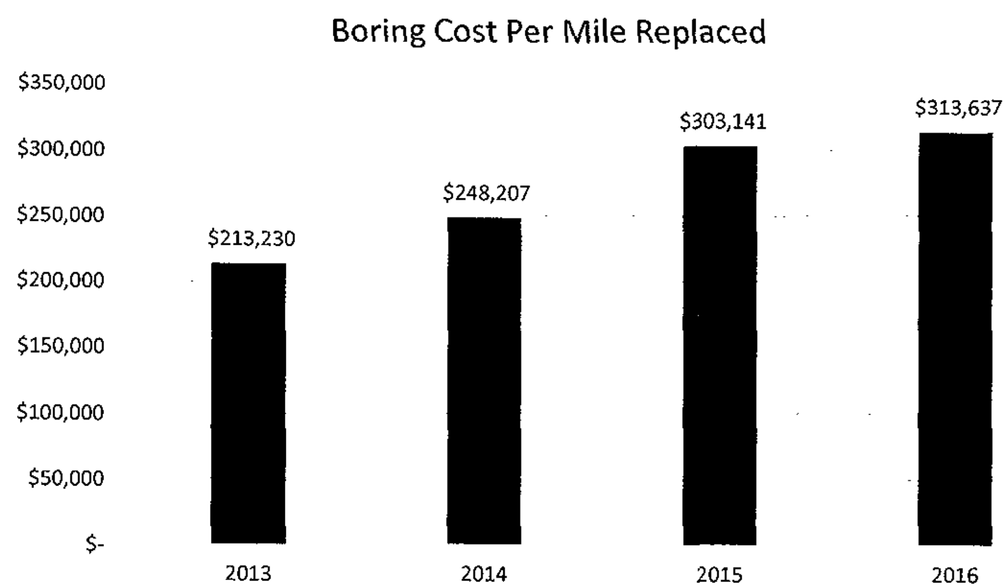
Q. Would conducting more directional boring affect restoration costs?

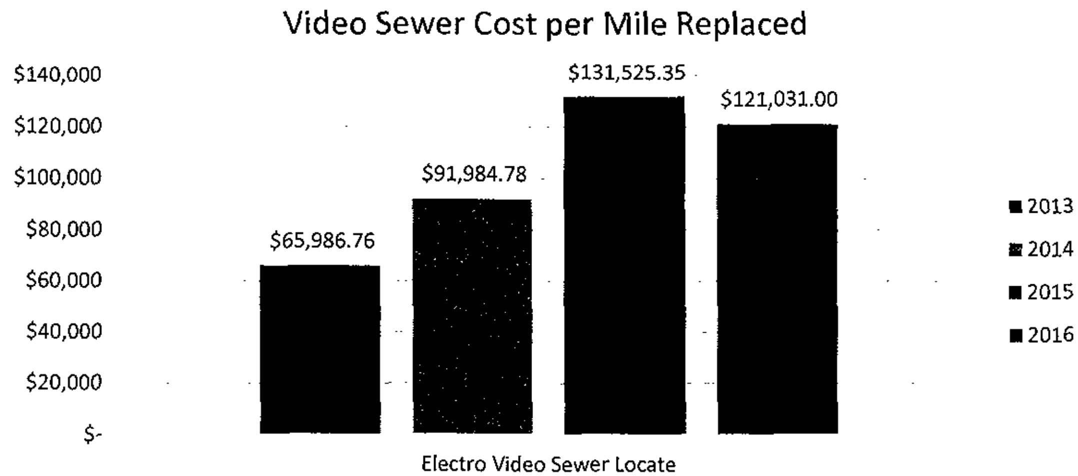
A. Yes. Open cutting, where Columbia opens the trench to lay the pipeline, requires Columbia to restore more surface area. Directional boring decreases restoration costs because the necessity to restore above-ground property, whether it is grass or pavement, is reduced with directional, underground boring. The minimal restoration required for directional boring is limited to holes dug to launch and receive the pipeline as it is installed and the holes dug to spot other underground utilities, which is a requirement by Ohio law.

Q: Have there been any increased costs associated with directional boring?

A: Yes. With Ohio's new damage prevention law, Columbia is required to visually inspect or "spot" any crossing underground facilities to ensure that new facilities do not intersect, creating a cross bore. Columbia's gas standards also require construction crews to camera (record video of) all underground sewer mains and facilities to confirm their location and proximity to gas facilities. Both of these practices ensure Columbia safely installs directionally-drilled mains and service lines. If Columbia cannot safely locate all underground facilities, it will open cut the project, which increases restoration costs, but alleviates the requirement to camera underground sewer mains and facilities.

Because the demand for underground facility camera crews is increasing, the costs corresponding to these crews are also increasing. Since 2013, Columbia has seen a substantial increase in the costs associated with this safety practice. Accordingly, while conducting more directional boring will decrease Columbia's restoration costs, it will increase Columbia's camera costs.





Q: Do you foresee these costs going down in the foreseeable future?

A: I do not. Columbia and likely other companies are continuing to revise their procedures and policies to ensure the safe installation of underground facilities. I foresee these costs not going down, but going up in the next five years. This is due to the reasons stated above, as well as increased training time for new employees, reduced productivity as more experienced employees retire from the workforce, and increased guidelines and regulations coming from PHMSA for pipeline installation.

Q: Is there anything Columbia can do to contain these costs?

A: Through its blanket contract negotiations, Columbia is working with its construction contractors to secure the most cost-efficient and qualified contractors to do this work. Columbia has also worked with the Ohio Laborers' District Council and its largest contractors to create an entry-level training program for new employees beginning careers in gas construction. Columbia has recently begun a partnership with the Distribution Contractors Association and the American Gas Association to help community colleges develop distribution construction training programs. The goal of all of this training is to reduce the amount of on-the-job training, which improves productivity, and to allow new employees to have a quicker transition to becoming productive, safe employees.

B. Historic Cost Increases

Q: During the last nine years of the AMRP, have you seen any change in costs?

A: Yes, the program, overall, has been experiencing cost increases. When looking at the average cost per mile over the last nine years, Columbia is experiencing a 15.57% year-over-year increase. As of 2016, Columbia's average cost per mile was $1.073 million.

Q: Do you anticipate these costs going down?

A: I do not. The average cost per mile of installing natural gas pipeline is likely to continue to climb. The revitalization of shale drilling in Ohio, and the continued demand for natural gas qualified construction crews and resources, is stretching the market. Said differently, the demand for qualified construction crews is increasing, while the supply of these crews is decreasing, especially with the retirement of seasoned employees.

That being said, Columbia works hard to manage its costs. For the last five years of installing and managing the costs of AMRP projects, Columbia has increased its monitoring of spend, standardized contracts, and standardized contract unit items. We have also improved our planning process, which allows us to level the workload throughout the year. This allows the contractors to do more work with fewer crews.

C. *Construction Contract Renegotiation*

Q: Are there other foreseeable cost increases in the next five years?

A: Columbia's blanket construction contracts, which employ the primary personnel charged with installing AMRP projects, expire on December 31, 2020. During the proposed five-year extension of the IRP, Columbia will be renegotiating these contracts. As I previously noted, the costs of construction crews are likely to increase, not decrease. With the natural gas drilling in eastern Ohio and the continued construction of pipelines and underground facilities, the demand for operator-qualified contract crews is great, but the supply is limited.

Q: Is there anything Columbia plans to do to contain these costs during the negotiation?

A: Columbia will conduct a competitive bidding process towards the end of 2018. The details of this process are still in the preliminary stages, as we are more than three years away from these contracts expiring on December 31, 2020. Nonetheless, Columbia must retain operators and construction crews that are both skilled and install natural gas pipeline safely. Although Columbia will continue to pursue contractors that are able to install safe, compliant and best-value pipe, we will not trade minimal short-term savings at the expense of our customers' and employees' safety.

Q. Does this complete your Prepared Direct Testimony?

A. Yes, it does.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017 upon the parties listed below.

/s/ Eric B. Gallon
Eric B. Gallon
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Columbia Exhibit No. 2

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	Case No. 16-2422-GA-ALT

PREPARED DIRECT TESTIMONY OF
DONALD AYERS
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

/s/ Eric B. Gallon
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(Willing to accept service by e-mail)

Attorneys for
COLUMBIA GAS OF OHIO, INC.

February 27, 2017

PREPARED DIRECT TESTIMONY
OF DONALD AYERS

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Donald Ayers and my business address is 290 W. Nationwide Boulevard, Columbus, Ohio 43215.

Q: What is your current position and what are your responsibilities?

A: I am the Director of Construction for Columbia Gas of Ohio, Inc. ("Columbia"), Columbia Gas of Kentucky, and Northern Indiana Public Service Company. My principal responsibilities for Columbia include directing and managing all contracted construction activities, overseeing the scheduled execution of Columbia's construction plans, negotiating construction contracts with qualified contractors, and ensuring Columbia's pipeline installations are compliant and safe. I work with internal stakeholders, including the Engineering Department, to ensure that Columbia's Accelerated Mains Replacement Program ("AMRP") projects are installed in a timely fashion, and I work with municipalities with permitting and restoration concerns.

Q: What is your employment history?

A: In 1988, I began my career with Columbia as an Accounting Clerk in Columbus. From there, I held multiple positions with Columbia, including Meter Reader, Service Technician, Operations Technician, and Service Supervisor. In 1996, I transitioned into Columbia's Measurement and Regulation Department, first as a Supervisor and then as a Frontline Leader. In 2001, I moved back to Columbia's Operations Team, first as a Field Operations Leader and finally as an Operations Center Manager. I was then promoted in 2005 to the Manager of System Operations for Columbia and Columbia Gas of Kentucky, Inc. In this role, I was tasked with ensuring Columbia's Measurement and Regulation ("M&R"), corrosion and leakage programs were conducted on a timely basis, as well as ensuring compliance with federal and state pipeline safety standards. In 2015, I was promoted again to my current role as Director of Construction.

Q: Have you previously testified before this Commission?

A. No.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to describe Columbia's Infrastructure Replacement Program ("IRP"), specifically the Accelerated Mains Replacement Program ("AMRP") and the Hazardous Customer Service Line program ("HCSL Program"). I will also explain the factors I am seeing in construction of Columbia's AMRP projects that have changed since Columbia's last extension in 2011, and the foreseeable changes in the proposed five-year term of this extension.

II. OVERVIEW OF IRP PROGRAMS

Q: Please describe the scope of the AMRP.

A: Columbia's AMRP targets certain types of mains for replacement over a 25-year timeframe. The size and scope of the main replacement projects completed each year will vary, from replacing small individual segments of main to replacing extremely large segments of pipe across a relatively wide geographic area.

The types of gas main explicitly included in the AMRP, as initially approved, were bare steel, unprotected coated steel, wrought iron, and cast iron. These types of main ("Priority Pipe" or "Priority Main") are typically more likely to leak, due to their material type, protection, age, and other characteristics. Also explicitly included in the AMRP is the replacement of all metallic service lines and associated appurtenances.

In Columbia's last extension of the IRP, Case No. 11-5515-GA-ALT, the Commission adopted a Stipulation and Recommendation ("2011 Stipulation") that, among other things, clarified the scope of the AMRP to expressly include certain items, including interspersed sections of nonpriority pipe, first generation plastic pipe, ineffectively coated steel, meter move outs, and government relocations.

Q: Please describe the HCSL Program.

A: As an outgrowth of the prone-to-fail riser survey and replacement program, of which I was a team leader, Columbia also is responsible for maintaining, repairing, and replacing customer-owned service lines that Columbia has determined present an existing or probable hazard to persons or property or require a scheduled repair or replacement based upon severity or location.

As of the end of 2016, Columbia has replaced approximately 70,257 hazardous customer service lines as part of the HCSL Program. This program ensures that hazardous customer service lines are not only replaced safely and efficiently, but that Columbia continues to own and maintain these service lines.

Q: Since beginning the AMRP, how many miles of pipe has Columbia replaced?

A: The table below breaks down the type of pipe replaced over the first nine years (2008-2016) of the AMRP:

Infrastructure Category	Mileage Replaced
Bare Steel	1,337
Cast Iron/Wrought Iron	86
Pre-1955 Unprotected Coated Steel	165
Pre-1954 Coated Steel	73
First Generation Plastic	202

Q: How does Columbia determine which mains it will replace as part of its AMRP program?

A: Columbia uses Optimain DS™, a commercially available software package, to help evaluate and risk-rank pipe segments system-wide against a range of environmental conditions (*e.g.*, population density, building class, surface cover type) and risk factors (*e.g.*, pipe segment leak history, pipe condition, pitting depth, depth of cover). The program enables Columbia to specifically target some of the worst segments of distribution pipe for replacement.

Using this program, Columbia identifies, ranks, and selects projects based on the level of relative risk that would be removed from the system. Columbia also uses its operational and engineering knowledge to monitor and replace other critical segments that could pose additional risk if replacement is delayed. Columbia also works collaboratively with local and state governments to replace Priority Pipe where public improvement work will occur.

Q: Why is Columbia seeking to continue its current AMRP?

A: Columbia's initial intent, which is to accelerate the replacement of our Priority Main and to provide safe and reliable service to our customers, remains unchanged. This program allows Columbia to continue to implement its systematic replacement strategy, which targets the identification, selection, and replacement of Priority Pipe in large geographic areas with high relative risk. Extending the current AMRP also enables Columbia to coordinate the replacement of its Priority Pipe in advance of state or municipal construction projects, which eliminates long-term complaints over the intrusive maintenance efforts that Columbia would otherwise have to take in order to repair leaks and maintain an aging natural gas system.

As the Director of Construction, and formerly Columbia's leader overseeing leakage and corrosion control, I have seen corroded, bare steel mains and services in the trench. Continuing the accelerated replacement of hazardous pipelines ensures Columbia can maintain safe and reliable delivery of natural gas.

Q: Would continuing the AMRP provide any other benefits?

A: Yes. In addition to the increased safety of Columbia's customers, continuing the AMRP is essential to maintaining access to highly-skilled and operator-qualified construction contractor resources.

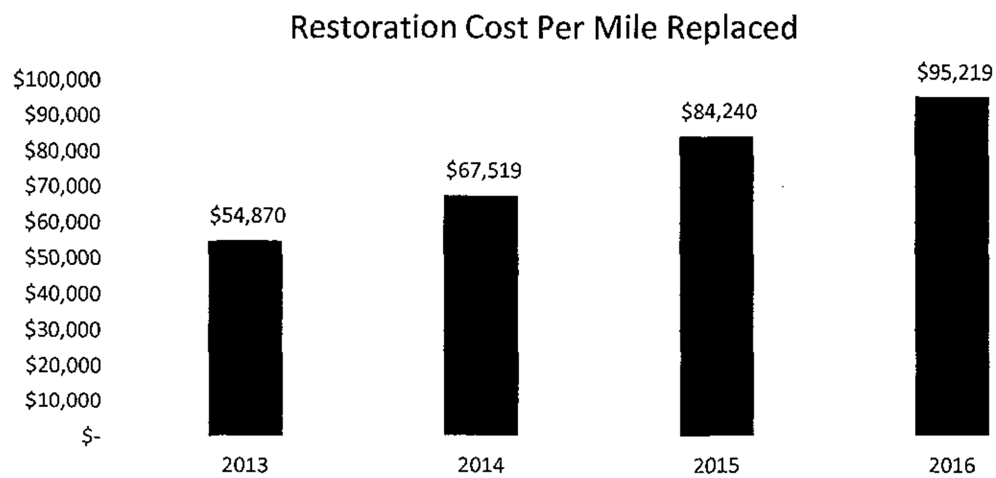
Retaining quality, operator-qualified construction contractors can be a challenge. In 2011, Columbia implemented its contractor acquisition strategy, which focused on building long-term relationships with Columbia's blanket contractors. Due to increased construction contractor needs across the industry and the relatively small technically competent labor market, blanket contractors are having high personnel turnover, making it more difficult to meet Columbia's resource needs. Continuing Columbia's current AMRP will ensure a consistent stream of business, thereby encouraging contractors to expand their businesses in Ohio and hire the needed labor resources that will play a vital role in the construction of Columbia's projects.

III. CHANGES INCREASING AMRP COSTS

A. Restoration and Underground Facility Camera Work

Q: Since 2011, have you seen any changes in the environment in which Columbia is able to do business?

A: Yes. One of the largest changes I have seen is the large increases in restoration expenses, both hard surface (e.g., road pavement and sidewalk) and soft surface (e.g., grass seed and lawn care). This is driven, largely, by municipal right-of-way ordinances and permit requirements when Columbia is required to open cut to install mains and services.



Q. Are you familiar with directional boring or drilling?

A. Yes. Directional boring is a pipeline installation technique that utilizes a drill to guide and install the pipeline without open cutting a trench.

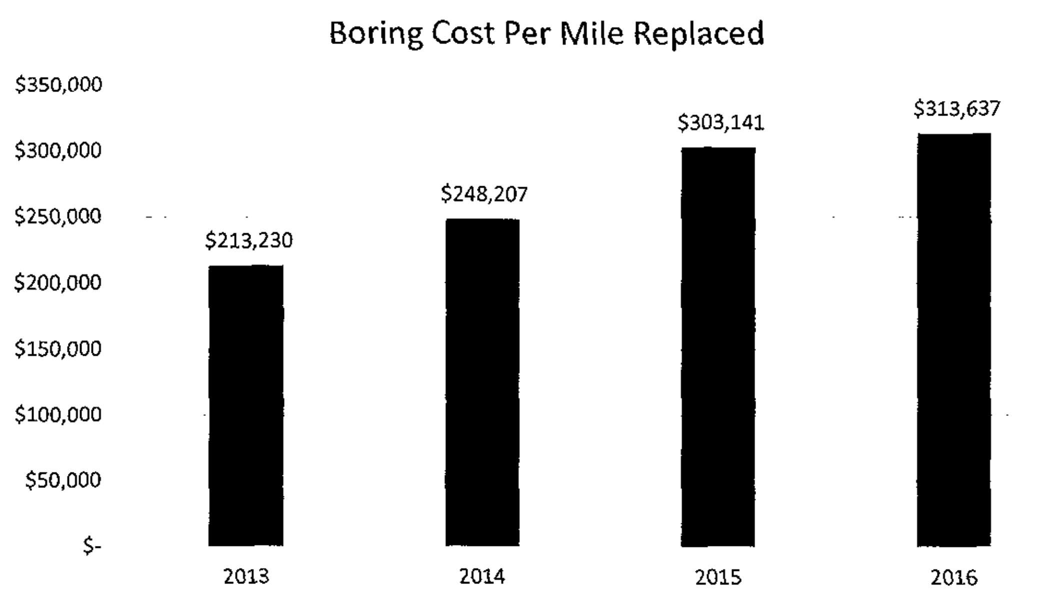
Q. Would conducting more directional boring affect restoration costs?

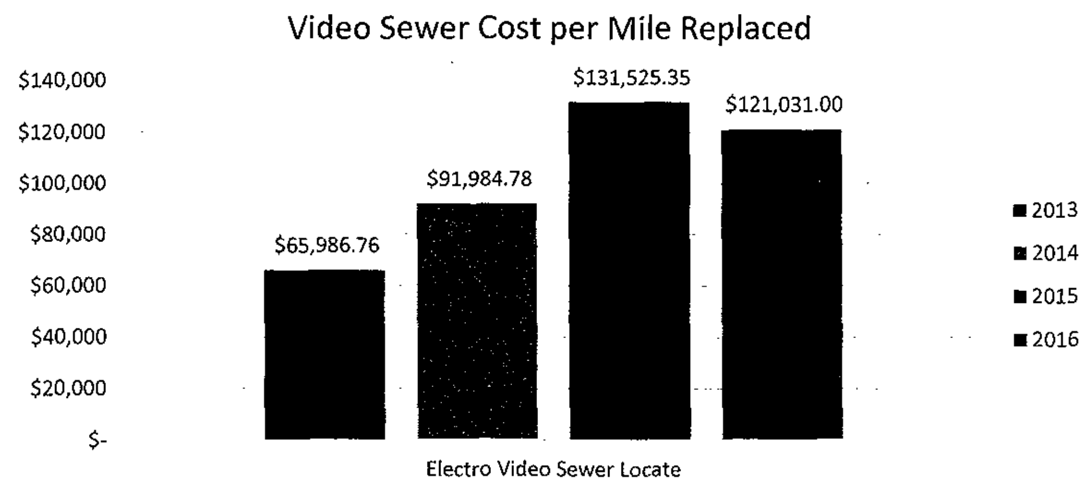
A. Yes. Open cutting, where Columbia opens the trench to lay the pipeline, requires Columbia to restore more surface area. Directional boring decreases restoration costs because the necessity to restore above-ground property, whether it is grass or pavement, is reduced with directional, underground boring. The minimal restoration required for directional boring is limited to holes dug to launch and receive the pipeline as it is installed and the holes dug to spot other underground utilities, which is a requirement by Ohio law.

Q: Have there been any increased costs associated with directional boring?

A: Yes. With Ohio's new damage prevention law, Columbia is required to visually inspect or "spot" any crossing underground facilities to ensure that new facilities do not intersect, creating a cross bore. Columbia's gas standards also require construction crews to camera (record video of) all underground sewer mains and facilities to confirm their location and proximity to gas facilities. Both of these practices ensure Columbia safely installs directionally-drilled mains and service lines. If Columbia cannot safely locate all underground facilities, it will open cut the project, which increases restoration costs, but alleviates the requirement to camera underground sewer mains and facilities.

Because the demand for underground facility camera crews is increasing, the costs corresponding to these crews are also increasing. Since 2013, Columbia has seen a substantial increase in the costs associated with this safety practice. Accordingly, while conducting more directional boring will decrease Columbia's restoration costs, it will increase Columbia's camera costs.





Q: Do you foresee these costs going down in the foreseeable future?

A: I do not. Columbia and likely other companies are continuing to revise their procedures and policies to ensure the safe installation of underground facilities. I foresee these costs not going down, but going up in the next five years. This is due to the reasons stated above, as well as increased training time for new employees, reduced productivity as more experienced employees retire from the workforce, and increased guidelines and regulations coming from PHMSA for pipeline installation.

Q: Is there anything Columbia can do to contain these costs?

A: Through its blanket contract negotiations, Columbia is working with its construction contractors to secure the most cost-efficient and qualified contractors to do this work. Columbia has also worked with the Ohio Laborers' District Council and its largest contractors to create an entry-level training program for new employees beginning careers in gas construction. Columbia has recently begun a partnership with the Distribution Contractors Association and the American Gas Association to help community colleges develop distribution construction training programs. The goal of all of this training is to reduce the amount of on-the-job training, which improves productivity, and to allow new employees to have a quicker transition to becoming productive, safe employees.

B. Historic Cost Increases

Q: During the last nine years of the AMRP, have you seen any change in costs?

A: Yes, the program, overall, has been experiencing cost increases. When looking at the average cost per mile over the last nine years, Columbia is experiencing a 15.57% year-over-year increase. As of 2016, Columbia's average cost per mile was $1.073 million.

Q: Do you anticipate these costs going down?

A: I do not. The average cost per mile of installing natural gas pipeline is likely to continue to climb. The revitalization of shale drilling in Ohio, and the continued demand for natural gas qualified construction crews and resources, is stretching the market. Said differently, the demand for qualified construction crews is increasing, while the supply of these crews is decreasing, especially with the retirement of seasoned employees.

That being said, Columbia works hard to manage its costs. For the last five years of installing and managing the costs of AMRP projects, Columbia has increased its monitoring of spend, standardized contracts, and standardized contract unit items. We have also improved our planning process, which allows us to level the workload throughout the year. This allows the contractors to do more work with fewer crews.

C. Construction Contract Renegotiation

Q: Are there other foreseeable cost increases in the next five years?

A: Columbia's blanket construction contracts, which employ the primary personnel charged with installing AMRP projects, expire on December 31, 2020. During the proposed five-year extension of the IRP, Columbia will be renegotiating these contracts. As I previously noted, the costs of construction crews are likely to increase, not decrease. With the natural gas drilling in eastern Ohio and the continued construction of pipelines and underground facilities, the demand for operator-qualified contract crews is great, but the supply is limited.

Q: Is there anything Columbia plans to do to contain these costs during the negotiation?

A: Columbia will conduct a competitive bidding process towards the end of 2018. The details of this process are still in the preliminary stages, as we are more than three years away from these contracts expiring on December 31, 2020. Nonetheless, Columbia must retain operators and construction crews that are both skilled and install natural gas pipeline safely. Although Columbia will continue to pursue contractors that are able to install safe, compliant and best-value pipe, we will not trade minimal short-term savings at the expense of our customers' and employees' safety.

Q. Does this complete your Prepared Direct Testimony?

A. Yes, it does.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017 upon the parties listed below.

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Columbia Exhibit No. 3

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

PREPARED DIRECT TESTIMONY
OF DIANA M. BEIL
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

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February 27, 2017

PREPARED DIRECT TESTIMONY
OF DIANA M. BEIL

I. INTRODUCTION

Q. Please state your name and business address.

A. Diana Beil, 290 W. Nationwide Blvd., Columbus, Ohio 43215.

Q. By whom are you employed?

A. I am employed by Columbia Gas of Ohio, Inc. ("Columbia").

Q. Please state briefly your educational background and experience.

A. I graduated from Miami University where I majored in Accounting with a minor in Management Information Systems and received a Bachelor of Science Degree in Business in May 2007. In August 2007, I joined the accounting firm Crowe Horwath (formerly Crowe Chizek) as an auditor and became a licensed certified public accountant ("CPA") in the state of Ohio in 2009. From 2010 to 2015, I was employed by NiSource Inc. in its SEC Financial Reporting Department, where I most recently held the position of Manager of SEC Reporting. I was hired by Columbia in December 2015 as Regulatory Affairs Manager. I am currently a member of the Ohio Society of CPAs, as well as a member of the American Institute of CPAs.

Q. What are your job responsibilities as Regulatory Programs Manager?

A. As Regulatory Programs Manager, my primary responsibilities include the planning, supervision, preparation and support of all Columbia regulatory filings before the Public Utilities Commission of Ohio ("Commission"). Other responsibilities include the preparation of exhibits, proposed tariff changes and testimony filed by Columbia in support of the continuation of its Infrastructure Replacement Program ("IRP") Rider.

Q. What is the purpose of your testimony?

A. My testimony supports the reasonableness of Columbia's request for continuation of its Rider IRP authorized in Case No. 08-73-GA-ALT by Opinion and Order ("2008 Order") dated December 3, 2008, and further extended in Case No. 11-5515-GA-ALT by Opinion and Order ("2012 Order") dated November 28, 2012. I will describe the exhibits I am sponsoring in support of Columbia's continuation of its Rider IRP. I will address the proposed increase in capital investment and the proposed maximum annual Rider IRP rates to be charge to customer over the five-year period.

II. BACKGROUND

Q. Please summarize Rider IRP.

A. The Commission's 2008 Order first authorized Columbia to establish Rider IRP for a five-year period, reflecting capital investments through 2012. Pursuant to that 2008 Order, Rider IRP provides for recovery of and return on Columbia's plant investment and related expenses as provided for in the Stipulation previously filed in Case No. 08-73-GA-ALT. The Commission's 2012 Order approved a five-year extension for Rider IRP, incorporating capital investments through 2017, with certain clarifications.

Rider IRP consists of three components. The first component recovers the costs associated with Columbia's Accelerated Mains Replacement Program ("AMRP"). Under the AMRP, Columbia plans to replace approximately 4,100 miles of priority pipe and an estimated 350,000 to 360,000 metallic service lines over a period of approximately 25 years. Further testimony filed in support of the continuation of this program is provided by Ms. Thompson and Mr. Ayers.

The second component recovers the costs associated with the replacement of natural gas risers that were prone to failure and the installation, maintenance, repair and replacement of customer service lines that have been determined to present an existing or probable hazard to persons and/or property. Columbia completed its replacement of prone-to-fail risers in June 2011, but has continued and will continue to repair and replace hazardous customer service lines. This component will be referred to as the Hazardous Customer Service Line program.

The third component recovers costs associated with Columbia's installation of Automated Meter Reading Devices ("AMRD") on all residential and commercial meters served by Columbia over approximately five years, beginning in 2009. Columbia is not seeking cost recovery for AMRDs installed after 2013.

Q. Please explain the process approved by the Commission in its 2008 Order for establishing rates through the Rider IRP mechanism.

A. The process approved by the Commission provides for Columbia's filing of a Notice of Intent by no later than November 30 of each year based on nine months actual data and three months estimated data. This Notice of Intent includes Columbia's initial IRP tariffs and supporting schedules for the Rider IRP to become effective the following May.

Columbia's Rider IRP filings will continue to comprise independent studies for the aforementioned programs. Columbia will continue to develop independent revenue requirement studies for its AMRP, Risers and Hazardous Customer Service Lines, and AMRD programs. Columbia will compute each revenue requirement based upon each program's costs. Columbia will allocate the revenue requirement for each program to each applicable rate schedule using the allocation basis approved by the Commission in its 2008 Order. Columbia will divide the allocated revenue requirement for each rate schedule by the projected bills to be sent to customers in each rate class for the following May through April. Columbia will then determine the Rider IRP, for each rate schedule, by aggregating the calculated rates for each of the programs comprising the Rider IRP.

Columbia will then file, by the following February 28th, an updated application with schedules supporting the proposed Rider IRP based on actual costs accumulated through the previous twelve months ended December. These filings will include all the accounting and billing details Staff needs in order to analyze the schedules and issue its Report of Investigation.

Subject to Commission approval, the Rider IRP will become effective by the following May 1 unless: (a) the Commission delays the effective date of the Rider IRP; (b) Staff determines Columbia's request to increase the Rider IRP is unjust and unreasonable; or (c) any party granted intervention by the Commission files an objection that is not resolved to the Commission's satisfaction.

Q. Will these filings continue to recognize achieved O&M expense savings?

A. Yes. The Stipulation approved by the Commission in its 2012 Order required Columbia to pass back meter reading expense savings and mains and services expense savings to customers through the Rider IRP. All meter reading expense savings were to be determined in accordance with the Stipulation approved by the Commission in its 2012 Order. Pursuant to the same Stipulation, savings resulting from Columbia's AMRP were to be the greater of the actual mains and services expense savings experienced or the minimum level of mains and services expense savings defined by the Stipulation. The current minimum level of savings provided for in the 2012 Order is $1,250,000.

Columbia is proposing to continue passing back both meter reading expense savings and mains and services expense savings to customers based on the criteria identified in the Stipulation approved by the Commission in its 2012 Order. Columbia proposes to maintain a minimum level of mains and services expense savings of $1,250,000 per year for the five-year extension. The amount of actual mains and services expense savings or the minimum level of savings, whichever greater, will be shown as a line item reduction in the annual revenue requirement calculation.

Q. **Does this process include a reconciliation adjustment to allow for the dollar-for-dollar matching of costs and revenues?**

A. Yes.

Q. **Why does Columbia continue to include costs related to its investment in replacing natural gas risers and installing AMRDs in its determination of the Rider IRP revenue requirement if it already completed those programs?**

A. Columbia continues to include the riser and AMRD components in its determination of the Rider IRP rate so Columbia may continue to earn a return of and on its investments in the risers and AMRDs until the Commission provides for recovery of these costs in a future rate case proceeding.

Q. **Has Rider IRP traditionally had a maximum rate?**

A. Yes. The stipulation approved by the Commission in Case No. 08-0073-GA-ALT included a provision that resulted in the establishment of a maximum rate to be charged to customers under Columbia's Small General Service[1] type rate schedules. This annual rate methodology was

[1] Small General Service includes Small General Sales Service, Small General Schools Sales Service,

extended in Case No. 11-5515-GA-ALT. The 2012 Order provided that the Rider IRP rate, effective May 1, 2014, could not exceed $6.20 per customer per month; the Rider IRP rate, effective May 1, 2015, could not exceed $7.20 per customer per month; the Rider IRP rate, effective May 1, 2016, could not exceed $8.20 per customer per month; the Rider IRP rate, effective May 1, 2017, cannot exceed $9.20 per customer per month; and the Rider IRP rate, effective May 1, 2018, cannot exceed $10.20 per customer per month.

III. APPLICATION AND PROPOSED MAXIMUM RIDER IRP RATES

Q. Why has Columbia filed the current Application?

A. The Stipulation approved by the Commission on November 28, 2012, stated that Columbia may continue its Rider IRP to reflect IRP investments made through December 31, 2017. The upcoming expiration of that authority necessitates an application to extend the program for an additional five years. A five-year extension allows Columbia to continue its accelerated replacement of aging infrastructure though the IRP, as further explained by Ms. Thompson. Additionally, in order to meet its commitment to replace all existing priority pipe and metallic services lines over a 25-year period, Columbia is requesting authority to establish new maximum rates through this five-year extension.

Q. Is Columbia proposing any changes to the procedures, terms, and conditions of cost recovery approved in Case No. 11-5515-GA-ALT?

A. Columbia's Application requests no changes to the current process utilized in determining Rider IRP rates or the related accounting most recently approved by the Commission in its 2012 Order. The Application does request new maximum rates to be charged to customers during each of the years 2019 through 2024.

Q. What maximum Rider IRP rates is Columbia proposing in this case for the Small General Service schedule?

A. The Application proposes a maximum Rider IRP rate, effective May 1, 2019, of $11.50 per customer per month; a Rider IRP rate, effective May 1, 2020, not to exceed $12.80 per customer per month; a Rider IRP rate,

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Small Gas Transportation Service, Small General Schools Transportation Service, Full Requirements Small General Transportation Service, and Full Requirements Small General Schools Transportation Service.

effective May 1, 2021, not to exceed $14.10 per customer per month; a Rider IRP rate, effective May 1, 2022, not to exceed $15.40 per customer per month; and a Rider IRP rate, effective May 1, 2023, not to exceed $16.70 per customer per month.

Q. How were these maximum rates determined?

A. The proposed maximum Rider IRP rates were determined based on historic cost increases, which were then projected for the next five years, as is detailed in Attachment DMB-1 to my testimony.

On average, Columbia has seen a 15.57% increase from 2008 to 2016. Because the beginning of the IRP showed extreme fluctuation in the average cost per mile of AMRP main, the most recent four years of the program better represent the level of increases that Columbia expects over the five-year extension. Using the average annual increase over the most recent four years (6.47%) and applying this percentage to determine the capital necessary to install another 820 miles of Priority Pipe, I finalized the proposed maximum Rider IRP rates contained in the Application and Exhibit G.

Q. Why does Columbia need its proposed annual maximum rates for customers served under its Small General Service rate schedules?

A. Columbia is requesting the proposed annual maximum rates to account for rising costs anticipated by Columbia, as is further discussed by Mr. Ayers and Ms. Thompson.

Q. Why is the average cost increase over the past four years more representative of expected increases over the next five-year period?

A. Using the most recent four years of AMRP average costs eliminates the abnormal changes in the earlier years of the program. The most recent four years represent cost increases of a mature program, while taking into account the most recent contract renegotiation in 2016. As mentioned by Mr. Ayers, Columbia's blanket construction contracts expire at the end of 2020 and will be renegotiated during the proposed extension, resulting in another anticipated increase in costs.

IV. CUSTOMER IMPACT

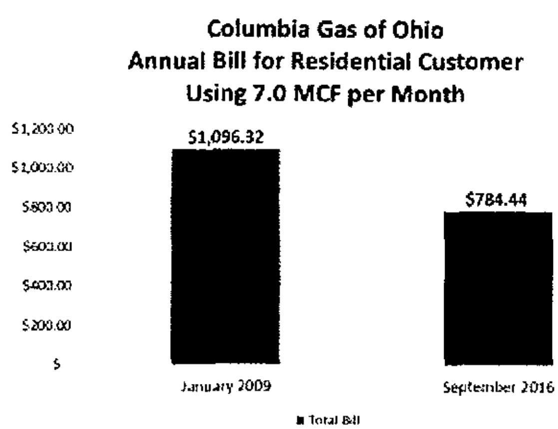
Q. Will increasing the capital investment in the IRP lead to a significant increase in customer bills?

A. No, increasing IRP investments will not significantly increase customer bills. Exhibit G to the Application is a bill comparison for all customer classes that shows the projected increase in the Rider IRP rate for a typical residential customer is less than 2% per month. The impact of Rider IRP rate increases on customers' bills is mitigated by the fact that in recent years, Columbia's customers have experienced lower natural gas prices compared to prices at the onset of the IRP in 2008, and these prices are projected to remain low for the foreseeable future.

This impact is further mitigated by the specific formula used to determine Rider IRP rates. This formula provides for the recovery of deferred costs over the useful life of the assets rather than on a current-year basis. This approach minimizes the immediate impact on customers and further eliminates the risk of excessive rate increases in any given year.

Q. Are average customer bills higher now than they were when the IRP was first approved?

A. No. The table below compares a Small General Service customer's bill in January 2009 with a customer's bill in 2016. This comparison demonstrates that a Small General Service customer's bill is approximately 30% less today than in 2008. The commodity portion of the bill is nearly 50% less today than they were when the IRP was first established.



Q. Does this conclude your Prepared Direct Testimony?

A. Yes.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017 upon the parties listed below.

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Historic Cost per Mile

	Cost/Priority Mile	% Increase	Total Capital	Miles Replaced*
2008	$406,695.32	-	$37,009,274.38	91
2009	$343,577.52	(15.52)%	$34,357,752.00	100
2010	$498,922.18	45.21%	$31,432,097.24	63
2011	$497,884.27	(0.21)%	$107,543,003.00	216
2012	$842,372.14	69.19%	$154,996,474.00	184
2013	$850,704.26	0.99%	$167,588,738.42	197
2014	$943,085.70	10.86%	$165,983,082.54	176
2015	$932,762.32	(1.09)%	$182,821,415.63	196
2016	$1,073,672.58	15.11%	$214,734,515.36	200
9-Year Historic Average		15.57%		
4-Year Historic Average		6.47%		

4-Year Historic Average

	Cost/Priority Mile	% Increase
2018	$1,216,989.78	6.47%
2019	$1,295,670.19	6.47%
2020	$1,379,437.42	6.47%
2021	$1,468,620.34	6.47%
2022	$1,563,569.08	6.47%
Average	**$1,384,857.36**	
Annual Rate Increase	**$1.27**	

9-Year Historic Average

	Cost/Priority Mile	% Increase
2018	$1,321,033.36	15.57%
2019	$1,526,680.54	15.57%
2020	$1,764,341.13	15.57%
2021	$2,038,998.69	15.57%
2022	$2,356,412.58	15.57%
Average	**$1,801,493.26**	
Annual Rate Increase	**$1.66**	

*Bare steel, cast iron and wrought iron pipe

Columbia Exhibit No. 3

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In the Matter of the Application of) Columbia Gas of Ohio, Inc. for Approval) of an Alternative Form of Regulation.)	Case No. 16-2422-GA-ALT

PREPARED DIRECT TESTIMONY
OF DIANA M. BEIL
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

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COLUMBIA GAS OF OHIO, INC.

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PREPARED DIRECT TESTIMONY
OF DIANA M. BEIL

I. INTRODUCTION

Q. Please state your name and business address.

A. Diana Beil, 290 W. Nationwide Blvd., Columbus, Ohio 43215.

Q. By whom are you employed?

A. I am employed by Columbia Gas of Ohio, Inc. ("Columbia").

Q. Please state briefly your educational background and experience.

A. I graduated from Miami University where I majored in Accounting with a minor in Management Information Systems and received a Bachelor of Science Degree in Business in May 2007. In August 2007, I joined the accounting firm Crowe Horwath (formerly Crowe Chizek) as an auditor and became a licensed certified public accountant ("CPA") in the state of Ohio in 2009. From 2010 to 2015, I was employed by NiSource Inc. in its SEC Financial Reporting Department, where I most recently held the position of Manager of SEC Reporting. I was hired by Columbia in December 2015 as Regulatory Affairs Manager. I am currently a member of the Ohio Society of CPAs, as well as a member of the American Institute of CPAs.

Q. What are your job responsibilities as Regulatory Programs Manager?

A. As Regulatory Programs Manager, my primary responsibilities include the planning, supervision, preparation and support of all Columbia regulatory filings before the Public Utilities Commission of Ohio ("Commission"). Other responsibilities include the preparation of exhibits, proposed tariff changes and testimony filed by Columbia in support of the continuation of its Infrastructure Replacement Program ("IRP") Rider.

Q. What is the purpose of your testimony?

A. My testimony supports the reasonableness of Columbia's request for continuation of its Rider IRP authorized in Case No. 08-73-GA-ALT by Opinion and Order ("2008 Order") dated December 3, 2008, and further extended in Case No. 11-5515-GA-ALT by Opinion and Order ("2012 Order") dated November 28, 2012. I will describe the exhibits I am sponsoring in support of Columbia's continuation of its Rider IRP. I will address the proposed increase in capital investment and the proposed maximum annual Rider IRP rates to be charge to customer over the five-year period.

II. BACKGROUND

Q. Please summarize Rider IRP.

A. The Commission's 2008 Order first authorized Columbia to establish Rider IRP for a five-year period, reflecting capital investments through 2012. Pursuant to that 2008 Order, Rider IRP provides for recovery of and return on Columbia's plant investment and related expenses as provided for in the Stipulation previously filed in Case No. 08-73-GA-ALT. The Commission's 2012 Order approved a five-year extension for Rider IRP, incorporating capital investments through 2017, with certain clarifications.

Rider IRP consists of three components. The first component recovers the costs associated with Columbia's Accelerated Mains Replacement Program ("AMRP"). Under the AMRP, Columbia plans to replace approximately 4,100 miles of priority pipe and an estimated 350,000 to 360,000 metallic service lines over a period of approximately 25 years. Further testimony filed in support of the continuation of this program is provided by Ms. Thompson and Mr. Ayers.

The second component recovers the costs associated with the replacement of natural gas risers that were prone to failure and the installation, maintenance, repair and replacement of customer service lines that have been determined to present an existing or probable hazard to persons and/or property. Columbia completed its replacement of prone-to-fail risers in June 2011, but has continued and will continue to repair and replace hazardous customer service lines. This component will be referred to as the Hazardous Customer Service Line program.

The third component recovers costs associated with Columbia's installation of Automated Meter Reading Devices ("AMRD") on all residential and commercial meters served by Columbia over approximately five years, beginning in 2009. Columbia is not seeking cost recovery for AMRDs installed after 2013.

Q. Please explain the process approved by the Commission in its 2008 Order for establishing rates through the Rider IRP mechanism.

A. The process approved by the Commission provides for Columbia's filing of a Notice of Intent by no later than November 30 of each year based on nine months actual data and three months estimated data. This Notice of Intent includes Columbia's initial IRP tariffs and supporting schedules for the Rider IRP to become effective the following May.

Columbia's Rider IRP filings will continue to comprise independent studies for the aforementioned programs. Columbia will continue to develop independent revenue requirement studies for its AMRP, Risers and Hazardous Customer Service Lines, and AMRD programs. Columbia will compute each revenue requirement based upon each program's costs. Columbia will allocate the revenue requirement for each program to each applicable rate schedule using the allocation basis approved by the Commission in its 2008 Order. Columbia will divide the allocated revenue requirement for each rate schedule by the projected bills to be sent to customers in each rate class for the following May through April. Columbia will then determine the Rider IRP, for each rate schedule, by aggregating the calculated rates for each of the programs comprising the Rider IRP.

Columbia will then file, by the following February 28th, an updated application with schedules supporting the proposed Rider IRP based on actual costs accumulated through the previous twelve months ended December. These filings will include all the accounting and billing details Staff needs in order to analyze the schedules and issue its Report of Investigation.

Subject to Commission approval, the Rider IRP will become effective by the following May 1 unless: (a) the Commission delays the effective date of the Rider IRP; (b) Staff determines Columbia's request to increase the Rider IRP is unjust and unreasonable; or (c) any party granted intervention by the Commission files an objection that is not resolved to the Commission's satisfaction.

Q. Will these filings continue to recognize achieved O&M expense savings?

A. Yes. The Stipulation approved by the Commission in its 2012 Order required Columbia to pass back meter reading expense savings and mains and services expense savings to customers through the Rider IRP. All meter reading expense savings were to be determined in accordance with the Stipulation approved by the Commission in its 2012 Order. Pursuant to the same Stipulation, savings resulting from Columbia's AMRP were to be the greater of the actual mains and services expense savings experienced or the minimum level of mains and services expense savings defined by the Stipulation. The current minimum level of savings provided for in the 2012 Order is $1,250,000.

Columbia is proposing to continue passing back both meter reading expense savings and mains and services expense savings to customers based on the criteria identified in the Stipulation approved by the Commission in its 2012 Order. Columbia proposes to maintain a minimum level of mains and services expense savings of $1,250,000 per year for the five-year extension. The amount of actual mains and services expense savings or the minimum level of savings, whichever greater, will be shown as a line item reduction in the annual revenue requirement calculation.

Q. **Does this process include a reconciliation adjustment to allow for the dollar-for-dollar matching of costs and revenues?**

A. Yes.

Q. **Why does Columbia continue to include costs related to its investment in replacing natural gas risers and installing AMRDs in its determination of the Rider IRP revenue requirement if it already completed those programs?**

A. Columbia continues to include the riser and AMRD components in its determination of the Rider IRP rate so Columbia may continue to earn a return of and on its investments in the risers and AMRDs until the Commission provides for recovery of these costs in a future rate case proceeding.

Q. **Has Rider IRP traditionally had a maximum rate?**

A. Yes. The stipulation approved by the Commission in Case No. 08-0073-GA-ALT included a provision that resulted in the establishment of a maximum rate to be charged to customers under Columbia's Small General Service[1] type rate schedules. This annual rate methodology was

[1] Small General Service includes Small General Sales Service, Small General Schools Sales Service,

extended in Case No. 11-5515-GA-ALT. The 2012 Order provided that the Rider IRP rate, effective May 1, 2014, could not exceed $6.20 per customer per month; the Rider IRP rate, effective May 1, 2015, could not exceed $7.20 per customer per month; the Rider IRP rate, effective May 1, 2016, could not exceed $8.20 per customer per month; the Rider IRP rate, effective May 1, 2017, cannot exceed $9.20 per customer per month; and the Rider IRP rate, effective May 1, 2018, cannot exceed $10.20 per customer per month.

III. APPLICATION AND PROPOSED MAXIMUM RIDER IRP RATES

Q. Why has Columbia filed the current Application?

A. The Stipulation approved by the Commission on November 28, 2012, stated that Columbia may continue its Rider IRP to reflect IRP investments made through December 31, 2017. The upcoming expiration of that authority necessitates an application to extend the program for an additional five years. A five-year extension allows Columbia to continue its accelerated replacement of aging infrastructure though the IRP, as further explained by Ms. Thompson. Additionally, in order to meet its commitment to replace all existing priority pipe and metallic services lines over a 25-year period, Columbia is requesting authority to establish new maximum rates through this five-year extension.

Q. Is Columbia proposing any changes to the procedures, terms, and conditions of cost recovery approved in Case No. 11-5515-GA-ALT?

A. Columbia's Application requests no changes to the current process utilized in determining Rider IRP rates or the related accounting most recently approved by the Commission in its 2012 Order. The Application does request new maximum rates to be charged to customers during each of the years 2019 through 2024.

Q. What maximum Rider IRP rates is Columbia proposing in this case for the Small General Service schedule?

A. The Application proposes a maximum Rider IRP rate, effective May 1, 2019, of $11.50 per customer per month; a Rider IRP rate, effective May 1, 2020, not to exceed $12.80 per customer per month; a Rider IRP rate,

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Small Gas Transportation Service, Small General Schools Transportation Service, Full Requirements Small General Transportation Service, and Full Requirements Small General Schools Transportation Service.

effective May 1, 2021, not to exceed $14.10 per customer per month; a Rider IRP rate, effective May 1, 2022, not to exceed $15.40 per customer per month; and a Rider IRP rate, effective May 1, 2023, not to exceed $16.70 per customer per month.

Q. How were these maximum rates determined?

A. The proposed maximum Rider IRP rates were determined based on historic cost increases, which were then projected for the next five years, as is detailed in Attachment DMB-1 to my testimony.

On average, Columbia has seen a 15.57% increase from 2008 to 2016. Because the beginning of the IRP showed extreme fluctuation in the average cost per mile of AMRP main, the most recent four years of the program better represent the level of increases that Columbia expects over the five-year extension. Using the average annual increase over the most recent four years (6.47%) and applying this percentage to determine the capital necessary to install another 820 miles of Priority Pipe, I finalized the proposed maximum Rider IRP rates contained in the Application and Exhibit G.

Q. Why does Columbia need its proposed annual maximum rates for customers served under its Small General Service rate schedules?

A. Columbia is requesting the proposed annual maximum rates to account for rising costs anticipated by Columbia, as is further discussed by Mr. Ayers and Ms. Thompson.

Q. Why is the average cost increase over the past four years more representative of expected increases over the next five-year period?

A. Using the most recent four years of AMRP average costs eliminates the abnormal changes in the earlier years of the program. The most recent four years represent cost increases of a mature program, while taking into account the most recent contract renegotiation in 2016. As mentioned by Mr. Ayers, Columbia's blanket construction contracts expire at the end of 2020 and will be renegotiated during the proposed extension, resulting in another anticipated increase in costs.

IV. CUSTOMER IMPACT

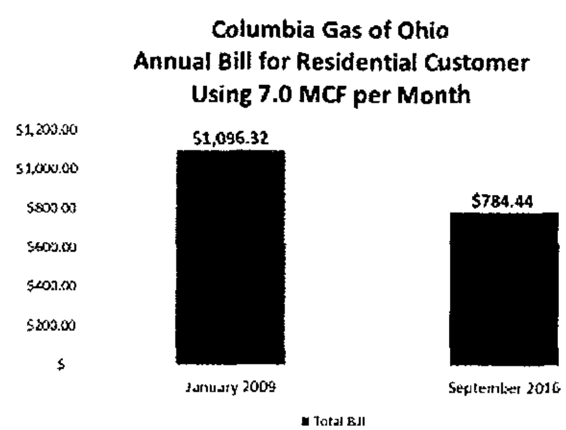
Q. Will increasing the capital investment in the IRP lead to a significant increase in customer bills?

A. No, increasing IRP investments will not significantly increase customer bills. Exhibit G to the Application is a bill comparison for all customer classes that shows the projected increase in the Rider IRP rate for a typical residential customer is less than 2% per month. The impact of Rider IRP rate increases on customers' bills is mitigated by the fact that in recent years, Columbia's customers have experienced lower natural gas prices compared to prices at the onset of the IRP in 2008, and these prices are projected to remain low for the foreseeable future.

This impact is further mitigated by the specific formula used to determine Rider IRP rates. This formula provides for the recovery of deferred costs over the useful life of the assets rather than on a current-year basis. This approach minimizes the immediate impact on customers and further eliminates the risk of excessive rate increases in any given year.

Q. Are average customer bills higher now than they were when the IRP was first approved?

A. No. The table below compares a Small General Service customer's bill in January 2009 with a customer's bill in 2016. This comparison demonstrates that a Small General Service customer's bill is approximately 30% less today than in 2008. The commodity portion of the bill is nearly 50% less today than they were when the IRP was first established.



Q. Does this conclude your Prepared Direct Testimony?

A. Yes.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017 upon the parties listed below.

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Historic Cost per Mile

	Cost/Priority Mile	% Increase	Total Capital	Miles Replaced*
2008	$406,695.32	-	$37,009,274.38	91
2009	$343,577.52	(15.52)%	$34,357,752.00	100
2010	$498,922.18	45.21%	$31,432,097.24	63
2011	$497,884.27	(0.21)%	$107,543,003.00	216
2012	$842,372.14	69.19%	$154,996,474.00	184
2013	$850,704.26	0.99%	$167,588,738.42	197
2014	$943,085.70	10.86%	$165,983,082.54	176
2015	$932,762.32	(1.09)%	$182,821,415.63	196
2016	$1,073,672.58	15.11%	$214,734,515.36	200
9-Year Historic Average		15.57%		
4-Year Historic Average		6.47%		

4-Year Historic Average

	Cost/Priority Mile	% Increase
2018	$1,216,989.78	6.47%
2019	$1,295,670.19	6.47%
2020	$1,379,437.42	6.47%
2021	$1,468,620.34	6.47%
2022	$1,563,569.08	6.47%
Average	**$1,384,857.36**	
Annual Rate Increase	**$1.27**	

9-Year Historic Average

	Cost/Priority Mile	% Increase
2018	$1,321,033.36	15.57%
2019	$1,526,680.54	15.57%
2020	$1,764,341.13	15.57%
2021	$2,038,998.69	15.57%
2022	$2,356,412.58	15.57%
Average	**$1,801,493.26**	
Annual Rate Increase	**$1.66**	

*Bare steel, cast iron and wrought iron pipe

Columbia Exhibit No. 4

BEFORE
THE PUBLIC UTILTIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.)	Case No. 16-2422-GA-ALT

PREPARED DIRECT TESTIMONY OF
MELISSA L. THOMPSON
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

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Attorneys for
COLUMBIA GAS OF OHIO, INC.

February 27, 2017

PREPARED DIRECT TESTIMONY
OF MELISSA L. THOMPSON

I. INTRODUCTION

Q. Please state your name and business address.

A. Melissa L. Thompson, 290 W. Nationwide Blvd., Columbus, Ohio 43215.

Q. By whom are you employed?

A. I am employed by Columbia Gas of Ohio, Inc. ("Columbia").

Q. Will you please state briefly your educational background and experience?

A. I attended Marietta College, earned a Bachelor of Arts in Communications and Political Science, and graduated magna cum laude from Capital University Law School. I worked for two years in private practice with law firms in Columbus, and joined the NiSource Legal Department in 2012. In 2015, I transitioned to my role as the Director of Regulatory Policy with Columbia.

Q. What are your job responsibilities as Director of Regulatory Policy?

A. My primary responsibilities include the planning, supervision, preparation and support of Columbia's regulatory filings before the Public Utilities Commission of Ohio ("Commission"). I also develop policy to support Columbia's energy efficiency and energy assistance programs and drive Columbia's regulatory initiatives to ensure execution of Columbia's business strategy.

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

A. The purpose of my testimony is to provide a review of Columbia's experience under the existing IRP and a summary of the instant Application, as well as to support and sponsor Exhibits A through F of the Application. I will also address various requirements in the Ohio Revised Code and Ohio Administrative Code that specifically relate to alternative regulation filings.

II. OVERVIEW OF THE INFRASTRUCTURE REPLACEMENT PROGRAM

Q. Is Columbia currently implementing an Infrastructure Replacement Program ("IRP")?

A. Yes. The Commission's orders in Case No. 08-72-GA-AIR, et al., as continued by Case No. 11-5515-GA-ALT, authorized Columbia to implement an IRP between 2008 and 2017 that provides for implementation of an Accelerated Mains Replacement Program ("AMRP"), a Hazardous Customer Service Line program, and an Automatic Meter Reading Program, with costs resulting from these programs to be recovered through annual filings.

Q. Please describe the scope of the Accelerated Mains Replacement Program, or AMRP.

A. Columbia's AMRP targets the replacement of corroding and hazardous mains over a 25-year timeframe. The types of gas main explicitly included in the AMRP, as initially approved, were bare steel, unprotected coated steel, wrought iron, and cast iron. These types of main ("Priority Pipe" or "Priority Main"), as found by the Commission, are more likely to leak, due to their material type, protection, age, and other characteristics.

In Columbia's last extension of the IRP, Case No. 11-5515-GA-ALT, the Commission adopted a Stipulation and Recommendation ("2011 Stipulation") that, among other things, clarified the scope of the AMRP to expressly include certain items, including interspersed sections of non-priority pipe, first generation plastic pipe, ineffectively coated steel, meter move outs, and government relocations.

Q. Please describe the Hazardous Customer Service Line program.

A. Under Columbia's approved tariff, Columbia also has the responsibility to maintain, repair, and replace customer-owned service lines deemed to present an existing or probable hazard to persons or property or require a scheduled repair or replacement based upon severity or location.

III. APPLICATION AND PROPOSED RIDER IRP RATE

Q. Please explain the components of Columbia's Application in this case.

A. Columbia requests authority to continue its IRP, with the items stipulated from Case No. 11-5515-GA-ALT, for an additional five years. This program has shown its success, as discussed in the testimony of Mr. Ayers, through the systematic replacement of hazardous customer service lines and Priority Pipe mains.

Q. Does the Application propose to modify any portion of the IRP?

A. No. It proposes to continue the existing IRP, consistent with the Commission's orders in the prior IRP cases, with new proposed maximum Rider IRP monthly rates for the SGS and the SGTS classes ("SGS Class"). These new maximum rates are necessary to ensure Columbia can replace its Priority Pipe during the twenty-five-year committed programmatic period.

Q. What are Columbia's proposed maximum Rider IRP monthly rates?

A. Columbia is proposing maximum SGS Class Rider IRP monthly rates ranging from $11.50 for calendar year 2018 investments to $16.70 for calendar year 2022 investments.

	2018	2019	2020	2021	2022
Maximum Rider IRP SGS Class Rate	$11.50	$12.80	$14.10	$15.40	$16.70

For background, since 2008, Columbia's Rider IRP rates have been limited in two ways. First, Columbia has agreed to a maximum monthly Rider IRP rate for the SGS Class. As shown below, this maximum rate has been effectively maintained throughout and underspent for the past nine years:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Maximum Rider IRP SGS Class Rate	$1.20	$2.20	$3.20	$4.20	$5.20	$6.20	$7.20	$8.20	$9.20	$10.20
Actual Rider IRP SGS Class Rate	$0.86	$1.62	$2.63	$3.57	$4.71	$5.71	$6.71	$7.65	$8.96	*Not Defined*

Second, the costs Columbia recovers on an annual basis are reviewed annually by the Commission for reasonableness and prudence. This reasonableness review ensures that Columbia only incurs and recovers from its customers those dollars determined to meet this regulatory standard.

Q. Do these proposed maximum Rider IRP rates have support throughout Columbia's Application and Testimony?

A. Yes, they do. The rates requested are to account for various factors since Columbia last sought an extension in 2011.

First, over the last nine years, in replacing pipe Columbia has experienced an approximate 15% increase in the average cost per mile, as is discussed in Ms. Beil's and Mr. Ayers's testimony. Columbia anticipates this trend to continue over the next five years.

Second, the proposed maximum rates reflect the increase in costs to construct Columbia's AMRP Projects. This includes the increase in hard and soft-surface restoration fees and costs, which are primarily driven by the municipalities that Columbia is serving.

Finally, in the fourth and fifth years of its extension, Columbia will be negotiating the extension of its blanket contracts. These blanket contractors are the construction crews that are primarily charged with installing the majority of Columbia's AMRP Projects.

These factors, taken together, support the proposed maximum Rider IRP monthly rates for the SGS Class.

Q. Are there other reasons to adopt the proposed maximum Rider IRP rates?

A. The commodity rates that customers are paying have appreciably decreased since Columbia's last base rate case in 2008. As further discussed by Ms. Beil, Columbia's customers are currently paying less than they were at the end of Columbia's last rate case. As the total bill impact to customers decreases, including the commodity portion of customers' bills, now is the optimal time to continue investing in infrastructure replacement.

IV. THE FILING REQUIREMENTS FOR ALTERNATIVE RATE PLAN APPLICATIONS IN OHIO ADMIN. CODE 4901:1-19-06

Q. Ohio Admin. Code 4901:1-19-06(C)(2) states that alternative rate plan applications must provide a detailed alternative rate plan. Does Columbia's Application provide an alternative rate plan?

A. Yes. Attached as Exhibit A to Columbia's application is an alternative rate plan that states the facts and grounds upon which Columbia's application is based. Exhibit A details the plan's elements, transition plans, and other matters required by the Commission's rules. Moreover, Exhibit A states and supports the rationale for Columbia's tariffs, which are not being changed with this application aside from the rate, for all impacted services.

Q. Ohio Admin. Code 4901:1-19-06(C)(3) requires alternative rate plan applications to list the services for which they have been exempted and provide certain other information regarding those exemptions. Does Columbia's Application provide information regarding any services the Commission has authorized it to exempt under R.C. 4929.04?

A. Yes. In Case No. 08-1344-GA-EXM, the Commission authorized an exemption for Columbia to implement its gas supply auctions, described later in my testimony. Columbia further details this compliance in Exhibit B to the Application.

Q. Ohio Admin. Code 4901:1-19-06(C)(4) requires an alternative rate plan application to discuss how the plan addresses potential issues concerning cross-subsidization of services. Will the adoption of Columbia's alternative regulation plan result in any cross subsidization of services?

A. No, as detailed in Exhibit C to the Application. Each of the revenue requirements is allocated by customer rate class based on the cost incurrence reported in the Class Cost of Service Study and approved by the Commission in Case No. 08-0072-GA-AIR. The use of these same factors better ensures the mitigation of potential cross-subsidization through assignment of the individual revenue requirement to customers on those bases previously determined appropriate by the Commission.

Q. R.C. § 4929.05(A)(1) and Ohio Admin. Code 4901:1-19-06(C)(5) require an alternative rate plan applicant to discuss how it complies with R.C. § 4905.35. Does Columbia comply with R.C. § 4905.35?

A. As explained in Exhibit D of the Application, Columbia is compliant with R.C. § 4905.35, which prohibits a public utility from making or giving any undue or unreasonable preference or advantage to any party or subjecting a party to undue or unreasonable prejudice or disadvantages; requires a utility to offer regulated services or goods to all similarly situated consumers, including those with which it is affiliated or which it controls, under comparable terms and conditions; mandates unbundling of services that include both regulated and unregulated services of goods; and prohibits a utility from conditioning or limiting the availability or condition of services of goods on the basis of identity of the supplier of the other services or goods or on the purchase of unregulated services or goods.

Columbia's public utility services are available on a comparable and nondiscriminatory basis. Columbia does not presently have any bundled service offerings that include a regulated and unregulated service. Columbia does not condition or limit the availability of any regulated services or goods, or the availability of a discounted rate or improved quality, price, term or condition for any regulated services or goods, on the basis of the identity of the supplier of any other services or goods or on the purchase of any unregulated services or goods from Columbia. Columbia offers its regulated services or goods to all similarly-situated customers, including any persons with which it is affiliated or which it controls, under comparable terms and conditions.

Columbia's approved Standards of Conduct (existing Tariff Sheet No. 22, Section VII, which is attached in Exhibit B), is based on the requirements of R.C. § 4905.35 and requires Columbia to comply with those requirements as noted in the following provisions:

- Columbia shall apply tariffs in a nondiscriminatory manner.
- Columbia shall enforce the tariffs in a nondiscriminatory manner.
- Columbia shall not give any supplier, including any marketing affiliate, or customers of any supplier, including any marketing affiliate, preference over any other suppliers or customers. For purposes of Columbia's CHOICE® Program, any ancillary service provided by Columbia that is not tariffed shall be priced uniformly for affiliated and nonaffiliated companies and available to all equally.

- Columbia shall process all similar requests for transportation in the same manner and within the same approximate period of time.
- Columbia shall not condition or tie its agreements to gas supply or for the release of interstate pipeline capacity to any agreement by a supplier, customer, or third party in which its marketing affiliate is involved.
- Neither Columbia nor any marketing affiliate shall communicate the idea that any advantage might accrue in the use of Columbia's service as a result of dealing with any supplier, including any marketing affiliate.

Columbia also requires all employees dealing with customers or suppliers in the areas covered by the code of conduct to receive annual training regarding its purpose and application.

Q. **R.C. § 4929.05(A)(1) and Ohio Admin. Code 4901:1-19-06(C)(5) also require an alternative rate plan applicant to discuss how it substantially complies with R.C. § 4929.02 and whether it expects to remain in substantial compliance with R.C. § 4929.02 after implementation of its Alternative Regulation Plan. Does Columbia substantially comply with R.C. § 4929.02, and will it continue to do so if the Commission approves its Application?**

A. As explained in Exhibit D, Columbia is currently in compliance with the provisions of R.C. § 4929.02 and will continue to be in compliance with those provisions after the alternative rate plan is implemented. R.C. § 4929.02 sets forth the state policy regarding natural gas services and goods. That policy promotes the availability of adequate, reliable and reasonably priced services and goods as well as the unbundling and comparability of those services and goods. It also supports effective choices for supplies and suppliers and encourages market access to supply-and demand-side services and goods. Other provisions address the importance of effective competition and the regulatory treatment needed to support that competition.

Columbia is in substantial compliance with the policies set forth in R.C. § 4929.02. Columbia's Gas Transportation Service Program and CHOICE® Program both offer unbundled and comparable natural gas services and goods alternatives that allow customers to choose their supplier, price, terms, and other conditions to meet their respective needs. Those programs promote diversity of natural gas supplies and suppliers, by giving consumers effective choices over the selection of those supplies and suppliers.

Approval of Columbia's Application will advance Ohio's policies to an even greater extent. By ensuring that Columbia is given the opportunity to timely recover its investments in replacing and repairing aging infrastructure, as well as invest in communities, the plan will enhance Columbia's ability to continue to offer adequate, reliable, and reasonably priced natural gas services and goods. The prices paid by customers will continue to be reviewed and approved by the Commission, and thus will remain reasonable.

Columbia has worked proactively with stakeholders in Ohio to implement unbundled and ancillary service offerings that provide customers with effective and convenient choices to meet their natural gas supply needs. In 2011, the Commission approved the establishment of a retail auction (Standard Choice Offer) process effective April 1, 2012, which continues today. Implementation of these processes, combined with Columbia's existing service programs, ensures continued and enhanced compliance with the policies contained in R.C. §§ 4905.35 and 4929.02.

Q. Ohio Admin. Code 4901:1-19-06(C)(5) requires an applicant to demonstrate that its alternative rate plan is just and reasonable. Is Columbia's alternative rate plan just and reasonable?

A. Yes. Columbia's IRP will continue to improve the safety and reliability of service and customer satisfaction and convenience and result in reduced leakage. The proposed maximum Rider IRP monthly rates for the SGS Class and annual rate review will ensure that the Rider IRP rate remains just and reasonable.

Q. Are you sponsoring any other exhibits attached to the Application?

A. Yes. Though not required by Ohio Admin. Code 4901:1-19-06(C), I am also sponsoring Exhibit F, which are copies of Columbia's current Rider IRP Tariff Sheets. The rates reflected in the tariff sheets in the exhibit are recovering costs associated with Columbia's IRP calendar year 2015 investment.

Q. Does this complete your Prepared Direct Testimony?

A. Yes, it does.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 27th day of February, 2017 upon the parties listed below.

/s/ *Eric B. Gallon*
Eric B. Gallon

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Columbia Exhibit No. 5

BEFORE
THE PUBLIC UTILTIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

2017 SEP -8 PM 4:31

**PREPARED SUPPLEMENTAL DIRECT TESTIMONY OF
MELISSA L. THOMPSON
ON BEHALF OF COLUMBIA GAS OF OHIO, INC.**

/s/ Stephen B. Seiple
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Attorneys for
COLUMBIA GAS OF OHIO, INC.

September 8, 2017

PREPARED SUPPLEMENTAL DIRECT TESTIMONY
OF MELISSA L. THOMPSON

I. INTRODUCTION

Q. Please state your name and business address.

A. Melissa L. Thompson, 290 W. Nationwide Blvd., Columbus, Ohio 43215.

Q. By whom are you employed?

A. I am employed by Columbia Gas of Ohio, Inc. ("Columbia").

Q. Did you previously file Prepared Direct Testimony in this case?

A. Yes, my Prepared Direct Testimony was filed on February 27, 2017.

Q. What is the purpose of your Supplemental Direct Testimony in this proceeding?

A. In addition to supporting the Application and corresponding exhibits in this proceeding, I am also supporting the Stipulation and Recommendation ("Stipulation") filed in this proceeding on August 18, 2017. I believe the Stipulation represents a fair and reasonable compromise of the issues in this proceeding and should be adopted and approved by the Public Utilities Commission of Ohio ("Commission").

II. THE STIPULATION AND RECOMMENDATION

Q. Please describe the Stipulation.

A. The Stipulation is a comprehensive settlement of all issues in this proceeding for the Signatory Parties. The major provisions of the Stipulation that modify Columbia's application are a decrease in the maximum monthly Rider IRP rate to be paid by Columbia's Small General Service[1] customers ("SGS Class") and an increase in the minimum level of O&M savings that are passed back to customers. Specifically, the Stipulation provides for the following SGS Class rates and minimum O&M Savings levels:

---

[1] Small General Service includes Small General Sales Service, Small General Schools Sales Service, Service, Small Gas Transportation Service, Small General Schools Transportation Service, Full Requirements Small General Transportation Service, and Full Requirements Small General Schools Transportation Service.

Investment Year	2018	2019	2020	2021	2022
Rates Effective	May 2019	May 2020	May 2021	May 2022	May 2023
Maximum Rider IRP SGS Class Rate	$11.35	$12.50	$13.70	$14.95	$16.20
Minimum AMRP O&M Savings	$2.00 million	$2.00 million	$2.25 million	$2.50 million	$2.50 million

Q. Does the Stipulation satisfy the Commission's criteria for evaluating the reasonableness of a stipulation?

A. Yes. The Stipulation satisfies each of the Commission's criteria for evaluating the reasonableness of a stipulation: the Stipulation is the result of serious bargaining among capable, knowledgeable parties; the Stipulation, as a package, benefits ratepayers and the public interest; and, the Stipulation package does not violate any important regulatory principle or practice.

Q. Were all parties to this case included in the negotiations that resulted in the Stipulation?

A. Yes.

Q. Which parties have signed the Stipulation?

A. In addition to Columbia, the Staff of the Public Utilities Commission of Ohio ("Staff") and Ohio Partners for Affordable Energy ("OPAE") have signed the Stipulation. Industrial Energy Users-Ohio ("IEU-Ohio") does not oppose the stipulation.

Q. Are there parties who are not part of the Stipulation?

A. Yes, the Office of the Ohio Consumers' Counsel ("OCC").

III. THE STIPULATION IS A PRODUCT OF SERIOUS BARGAINING AMONG CAPABLE, KNOWLEDGEABLE PARTIES

Q. Do you believe the Stipulation filed in this case is the product of serious bargaining among capable, knowledgeable parties?

A. Yes. The Stipulation is the product of an open process in which all parties were represented by able counsel and technical experts. Columbia and the other parties engaged in negotiations to produce the Stipulation filed on August 18, 2017. During these negotiations, Columbia and other parties presented various settlement positions and proposals that were considered and discussed.

Q. Does the Stipulation represent a compromise of issues by knowledgeable and experienced parties?

A. Yes, the Stipulation represents a comprehensive compromise of the issues in this case. Each party to the Stipulation regularly participates in Commission proceedings and other regulatory matters, and each party was represented by experienced and competent counsel.

Q. Do the Signatory Parties have a broad range of interests?

A. Yes, a broad range of interests is represented by the parties including Columbia, Staff, and OPAE. For example, OPAE represents the interests of low-income customers, including low-income residential customers, as well as its member community action agencies. Staff represents the interests of all customers and stakeholders in Ohio.

Q. Does the Stipulation serve as a reasonable resolution of issues?

A. Yes, the Signatory Parties recommend that the Stipulation be adopted as a fair, balanced and reasonable resolution of all of the issues in this proceeding. The Signatory Parties had differing positions concerning the maximum Rider IRP SGS Class rate, as well as the minimum threshold for O&M savings, both of which this Stipulation resolves.

As a result of these negotiations, the Stipulation provides that Columbia should be authorized to continue the IRP for an additional five years, with the modifications contained therein.

IV. THE SETTLEMENT BENEFITS RATEPAYERS AND THE PUBLIC INTEREST

Q. Does the Stipulation, as a package, benefit ratepayers and the public interest?

A. Yes, because it will promote safety and reliability, enhance customer service, and reduce the financial impact on customers.

Q. How will the Stipulation promote safety and reliability?

A. The Stipulation continues Columbia's Accelerated Mains Replacement Program ("AMRP") including the Hazardous Customer Service Line ("HCSL") Program. Under the AMRP, Columbia has been accelerating the replacement of bare steel, cast iron, wrought iron, and unprotected coated steel, which have a greater probability to leak due to their material type, protection, age, and other characteristics. The Stipulation allows Columbia to continue to implement its systematic replacement strategy, which targets the identification, selection, and replacement of this pipe with high relative risk. By extending the current AMRP, the Stipulation also enables Columbia to coordinate the replacement of this pipe in advance of state or municipal construction projects, which eliminates concerns over the intrusive maintenance efforts that Columbia would otherwise have to take in order to repair leaks and maintain an aging natural gas system. Finally, the Stipulation allows Columbia to continue to maintain responsibility for all maintenance, repair, and replacement of customer-owned service lines that have been determined by Columbia to present an existing or probable hazard to persons or property based on severity or location.

Q. **How will the Stipulation enhance customer service?**

A. With the accelerated replacement of aging infrastructure under the AMRP, Columbia can reduce customer outages due to leaks on bare steel, cast iron, wrought iron, unprotected coated steel, ineffectively coated steel, and first generation plastic main lines. Moreover, with Columbia replacing hazardous customer service lines under the HSCL Program, Columbia is able to quickly and efficiently repair customer service lines and relight customer appliances. Finally, with the uprating of main lines from low to medium pressure, Columbia is able to further increase the reliability of its system due to less ground water being able to infiltrate its facilities.

Q. **What is the Stipulation's financial impact on customers?**

A. The Stipulation provides for a reduction from Columbia's proposed maximum SGS Class rate. Over the five-year term, pursuant to the Stipulation, Columbia's SGS Class customers will see a per-month incremental increase in their maximum rider rate between $1.15 and $1.25 per year, in lieu of the proposed $1.30 rate change per year proposed in Columbia's Application.

Q. **Is it your opinion that the Stipulation, as a package, benefits customers and is in the public interest?**

A. Yes, I believe the Stipulation benefits customers and is in the public interest.

V. THE SETTLEMENT DOES NOT VIOLATE ANY IMPORTANT REGULATORY PRINCIPLE OR PRACTICE

Q. Does the Stipulation violate any important regulatory principle or practice?

A. No. The Stipulation does not violate any important regulatory principle or practice.

Q. Is the Stipulation consistent with recent Commission decisions involving similar applications?

A. Yes. The Stipulation is consistent with the Commission orders in past Columbia applications requesting the extension of the IRP, and is also consistent with other utilities' infrastructure replacement program extension orders, including those for The East Ohio Gas Company d/b/a Dominion East Ohio.

Q. Are you recommending that the Commission approve the Stipulation without modification?

A. Yes, I believe the Stipulation represents a fair, balanced and reasonable compromise of diverse interests and provides a fair result for customers. I believe the Stipulation meets all of the Commission's criteria for adoption of settlements and that the Commission should issue an order approving the settlement.

Q. Does this complete your Prepared Supplemental Direct Testimony?

A. Yes, it does.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned hereby certifies that a copy of the foregoing document is also being served via electronic mail on the 8th day of September, 2017, upon the parties listed below.

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Attorney for
COLUMBIA GAS OF OHIO, INC.

OCC EXHIBIT NO. 1

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

DIRECT TESTIMONY OF
DANIEL J. DUANN, Ph.D.

OPPOSING
THE JOINT STIPULATION AND RECOMMENDATION

On Behalf of
The Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485

September 28, 2017

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LIST OF ATTACHMENTS

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION.

A1. My name is Daniel J. Duann. My business address is 10 West Broad Street, Suite 1800, Columbus, Ohio, 43215. I am a Principal Regulatory Analyst with the Office of the Ohio Consumers' Counsel ("OCC").

Q2. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A2. I received my Ph.D. degree in Public Policy Analysis from the Wharton School, University of Pennsylvania. I also have a M.S. degree in Energy Management and Policy from the University of Pennsylvania, and a M.A. degree in Economics from the University of Kansas. I completed my undergraduate study in Business Administration at the National Taiwan University, Taiwan, Republic of China. I have been a Certified Rate of Return Analyst by the Society of Utility and Regulatory Financial Analysts since 2011.

I was a Utility Examiner II in the Forecasting Section of the Ohio Division of Energy, Ohio Department of Development, from 1983 to 1985. The Forecasting Section was later transferred to the Public Utilities Commission of Ohio ("PUCO"). From 1985 to 1986, I was an Economist with the Center of Health Policy Research at the American Medical Association in Chicago. In late 1986, I joined the Illinois Commerce Commission as a Senior Economist at its Policy

Analysis and Research Division. From 1987 to 1995, I was employed as a Senior Institute Economist at the National Regulatory Research Institute ("NRRI") at The Ohio State University. NRRI has been a policy research center funded by state public utilities commissions since 1976. NRRI is currently located in Silver Spring, Maryland and no longer a part of The Ohio State University. My work at NRRI involved research, the authoring of publications, and public services in many areas of utility regulation and energy policy. I was an independent consultant from 1996 to 2007.

I joined the OCC in January 2008 as a Senior Regulatory Analyst. I was promoted to my current position in November 2011. My primary responsibility is to assist the OCC by participating in various regulatory proceedings before the PUCO. These proceedings include rate cases, cost of capital, alternative regulation, fuel cost recovery, and other types of cases filed by Ohio's electric, gas, and water utilities.

Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?

A3. Yes. I have submitted expert testimony or testified on behalf of the OCC before the PUCO in a number of cases. A list of these cases is included in Attachment DJD-1.

Q4. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OTHER REGULATORY AGENCIES AND LEGISLATURES?

A4. Yes. I have testified before the Illinois Commerce Commission and the California Legislature on the restructuring and deregulation of electric utilities.

II. PURPOSE OF TESTIMONY

Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A5. The purpose of my testimony is to explain and support OCC's position regarding the Joint Stipulation and Recommendation ("Settlement") filed by Columbia Gas of Ohio, Inc. ("Columbia" or "Utility") on August 18, 2017.[1] My testimony addresses mainly those issues related to the 10.95 percent pre-tax rate of return on rate base proposed in the Application[2] and recommended for approval in the Settlement.[3] I am also responding to certain issues discussed in the prepared supplemental direct testimony filed by Columbia supporting the Settlement on September 8, 2017.[4] Other OCC witnesses will address other aspects of OCC's positions regarding the Settlement and Columbia's Application such as those

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[1] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Joint Stipulation and Recommendation (August 18, 2017) ("Settlement").

[2] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation,* Case No. 16-2422-GA-ALT, Application, Exhibit A at 9 (February 27, 2017).

[3] See PUCO Case No. 16-2422-GA-ALT, *Joint Stipulation and Recommendation*, Paragraph 1 (August 18, 2017).

[4] See PUCO Case No. 16-2422-GA-ALT, Prepared Supplemental Direct Testimony of Melissa L. Thompson (September 8, 2017).

identified and explained in OCC's Objections to the Staff Report and Application filed on August 14, 2017.[5] OCC's Objections are included as Attachment DJD-2.

III. EVALUATION OF THE SETTLEMENT

Q6. WHAT IS YOUR EVALUATION OF THE SETTLEMENT FILED BY COLUMBIA ON AUGUST 18, 2017?

A6. Based on my experience and knowledge as a regulatory economist and my participation in many proceedings before the PUCO, I conclude that the Settlement is not reasonable and should not be adopted by the PUCO. The Settlement does not satisfy the three-prong test used by the PUCO in evaluating and approving a settlement.

Specifically, the 10.95 percent pre-tax rate of return on rate base proposed in the Application and recommended for approval in the Settlement is excessive and unreasonable. By allowing Columbia to use an excessive and unreasonably high rate of return to calculate the revenue requirements of the Infrastructure Replacement Program ("IRP") Rider, the Settlement neither benefits customers nor the public interest. By allowing Columbia to earn a rate of return on its IRP investments that is significantly higher than those currently authorized for

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[5] See PUCO Case No. 16-2422-GA-ALT, Objections to Columbia's Application and The PUCO Staff's Report of Investigation By The Office of the Ohio Consumers' Counsel (August 14, 2017) (OCC's Objections).

comparable gas utilities, the Settlement violates important regulatory principles and practices regarding the setting of rates and the rate of return authorized for utility services.

In addition, based on my participation in this proceeding, it appears that the Settlement is largely a product of negotiations between Columbia and the PUCO Staff prior to the participation of other interested parties in the negotiation process. It has not been demonstrated by the Signatory Parties that the Settlement is a product of serious bargaining by knowledgeable and experienced parties. The Settlement does not represent a meaningful compromise of a broad range of interests and is not a reasonable resolution of the many issues in this proceeding.

Q7. WHAT IS THE STANDARD OF REVIEW THAT THE PUCO COMMONLY USES IN EVALUATING AND ADOPTING A SETTLEMENT?

A7. I understand that the PUCO typically evaluates a proposed settlement using a three-prong test.[6] Specifically, the PUCO will apply the following three tests in deciding whether to adopt a proposed settlement:

1. Is the proposed settlement a product of serious bargaining among capable, knowledgeable parties?

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[6] See, for example, *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates,* PUCO Case No. 11-351-EL-AIR et al. Opinion and Order at 8-10 (December 14, 2011).

> 2. Does the proposed settlement, as a package, benefit customers (ratepayers) and the public interest?
>
> 3. Does the proposed settlement package violate any important regulatory principle or practice?

Only when the PUCO determines that a proposed settlement, as a package, satisfies each of the three prongs identified above will the PUCO adopt the settlement or in many instances adopt it with significant modifications.

Q8. HAS COLUMBIA PROVIDED AN EXPLANATION OR JUSTIFICATION WHY ITS CUSTOMERS SHOULD FUND THE PROPOSED RATE OF RETURN OF 10.95 PERCENT ON ITS IRP INVESTMENTS?

A8. No. There is nothing in the Application, the Settlement, or other filings made by Columbia that explains or justifies Columbia's proposed rate of return on rate base for its IRP investments. Even though Columbia has the burden of proof in this proceeding, Columbia provides no adequate data and information regarding the selection and reasonableness of this pre-tax rate of return of 10.95 percent. There is only one paragraph in the filings provided by Columbia that mentions the pre-tax rate of return of 10.95 percent. At page 9, Exhibit A of the Application, it states:

> "This revenue requirement will provide for a return on rate base of 10.95% (an 8.12% rate of return plus a tax gross-up factor) and the return of all program costs."

However, there is no accompanying explanation or justification for that specific rate.

Q9. HAS THE PUCO STAFF PROVIDED AN EXPLANATION OR JUSTIFICATION REGARDING WHY IT IS REASONABLE FOR CUSTOMERS TO FUND THE PROPOSED RATE OF RETURN OF 10.95 PERCENT?

A9. No. I am unable to identify any items in the Staff Report,[7] the Settlement, or the Staff work papers that explains or demonstrates why the proposed rate of return of 10.95 percent is reasonable, and therefore should be adopted, in calculating the revenue requirement of Rider IRP.

Q10. WHAT IS YOUR UNDERSTANDING REGARDING THE PRE-TAX RATE OF RETURN OF 10.95 PERCENT PROPOSED BY COLUMBIA IN ITS APPLICATION?

A10. Based on my review of the Application and other related Columbia proceedings, specifically Columbia's most recent application to adjust Rider IRP and Rider DSM (PUCO Case No. 16-2236-GA-RDR),[8] it appears that the proposed pre-tax rate of return of 10.95 percent is derived from the Joint Stipulation &

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[7] See PUCO Case No. 16-2422-GA-ALT, A Report by the Staff of the Public Utilities Commission of Ohio (July 10, 2017) ("Staff Report").

[8] See PUCO Case No. 16-2236-GA-RDR, Application, Schedule AMRP-1 (February 27, 2017).

Recommendation approved in Columbia's last rate case (the "2008 Rate Case").[9] In the 2008 Rate Case, the PUCO approved a return on equity of 10.39 percent, an after-tax rate of return of 8.12 percent, a tax gross-up factor of 2.84 percent, and a pre-tax rate of return of 10.95 percent for Columbia's IRP investments.[10] By adopting a tax gross-up factor of 2.84 percent, it was imputed that Columbia would pay a federal income tax rate of approximately 35 percent.[11]

Q11. IS IT REASONABLE TO USE THE 10.95 PERCENT RATE OF RETURN THAT WAS ADOPTED TEN YEARS AGO TO CALCULATE RIDER IRP FOR IRP INVESTMENTS TO BE MADE IN THE NEXT FIVE YEARS?

A11. No. It is unreasonable and contrary to sound regulatory principles in the current proceeding to continue using a pre-tax rate of return of 10.95 percent that was approved by the PUCO ten years ago. By the end of the five-year extension, 2022, the 10.95 percent pre-tax rate of return will be in use for almost 15 years. Given the drastic decline in both the cost of capital and the authorized rate of returns and returns on equity for regulated gas utilities nationwide over the last ten years, Columbia should propose an updated and lower rate of return in

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[9] See *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Authority to Amend Filed Tariffs to Increase the Rates and Charges for Gas Distribution Service,* Case No. 08-72-GA-AIR, et al., ("2008 Rate Case").

[10] See PUCO Case No. 08-72-GA-AIR et al., Opinion and Order at 7-8, 25-26 (Dec. 3, 2008). In the 2008 Rate Case, Staff witness Jeffrey P. Hecker proposed a cost of debt of 5.78 percent, a capital structure of 49.29 percent debt and 50.71 percent equity, and a range of return on equity of 9.88 percent to 10.89 percent. See PUCO Case No. 08-72-GA-AIR et al., Prefiled Testimony of Jeffrey P. Hecker at 3 (October 8, 2008).

[11] $2.84\% = (10.39\% * 0.5071) / (1 - 0.35) - (10.39\% * 0.5071)$.

calculating the revenue requirement of Rider IRP associated with the IRP investments to be made from 2018 to 2022. The PUCO can and should set an updated and lower rate of return for Columbia's proposed IRP in this proceeding.

It is also unreasonable and contrary to sound regulatory principles to continue using an outdated and unreasonable rate of return that will unreasonably increase the financial burden on Columbia's customers, in particular the residential customers. To continue using this excessive pre-tax rate of return of 10.95 percent will result in unjust and unreasonable rates to be collected from Columbia's customers. It will only unjustifiably enrich the shareholders of Columbia. Doing so serves no public interest.

The 10.95 percent pre-tax rate of return was never intended to be used indefinitely to calculate Rider IRP. In fact, the PUCO-approved settlement in the 2008 Rate Case states:

> "The IRP shall be in effect for **the lesser of five years** from the effective date of rates approved in this proceeding or until new rates become effective as a result of Columbia's filing of an application for an increase in rates pursuant to section 4909.18, Revised Code, or Columbia's filing of a proposal to establish base

rates pursuant to an alternative method of regulation pursuant to Section 4929.05, Revised Code."[12]

It has been more than five years from the effective date of the rates approved in the 2008 Rate Case. Therefore, the pre-tax rate of return should be re-evaluated and lowered to reflect current financial market conditions. In addition, it is reasonable to expect that when Columbia requests an extension of its IRP for the second time, which is the subject of this proceeding, all facets (including the pre-tax rate of return on rate base) of Columbia's IRP should be reviewed and, subsequently, modified or terminated as necessary.

Q12. WHAT IS YOUR UNDERSTANDING OF THE REGULATORY PRINCIPLES AND PRACTICES IN SETTING A REASONABLE RATE OF RETURN FOR A REGULATED UTILITY?

A12. The regulatory principles and practices for setting a reasonable rate of return for a regulated utility in the United States are well-established and recognized. A public utilities commission, such as the PUCO, will typically set a reasonable rate of return for a regulated utility (which in turn will be used in setting the rates paid by customers) by considering the following objectives:

(1) The resulting rates paid by the customers of the regulated utility should be just and reasonable;

[12] See PUCO Case No. 08-72-GA-AIR et al., Opinion and Order at 8 (emphasis added).

(2) The regulated utility should have funds available to continue its normal course of business;

(3) The regulated utility should have access to capital (both equity and debt) at a reasonable cost in comparison to other businesses with comparable risks under current market conditions; and

(4) The shareholders of the regulated utility should be provided the opportunity to earn a fair return on their invested capital in comparison to other investments available.

Q13. HAVE THE AUTHORIZED RATE OF RETURN AND RETURN ON EQUITY FOR REGULATED GAS UTILITIES NATIONWIDE DECLINED SIGNIFICANTLY IN RECENT YEARS?

A13. Yes. Both the rate of return and the return on equity authorized for regulated gas utilities have declined significantly in recent years. This significant decline in the authorized returns for regulated utilities is not surprising given the very drastic decline in the cost of capital worldwide and the significant appreciation of the equity prices of regulated utilities in general. A summary of the after-tax rate of return and return on equity for gas utilities authorized nationwide from 2007 to 2016 is shown in Table 1.[13] The original report by S&P Global Market Intelligence is hereby included as Attachment DJD-3.

[13] See S&P Global Market Intelligence, *Regulatory Focus* at 5 (January 18, 2017).

Table 1
Summary Table of Rate of Return and Return on Equity Authorized For Gas Utilities (2007 to 2016)

Period	After-Tax Rate of Return %	# of Cases	Return on Equity %	# of Cases
2007	8.11%	(31)	10.22%	(35)
2008	8.49%	(33)	10.39%	(32)
2009	8.15%	(29)	10.22%	(30)
2010	7.99%	(40)	10.15%	(39)
2011	8.09%	(18)	9.92%	(16)
2012	7.98%	(30)	9.94%	(35)
2013	7.39%	(20)	9.68%	(21)
2014	7.65%	(27)	9.78%	(26)
2015	7.34%	(16)	9.60%	(16)
2016	**6.95%**	(24)	**9.50%**	(24)
Proposed by Columbia	**8.12%**		**10.39%**	

Q14. DOES THE 10.95 PERCENT PRE-TAX RATE OF RETURN PROPOSED BY COLUMBIA SIGNIFICANTLY EXCEED THE RATE OF RETURNS AUTHORIZED FOR REGULATED GAS UTILITIES NATIONWIDE IN RECENT YEARS?

A14. Yes. The proposed 10.95 percent pre-tax rate of return is much higher than those authorized for other regulated gas utilities nationwide in recent years. It should be noted that the pre-tax rate of return was not widely used and directly reported in the financial and regulatory publications. However, as discussed earlier, the 10.95 percent pre-tax rate of return proposed by Columbia was derived from an 8.12 percent after-tax rate of return and a tax gross-up factor of 2.84 percent (which was imputed assuming a federal income tax rate of 35 percent). So, comparing the 10.39 percent return on equity and the 8.12 percent after-tax rate of return (which were both approved in the 2008 Rate Case and underlie the pre-tax rate of return of 10.95 percent), with the returns on equity and after-tax rate of returns authorized for regulated gas utilities nationwide in recent years can demonstrate whether the pre-tax rate of return of 10.95 percent proposed by Columbia is overstated and unreasonable.

This proposed 10.95 percent pre-tax rate of return is indeed overstated and unreasonable. For example, in 2016, the average after-tax rate of return authorized for gas utilities nationwide was 6.95 percent (for a total of 24 rate cases).[14] For the same time period, the average return on equity authorized for gas utilities nationwide was 9.50 percent (for a total of 24 different rate cases).[15] If the same federal income tax rate of 35 percent is applied to the 6.95 percent average after-tax rate of return, and assuming the same cost of debt and capital structure as proposed by the Staff in the 2008 Rate Case, the imputed tax gross-up factor would be 2.21 percent and the pre-tax rate of return would be 9.16 percent.[16] The 6.95 percent after-tax rate of return would also impute a much lower authorized return on equity of 8.09 percent, assuming the same cost of debt and capital structure of the 2008 Rate Case were used.[17]

[14] See Table 1.

[15] Id.

[16] 2.21% = (6.95% - 2.85%) / (1- 0.35) – (6.95% - 2.85%), and 9.16% = 6.95% + 2.21%.

[17] 8.09% = (6.95% - 2.85%) / 0.5071.

Q15. DO COLUMBIA'S BUSINESS AND FINANCIAL RISKS JUSTIFY A MUCH HIGHER RATE OF RETURN IN COMPARISON TO OTHER REGULATED GAS UTILITIES NATIONWIDE?

A15. No. I am not aware any specific business or financial risks associated with Columbia at this time that would justify a much higher rate of return than those authorized for regulated gas utilities nationwide. And, in this proceeding, Columbia has not demonstrated that it is currently facing or expecting to face any unusual or substantially high business or financial risks that could cause the PUCO to authorize a rate of return for Columbia's IRP that is much higher than those being authorized for other gas utilities in recent years.

I have reviewed financial presentations made by Columbia and its parent company, NiSource Inc., as well as various trade publications and I did not identify any such unusual or substantially high business and financial risks that Columbia or its parent company is facing. Specifically, in a news release by NiSource Inc. announcing 2017 Second Quarter Earnings (it is included here as Attachment DJD-4), it states:[18]

> "Consistent with plans outlined in its Investor Day in March 2017, NiSource expects to grow its net operating earnings per share (non-GAAP) and dividend at 5 to 7 percent each year –based off the revised 2017 guidance – through 2020....With this robust

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[18] See News Release, *NiSource Reports Second Quarter Earnings, Increase 2017 Guidance*, (August 2, 2017).

> investment and steady earnings and dividend growth projected. NiSource continues its commitment to maintain investment grade credit ratings. Standard & Poor's rates NiSource at BBB+, Moody's at Baa2 and Fitch at BBB, all with stable outlooks. As of June 30, 2017, NiSource maintained $1.25 billion in net available liquidity, consisting of cash and available capacity under its credit facility."

Q16. WILL COLUMBIA'S FINANCIAL INTEGRITY OR ABILITY TO ACCESS CAPITAL AT REASONABLE COSTS BE ADVERSELY AFFECTED IF THE PROPOSED RATE OF RETURN OF 10.95 PERCENT FOR ITS IRP WERE NOT ADOPTED BY THE PUCO?

A16. No. I do not believe Columbia's financial integrity (that is the availability of financial resources to conduct its normal business) or ability to access capital at reasonable costs would be adversely affected if a lower pre-tax rate of return (such as the 10.17% proposed by OCC) is adopted for its IRP. In this proceeding, Columbia has not demonstrated that its financial integrity or access to capital at reasonable costs would be adversely affected if the proposed rate of return of 10.95% for the IRP program were not adopted.

In addition, my own review does not indicate that Columbia's financial integrity or access to capital at reasonable costs will be adversely affected, either. For example, as discussed in the recent news release, it is clear that Columbia and its parent company, NiSource Inc., are fully committed to a robust capital investment strategy and are confident about obtaining all necessary financing for this capital-intensive investment strategy.[19] Another example is a recent proposed agreement between an affiliate of Columbia, the Columbia Gas of Maryland Inc., with other parties in a distribution base rate case in Maryland. In that case, Columbia Gas of Maryland Inc. accepted, pending approval by the Maryland Public Service Commission, an authorized 9.7 percent return on equity and a 7.352 percent rate of return.[20] These authorized returns in another jurisdiction are well below those (a rate of return of 8.12 percent and a return on equity of 10.39 percent) proposed by Columbia in this proceeding.

Q17. WHAT WOULD YOU RECOMMEND FOR THE PRE-TAX RATE OF RETURN FOR RIDER IRP IF THE PROPOSED IRP PROGRAM WERE AUTHORIZED FOR THE NEXT FIVE YEARS?

A17. If Columbia's IRP program were authorized to continue for the next five years (which OCC is not conceding), I will recommend a pre-tax rate of return on rate base of 10.17 percent in calculating the revenue requirement of Rider IRP. This pre-tax rate of return of 10.17 percent is calculated on a return on equity of 9.39 percent, a cost of debt of 5.78 percent, and a capital structure of 50.71 percent equity and 49.29 percent debt. The calculation of my proposed pre-tax rate of

[19] See Attachment DJD-4.

[20] See Public Service Commission of Maryland, *In the Matter of the Application of Columbia Gas of Maryland, Inc. for Adjustment to Its Gas Base Rates,* Case No. 9447, Joint Motion for Approval of Agreement of Unanimous Stipulation and Settlement (July 28, 2017).

return is shown in Table 2. This proposed pre-tax rate of return of 10.17 percent is more reflective of those rates of return and return on equity recently authorized for regulated gas utilities nationwide. This 10.17 percent pre-tax rate of return, if adopted by the PUCO, along with other OCC-proposed modifications to Columbia's IRP, will result in rates that are reasonable and just to the customers and a rate of return fair to the shareholders of Columbia.[21]

Table 2
Recommended Pre-Tax Rate of Return

	% of Total	% Cost Rate	Weighted Cost (After-Tax)	Weighted Cost (Pre-Tax)
Long Term Debt	49.29%	5.78%	2.85%	2.85%
Common Equity	50.71%	9.39%	4.77%	7.32%
Total Capital	100.00%		7.62%	10.17%

Q18. WILL THE FINANCIAL BURDEN BORNE BY COLUMBIA'S CUSTOMERS FOR RIDER IRP BE SIGNIFICANTLY HIGHER THAN JUSTIFIED IF COLUMBIA'S PROPOSED RATE OF RETURN OF 10.95 PERCENT WERE ADOPTED?

A18. Yes. My analysis indicates that the financial burden borne by Columbia's customers will likely be significantly higher (approximately $62 million higher over the five-year period) if the pre-tax rate of return of 10.95 percent proposed by Columbia is adopted instead of the 10.17 percent rate of return proposed by

[21] In the Staff Report of a pending rate case, the Staff recommended a range of return on equity of 9.22 percent to 10.24 percent and a range of after-tax rate of return of 7.20 percent to 7.74 percent. These recommended ROEs and RORs are far below those proposed by Columbia (10.39 percent to 8.12 percent, respectively). They are largely aligned with my recommendation of 9.32 percent and 7.32 percent, respectively. See PUCO Case No. 17-0032-EL-AIR., Staff Report at 18-19 (September 26, 2017).

OCC. This estimation is based on the work papers (in Excel spreadsheet) provided by the PUCO Staff titled **Estimated Rate Impact of Proposed IRP Program (1018-2022)**. The relevant part of the original PUCO Staff work paper is attached as Attachment DJD-5.

It should be emphasized that I do not agree with all the assumptions, input data, and methodology used in the Staff's work papers. More importantly, the estimated total revenue requirements and the Rider IRP rates presented here do not represent OCC's positions or recommendations on these subjects. Another OCC witness will provide a more detailed analysis and specific recommendations regarding the proper rates of Rider IRP or the total revenue requirements if Columbia's IRP were to continue for the next five years. I am using this particular model provided by the PUCO Staff to highlight the difference in the total revenue requirements and Rider IRP to be collected from customers resulting solely and entirely from the difference in the pre-tax rate of return used in the analysis.

A summary of the estimated total revenue requirement over the five-year period under the two pre-tax rates of return using the Staff's model is summarized in Table 3. The Excel spreadsheets supporting Table 3 are attached as Attachment DJD-6.

Table 3
Estimated Total Revenue Requirement of Columbia IRP Program
(2018-2022)

	2018 (million)	**2019** (million)	**2020** (million)	**2021** (million)	**2022** (million)	**2018-2022 Total** (million)
Revenue Requirement (At 10.95% ROR)	$196.9	$225.5	$253.5	$279.9	$305.5	$1,261.4
Revenue Requirement (At 10.17% ROR)	$187.3	$214.5	$241.1	$266.2	$290.6	$1,199.7
Difference	$9.7	$11.1	$12.4	$13.7	$14.9	$61.7

I have also reviewed the **Infrastructure Replacement Program Rider Rate Analysis** provided by Columbia supporting the Settlement in response to OCC's discovery.[22] However, the information provided by Columbia is not sufficient for me to conduct a separate and different analysis regarding the increase of financial burden to Columbia's customers as a result of the higher pre-tax rate of return. The $62 million additional total revenue requirement over the five-year period is a reasonable and probably the best available estimate of the increase in customers' financial burden if the pre-tax rate of return of 10.95 percent were adopted.

[22] See PUCO Case No. 16-2422-GA-ALT, Discovery Response of Columbia in OCC RPD Set 6, No. Attachment A.

Q19. WILL THE RATES OF RIDER IRP PAID BY COLUMBIA'S SGS (MOSTLY RESIDENTIAL) CUSTOMERS BE SIGNIFICANTLY HIGHER THAN JUSTIFIED IF COLUMBIA'S PROPOSED RATE OF RETURN OF 10.95 PERCENT WERE ADOPTED?

A19. Yes. The Rider IRP paid by Columbia's SGS customers, which are mostly residential, will be significantly higher than that is justified if the proposed pre-tax rate of return of 10.95 percent were adopted by the PUCO. Currently, SGS customers pay about 72.36 percent of the total cost (or total revenue requirement) of Columbia's IRP. This cost allocation is not expected to change. Furthermore, Rider IRP is collected as a fixed monthly charge per customer regardless of the amount of gas used. A summary of the estimated monthly cost of Rider IRP for each SGS customer over the five-year period under the two pre-tax rates of return proposed by Columbia and OCC is summarized in Table 4. The Excel spreadsheets supporting Table 4 are attached as Attachment DJD-6. Once again, these estimated monthly costs presented here are to highlight the effects of a higher and unreasonable pre-tax rate of return. They are presented here to demonstrate the unreasonable and unnecessary increase in the financial burden to the SGS customers. The results here may also be considered, along with recommendations by other OCC witnesses, in lowering the annual caps of Rider IRP for SGS customers. As discussed earlier, the results here should not be viewed as OCC's recommendation on what the Rider IRP should be if Columbia's IRP were authorized for the next five years.

Table 4
Estimated Monthly Cost of Rider IRP for SGS Customer
(2018-2022)

	2018	2019	2020	2021	2022	Cumulative Difference In Monthly Cost (2018 – 2022)
Monthly Cost (At 10.95% ROR)	$11.48	$12.76	$14.02	$15.18	$16.28	
Monthly Cost (At 10.17% ROR)	$11.07	$12.29	$13.49	$14.61	$15.66	
Difference	$0.41	$0.47	$0.53	$0.57	$0.62	$2.50

Q20. WILL THE ADOPTION OF THE PROPOSED RATE OF RETURN OF 10.95 PERCENT AS PROPOSED IN THE APPLICATION AND RECOMMENDED FOR APPROVAL IN THE SETTLEMENT HARM THE CUSTOMERS AND THE PUBLIC INTEREST?

A20. Yes. As discussed above, the adoption of the proposed pre-tax rate of return of 10.95 percent will result in unjust and unreasonable rates collected from Columbia's 1.45 million customers.[23] The customers of Columbia will be forced to pay approximately $62 million more solely as a result of using an outdated and unreasonably high rate of return. This results in unnecessary and unreasonable harm to Columbia's customers who have already paid billions in the past for the IRP and may continue paying a more costly Rider IRP in the future. There is also no demonstration of any public policy justification to allow Columbia to collect from customers more money than is just and reasonable for its IRP.

[23] See PUCO Case No. 16-2236-GA-RDR, Application, Schedule AMRP-11 (February 27, 2017). Columbia has approximately 1,450,917 customers that pay Rider IRP in 2017.

Q21. WILL THE ADOPTION OF THE PROPOSED RATE OF RETURN OF 10.95 PERCENT VIOLATE IMPORTANT REGULATORY PRINCIPLES AND PRACTICES?

A21. Yes. As discussed above, the pre-tax rate of return of 10.95 percent proposed in the Application and recommended for approval in the Settlement is significantly higher than the rate of returns authorized for regulated gas utilities in recent years, and the reasonable rate of return supported by current financial market conditions and the state of the economy. If the PUCO adopts this excessive and unreasonable pre-tax rate of return of 10.95 percent, it will violate those fundamental and well-established regulatory principles that I have identified above. Specifically, the resulting rates (that is the Rider IRP) paid by the customers of the regulated utility (Columbia) would not be just and reasonable. Also, the shareholders of the regulated utility (Columbia) would be provided the opportunity to earn a much higher (thus unfair and unreasonable) return on their invested capital in comparison to other investments available.

Q22. DID YOU PARTICIPATE IN ANY FORMAL DISCUSSIONS WITH THE PARTIES BEFORE THE SETTLEMENT WAS FILED AT THE PUCO?

A22. Yes. I attended the one and only all-party settlement meeting on August 9, 2017. I also attended a telephone conference between OCC and Staff and the intervenors on August 15, 2017, before the Settlement was filed on August 18, 2017.

Q23 WAS THE SETTLEMENT A PRODUCT OF SERIOUS BARGAINING AMONG CAPABLE, KNOWLEDGEABLE PARTIES?

A23. No. The alleged "serious bargaining" process in this proceeding took just nine days, included just two counter offers (of which one was completely ignored) to the utility settlement offer, and substantively involved just two parties out of five—Columbia and Staff. Indeed, the Settlement was largely presented as a "take-it or leave-it" offer by Columbia to other parties in this proceeding. After an initial all-party negotiation session on August 9, 2017, there were no more negotiation sessions attended by all parties.

In addition, the single negotiation session was scheduled on just two days' notice before parties had even filed their Objections to the Staff Report and Application, and did not include a draft settlement offer before or during the negotiation session to facilitate or assist in any meaningful bargaining among parties. When OCC provided its counter-offer to the initial settlement offer (that was given by Columbia on August 10, 2017, one day after the all-party negotiation session), it was immediately rejected in full and the final settlement document was filed that same day, August 18, 2017, without any further "bargaining." OCC was essentially denied the chance of any serious bargaining.

Consequently, a large majority of the issues raised in OCC's counter settlement offer and in its Objections filed with the PUCO (see Attachment DJD-2) were not addressed at all in the Settlement or the settlement process. It is clear to me that this Settlement was not the product of any serious bargaining.

Q24. DOES THE SETTLEMENT REPRESENT A COMPROMISE OF ISSUES BY PARTIES WITH A BROAD RANGE OF INTERESTS?

A24. No. As discussed earlier, this Settlement is largely a take-it or leave-it offer from Columbia. At best, it may represent an agreement between Columbia and the PUCO Staff. However, the Settlement failed to address the large majority of the issues in OCC's and the Ohio Partners for Affordable Energy's ("OPAE") Objections to the Staff Report and Application filed with the PUCO.

In addition, the Settlement only has the support of one intervening party—OPAE. The Industrial Energy users of Ohio ("IEU-Ohio") agreed not to oppose the Settlement and OCC opposes the Settlement. It appears to me that OPAE, the applicant Utility, and the PUCO Staff (which represents the staff of the regulatory agency itself) do not necessarily create a broad range of interests. Indeed, this represents a narrow range of interests in this proceeding.

Q25. DOES THE SETTLEMENT SERVE AS A REASONABLE RESOLUTION OF ISSUES RELATED TO COLUMBIA'S IRP PROGRAM?

A25. No. This Settlement only specifically addresses two issues related to Columbia's IRP program (the Maximum Rider IRP for SGS customers[24] and the Minimum AMRP O&M Savings[25]), and unfortunately both issues were resolved unreasonably in the Settlement. A wide range of issues related to Columbia's IRP programs are not addressed at all in the Settlement. For example, as discussed extensively earlier in my testimony, the 10.95 percent pre-tax rate of return proposed in the Application and recommended for approval in the Settlement is unreasonable and violates important regulatory principles and practices. An updated and lower pre-tax rate of return should be adopted in any settlement of this proceeding. This issue was not even mentioned in the Settlement.

Another example of the issues not addressed or resolved is the need for a prudency audit and/or independent review of the efficiency and effectiveness of the IRP before the program be renewed with customers paying even more money (see OCC Objection 1).[26] The third example of issues not resolved is the reasonableness of Columbia's request to charge customers $125 million over five years for an accelerated service line replacement program that Columbia calls the

[24] See PUCO Case No. 16-2422-GA-ALT, Joint Stipulation and Recommendation, 3 (August 18, 2017).

[25] Id.

[26] See Attachment DJD-2 at 2.

"Hazardous Customer Service Line" ("HCSL") program (see OCC Objection 4).[27] There are many other issues or objections raised by OCC and OPAE not addressed or resolved in the Settlement. There is no doubt that this Settlement has failed to reasonably resolve many important issues associated with Columbia's IRP.

Q26. DOES THIS CONCLUDE YOUR TESTIMONY?

A26. Yes. However, I reserve the right to supplement my testimony in the event that additional testimony is filed, or if new information or data in connection with this proceeding becomes available.

[27] See Attachment DJD-2 at 5.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of Daniel J. Duann, Ph.D. on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below on this 28th day of September 2016.

/s/ *Kevin Moore*
Kevin Moore
Assistant Consumers' Counsel

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Daniel J. Duann, Ph.D.
List of Testimonies Filed Before PUCO

1. *Application of The Dayton Power and Light Company for Approval of Its Electric Security Plan*, Case No. 08-1094-EL-SSO (January 26, 2009).

2. *Application of Ohio American Water Company to Increase Its Rates for Water and Sewer Service Provided to Its Entire Service Area*, Case No. 09-391-WS-AIR (January 4,2010).

3. *Application of Aqua Ohio, Inc. for Authority to Increase its Rates and Charges in its Masury Division*, Case No. 09-560-WW-AIR (February 22, 2010).

4. *Application of Aqua Ohio, Inc. for Authority to increase its Rates and Charges in its Lake Erie Division*, Case No. 09-1044-WW-AIR (June 21, 2010).

5. *In the Matter of the Fuel Adjustment Clauses for Columbus Southern Power Company and Ohio Power Company*, Case Nos. 09-872-EL-FAC and 09-873-EL-FAC (August 16, 2010).

6. *In the Matter of the Application of Columbus Southern Power Company for Approval of an Electric Security Plan; an Amendment to its Corporate Separation Plan; and the Sale or Transfer of Certain Generating Asset (Remand)*, Case Nos. 08-917-EL-SSO et al (June 30, 2011).

7. *In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Approval of Tariffs to Modify and further Accelerate its Pipeline Infrastructure Replacement Program and to Recover the Associated Costs et al.*, Case Nos. 11-2401-GA-ALT and 08-169-GA-ALT (July 15, 2011).

8. *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to 4928.143, Ohio Rev. Code in the Form of an Electric Security Plan (ESP)*, Case Nos. 11-346-EL-SSO, et al (July 25,2011).

9. *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Merge and Related Approval (ESP Stipulation)*, Case Nos. 10-2376-EL-UNC, et al (September 27, 2011).

10. *In the Matter of the 2010 Annual Filing of Columbus Southern Power Company and Ohio Power Company Required by Rule 4901:1-35-10, Ohio Administrative Code,* Case Nos. 11-4571-EL-UNC and 11-4572-EL-UNC (October 12, 2011).

11. *In the Matter of the Application of Ohio American Water Company to Increase Its Rates for Water and Sewer Service Provided to Its Entire Service Area*, Case No. 11-4161-WS-AIR (March 1, 2012).

12. *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to 4928.143, Ohio Rev. Code in the Form of an Electric Security Plan (Modified ESP)*, Case Nos. 11-346-EL-SSO, et al (May 4, 2012).

13. *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company For Authority to Establish a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form Of an Electric Security Plan,* Case No. 12-1230-EL-SSO (May 21, 2012).

14. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates, et al.* Case Nos. 12-1682-EL-AIR (February 19, 2013).

15. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Gas Rates,* Case Nos. 12-1685-GA-AIR, et al (February 25, 2013).

16. *In the Matter of the Application of Dayton Power & Light Company for Authority to Establish a Standard Service Offer in the Form Of an Electric Security Plan Pursuant to R.C. 4928.143,* Case No. 12-426-EL-SSO et al. (March 1, 2013).

17. *In the Matter of the Application of The Dayton Power and Light Company for Authority to Recover of Certain Storm-related Service Restoration Costs,* Case Nos. 12-3062-EL-RDR, et al. (January 31, 2014).

18. *In the Matter of the Application of The Dayton Power and Light Company for Authority to Recover of Certain Storm-related Service Restoration Costs,* Case Nos. 12-3062-EL-RDR, et al. (May 23, 2014).

19. *In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates and Charges for Its Waterworks Service,* Case No. 13-2124-WW-AIR (August 4, 2014).

20. *In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Ride,* Case No. 14-1693-EL-RDR, et al. (September 11, 2015).

21. *In the matter of the Application of Duke Energy Ohio, Inc. for Approval of an Alternative Rate Plan Pursuant to R.C. 4929.05, Revised Code, for an Accelerated Service Line Replacement Program*, Case No. 14-1622-GA-ALT (November 6, 2015).

22. *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.141 in the Form of an Electric Security Plan,* Case No. 14-1297-EL-SSO (June 22, 2016).

23. *In the Matter of the Application of Ohio Power Company for Administration of the Significantly Excessive Earnings Test for 2014 Under Section 4928.143 (F), Revised Code, and Rule 4901:1-35-10, Ohio Administration Code.* 15-1022-EL-UNC et al. (August 15, 2016).
24. *In the Matter of the Application of Ohio Power Company for Administration of the Significantly Excessive Earnings Test for 2014 Under Section 4928.143 (F), Revised Code, and Rule 4901:1-35-10, Ohio Administration Code.* 15-1022-EL-UNC et al. (September 19, 2016).
25. *In the Matter of the Commission Review of the Capacity Charges of Ohio Power Company and Columbus Southern Power Company.* 10-2929-EL-UNC et al. (October 18, 2016).
26. *In the Matter of the Application of Aqua Ohio, Inc. for Authority to Increase Its Rates and Charges for Its Waterworks Service.* 16-907-WW-AIR (December 19, 2016).

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

OBJECTIONS TO
COLUMBIA'S APPLICATION AND
THE PUCO STAFF'S REPORT OF INVESTIGATION
BY
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL

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BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

OBJECTIONS TO
COLUMBIA'S APPLICATION AND
THE PUCO STAFF'S REPORT OF INVESTIGATION
BY
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL

I. INTRODUCTION

This case involves the request of Columbia Gas of Ohio, Inc. ("Columbia" or "Utility") to extend its pipeline replacement program for another five-year period, and increase a monthly charge to consumers from $10.20 (in 2017) to approximately $16.70 (in 2022).[1] The Office of the Ohio Consumers' Counsel ("OCC")[2] submits these objections to Columbia's Application (filed on February 27, 2017) and the Public Utilities Commission of Ohio's ("PUCO") Staff Report of Investigation ("Staff Report"), as filed in this case on July 10, 2017.[3]

OCC asks the PUCO to adopt these objections to Columbia's Application and the Staff Report when deciding how much Columbia's customers should pay for gas distribution service. OCC's Objections pertain to rates and issues under the Utility's Application and the Staff Report that are not just and reasonable. These objections meet the specificity requirement of Ohio Admin. Code 4901-1-28.

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[1] Application at 11.

[2] Under R.C. Chapter 4911, the OCC is the statewide representative for all of Duke's 382,000 residential electric utility customers.

[3] See R.C. 4909.19 and Ohio Admin. Code 4901-1-28(B).

Lack of an objection to any aspect of the Staff Report or Application should not preclude OCC from filing further pleadings or comments in this docket. Nor should it limit OCC's cross-examination or introduction of evidence or argument on any issue contained in the Staff Report in the event the PUCO Staff reverses, modifies, or withdraws its position on the issue. OCC reserves the right to amend and/or to supplement its objections in the event that the PUCO Staff reverses, modifies, or withdraws its position on any issue contained in the Staff Report. OCC also reserves the right to file expert testimony, produce fact witnesses, and introduce additional evidence in the event the PUCO schedules an evidentiary hearing.

II. OBJECTIONS TO COLUMBIA'S APPLICATION AND THE PUCO STAFF REPORT

OBJECTION 1: OCC objects to the Staff's failure to recommend that a prudency audit and/or independent review of the efficiency and effectiveness of Columbia's Infrastructure Replacement Program ("IRP") be conducted before proposing that the program be renewed, with customers paying even more money.

The Utility asks its customers to pay an estimated additional $1.3 billion over the next five years to renew the program; however, there has been no demonstration by Columbia that the customer benefits will outweigh or even be commensurate with this large investment. The intent of the IRP is to improve the safety of the Utility's distribution infrastructure by upgrading bare steel and cast iron pipelines that are prone to corrosion and leaking.[4] However, in the program's most recent years, the leak rates have not improved by any significant

[4] Application at 2, 6-7.

amount.[5] In addition, the costs to implement the program have steadily increased.[6]

Because actual leak rates on the Utility's distribution system are not improving and the costs to implement the program are increasing, an independent audit should be performed to ensure that safety of the infrastructure is improving as intended. Specifically, such an audit will aid the PUCO in determining whether the program is efficiently and effectively reducing leaks, improving safety, and minimizing costs per mile and costs per leak avoided. The results of the audit should also assist the PUCO in determining whether the rates consumers are paying under this program are just and reasonable.

OBJECTION 2: *OCC objects to Columbia's request to increase the Rider IRP customer charge cap (to $1.30 per month each year from 2018 to 2022). (Application at 11).*

Columbia has not provided evidence that shows that increasing the annual rate cap that customers fund from $1.00 to $1.30 per year (which can potentially increase the monthly charge by $6.50 over the five-year period) is necessary, just, reasonable, or in the public interest. The analysis and assumptions that Columbia relied on to justify its proposed rate cap increases were found by the Staff to be faulty and unreliable.[7] Columbia's estimates of the amount of total pipe that needs to be replaced and the costs per mile to replace the pipe are overstated.[8] Further, the rate of return used in determining the rate cap is excessive and unjust

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[5] See OCC INT set 2 No. 2 Att. A. Leaks declined from a high of 4462 in 2009 to 3796 in 2010, with a low of 3465 in 2014, but main leaks cleared in 2015 and 2016 was above 3700 and leaks cleared per mile increased. Attachment 1.

[6] See Columbia Direct Testimony of Diana Beil at 6-7, Attach. DMB-1 and Donald Ayers at 5-9.

[7] See Staff Report at 9-12 (Staff states that Columbia's analysis supporting the estimated capital investment that Columbia states it will need to install new pipeline is unreliable. The Staff Report also states that Columbia's analysis of historical costs to support the proposed increase to the annual IRP rate cap relies on an errant assumption).

[8] See Staff Report at 9-12.

and unreasonable. In addition, Columbia has not shown that it needs a rate cap increase. It has not exceeded or even reached the specified rate cap in any of the nine years of the rider's existence.[9] Columbia's requested IRP rate cap increase should not be approved before and without a prudency audit of the current IRP, as discussed in OCC Objection 1.

OBJECTION 3: OCC objects to the Staff 's recommendation to allow the Rider IRP rate cap increase of $1.00 per year from 2018 to 2020 and $1.10 per year from 2021 to 2022. (Staff Report at 12).

The PUCO Staff has not provided sufficient evidence that shows that a $1.00 or $1.10 increase in the rate cap is necessary, just, reasonable, or in the public interest. The analysis that PUCO Staff has relied on in sponsoring its rate cap increase is unsubstantiated. The Staff's estimates of the amount of total pipe that needs to be replaced and the costs per mile to replace the pipe are overstated. In addition, the rate of return used in determining the rate cap is excessive, unjust and unreasonable. Further, Columbia has not shown that it needs a rate cap increase. It has not exceeded or even reached its rate cap in any of the nine years of the program.[10] Therefore, the Staff's recommended IRP rate cap increase should not be approved before and without a prudency audit of the current IRP, as discussed in OCC Objection 1.

OBJECTION 4: OCC objects to Columbia's request to charge consumers $125 million over five years for an accelerated service line replacement program that Columbia calls the "Hazardous Customer Service Line" ("HCSL") program. (Application at 6-7). The PUCO just

[9] See Direct Testimony of Melissa Thompson at 4.

[10] See Direct Testimony of Melissa Thompson at 4.

last year denied a similar program that Duke Energy Ohio, Inc. proposed.[11] The PUCO should, consistent with its decision in the Duke ASRP case, not allow Columbia to continue the HCSL.

The Utility's request is unreasonable and unlawful because the evidence does not support the continued approval of the HCSL program. Columbia failed to provide sufficient evidence to show that the program provides benefits to public safety that are commensurate with its substantial costs ($125 million). Columbia failed to prove that it considered alternative methods or programs to mitigate the alleged risk. Columbia failed to provide any evidence regarding the level of risk to the system and/or public, addressing the likelihood of harm as well as the associated potential harm. Finally, Columbia failed to explain why the PUCO's pipeline safety regulations, codified in O.A.C. 4901:1-16-04, if followed, are not sufficient to resolve any alleged risk currently posed by customer service lines on Columbia's distribution system.

OBJECTION 5: OCC objects to the Staff's failure to deny or even address Columbia's request to charge consumers an additional $125 million over five years for an accelerated service line replacement program (HCSL program), for the reasons discussed in Objection 4.

OBJECTION 6: OCC objects to the Staff 's failure to direct Columbia to report more thoroughly on the performance metrics of the IRP (which customers pay for) over the next five years.

Specifically, the Staff Report should have directed Columbia to collect, at a minimum, the following information: (1) leak history associated with mains replaced (i.e., for each Job Order number under each Project ID for each year of the program from 2018 forward, the five-year history of leaks (by grade and year) on the mains that were replaced or retired under that job

[11] *In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Alternative Rate Plan Pursuant to R.C. 4929.05 for an Accelerated Service Line Replacement Program*, Case No. 14-1622-GA-ALT, Opinion and Order (Oct. 26, 2016) ("Duke ASRP case").

order); (2) leak history after replacement (i.e., for each Job Order under each Project ID in each year of the program from 2018 forward, the subsequent leaks (by grade and year) on the mains that were replaced or retired under that job order); (3) cost effectiveness (i.e., for each Job Order under each Project ID in each year, the total cost of the job order, once complete, divided by the five-year average number of leaks on the mains that were replaced or retired under that job order); (4) variance explanations (i.e., for each Job Order under each Project ID in each year for which the cost per leak addressed (the ratio in the cost effectiveness report described above) is higher than a threshold number (e.g., $1,000,000 per average leak), provide an explanation of what factors might have led to the high cost or low leak rate involved).

Without such performance metrics, it is not possible to determine whether the IRP is being implemented in a just and reasonable way.

OBJECTION 7: OCC objects to the amount and calculation of Operation and Maintenance expense ("O&M") savings that Columbia guarantees will be credited to consumers. (Application at 10). The O&M savings, which are supposed to be passed back to customers, should be much higher than the $1.25 million that Columbia proposed, given the enormous amount of money that is being spent, with customers paying a return on and of such huge investment.

At this time, Columbia guarantees to pass back a paltry $1.25 million to customers in future Rider adjustment cases. If Columbia's actual savings exceed the $1.25 million, then the actual O&M savings will be credited to customers. But, since the inception of the IRP program to date, the O&M savings from the program have not been greater than the minimum $1.25 million. As pointed out by Staff, other Ohio gas utilities with IRP programs very similar to Columbia's program, have produced much greater savings.[12] OCC agrees with Staff that if Columbia's IRP program has been successful in reducing the number of leaks, as the Utility indicated,[13] the annual O&M savings should have increased considerably. OCC objects to the Utility's proposal to continue to pass through a minimal amount of savings to customers when the program has cost customers hundreds of millions of dollars.

OBJECTION 8: OCC objects to Columbia's request to collect its IRP costs from customers with a return on rate base (profits) of 10.95 percent (i.e., an 8.12 percent rate of return plus a tax gross-up factor). (Application, Exhibit A at 9).

In its Application and supporting testimonies, Columbia has not carried its burden of proof to show that charging customers for a rate of return of 10.95 percent on rate base is just and reasonable at this time. Columbia has not provided any documentation that supports this proposed rate of return. This proposed rate of return of 10.95% is apparently derived from the rate of return approved in the 2008 Columbia alternative regulation rate case.[14] Moreover, under the proposed IRP rider, shareholders of Columbia have limited risk that does not justify the requested high return. Columbia needs to explain why it is just and reasonable for customers to fund this high rate of return (approved in 2008) for the next five years (from 2018 through 2022), given the significant decline in the cost of capital over the last ten years. Columbia has not done so in its Application.

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[12] Staff Report at 9.

[13] *Id.* at 9, citing Columbia's response to OCC INT's 2-24, 26, and 28 (June 23, 2017).

[14] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges,* Case No. 08-0073-GA-ALT, et al. Opinion and Order (Dec. 3, 2008).

OBJECTION 9: OCC objects to the Staff Report's failure to adjust the rate of return of 10.95 percent proposed by Columbia. The Staff should have recommended a lower rate of return, which would mean lower utility bills for consumers.

This proposed rate of return of 10.95 percent by Columbia is unreasonable, and would significantly increases the costs of the IRP programs borne by Columbia's customers. This 10.95 percent rate of return was approved by the PUCO in a 2008 alternative regulation rate case.[15] It was based largely on the prevailing financial market and economic conditions ten years ago. It far exceeds the average rate of return authorized for gas utilities in recent years. It should be adjusted downward based current financial market and economic conditions as well as the business and financial risks facing Columbia at this time.

OBJECTION 10: OCC objects to Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce the Maintenance of Mains expenses (Account 887) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's main lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[16] However, over the life of the program, the annual maintenance of main lines expenses has increased not decreased. This shows that the IRP is not effective at reducing main lines expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

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[15] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges,* Case No. 08-0073-GA-ALT, Opinion and Order (Dec. 3, 2008).

[16] Direct Testimony of Diana Beil at 3-4, Case No. 16-2422-GA-ALT.

OBJECTION 11: OCC Objects to the Staff's failure to challenge Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce Maintenance of Mains expenses (Account 887) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's main lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[17] However, over the life of the program, the annual maintenance of main lines expenses has increased, not decreased. The Staff should have required Columbia to explain why the IRP has not been effective at reducing main line expenses, and why such expenses are increasing and not decreasing. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

OBJECTION 12: OCC Objects to Columbia's request to continue the IRP even though the IRP has failed to reduce Maintenance of Services expenses (Account 892) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's service lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[18] However, over the life of the program, the annual maintenance of service lines expenses has increased, not decreased. This shows that the IRP is not effective at reducing service line expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

[17] Direct Testimony of Diana Beil at 3-4, Case No. 16-2422-GA-ALT.

[18] Direct Testimony of Diana Beil at 3-4, Case No. 16-2422-GA-ALT.

OBJECTION 13: OCC Objects to the Staff's failure to challenge Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce Maintenance of Services expenses (Account 892) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's service lines by replacing older unprotected metallic lines with new plastic or protected steel lines. However, over the life of the program, the annual maintenance of service lines expenses has increased, not decreased. This shows that the IRP is not effective at reducing service line expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

OBJECTION 14: OCC objects to Columbia's failure to reduce or, in the alternative, justify the amount of non-priority pipe that it is proposing to replace under the IRP. (Application at 8). The amount of non-priority pipe that Columbia is replacing appears to be excessive and may be contributing to the need to collect dramatic and unnecessary increases in IRP costs from customers. Replacing too much non-priority pipe is contributing to consumers having to pay unjust and unreasonable rates under Rider IRP. It may also be contributing to the need to increase the caps for IRP spending.

OBJECTION 15: OCC objects to the Staff 's failure to recommend that Columbia should reduce or, in the alternative, justify the amount of non-priority pipe that it is proposing to replace under the IRP. (Application at 8). The amount of non-priority pipe that Columbia is replacing appears to be excessive and may be contributing to the need to collect dramatic and unnecessary increases in IRP costs from customers. Replacing too much non-priority pipe is contributing to consumers having to pay unjust and unreasonable rates under Rider IRP. It may also be contributing to the need to increase the caps for IRP spending.

III. CONCLUSION

In conclusion, OCC objects to the above-mentioned provisions of Columbia's application and the PUCO's Staff Report because they are not just and reasonable. OCC asks the PUCO to adopt these objections to Columbia's Application and the Staff Report when deciding how much Columbia's customers should pay for gas distribution service.

Respectfully submitted,

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CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Objections* was served by electronic transmission upon the parties below this 14th day of August 2017.

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Regulatory Research Associates

REGULATORY FOCUS

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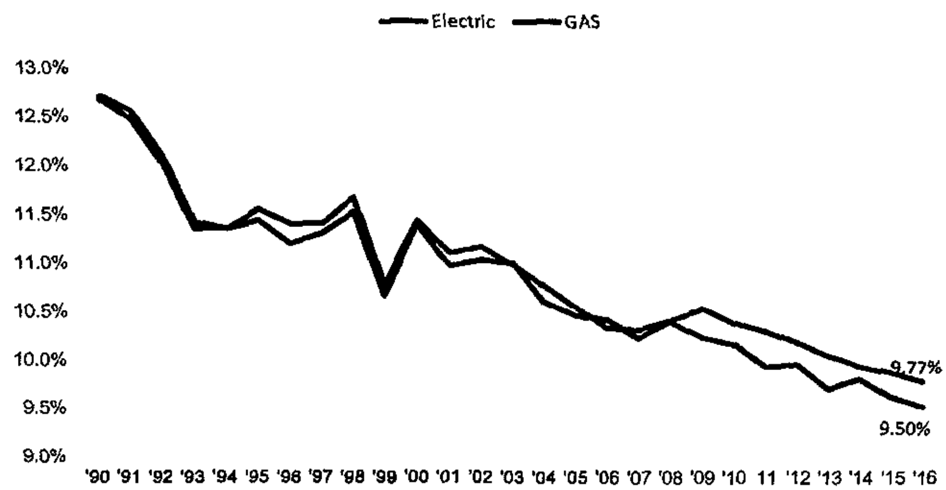
January 18, 2017

MAJOR RATE CASE DECISIONS — JANUARY-DECEMBER 2016

The average ROE authorized electric utilities was 9.77% in rate cases decided in 2016, compared to 9.85% in 2015. There were 42 electric ROE determinations in 2016, versus 30 in 2015. This data includes several limited issue rider cases; excluding these cases from the data, the average authorized ROE was 9.6% in rate cases decided in 2016, the same as in 2015. RRA notes that this differential in electric authorized ROEs is largely driven by Virginia statutes that authorize the State Corporation Commission to approve ROE premiums of up to 200 basis points for certain generation projects (see the Virginia Commission Profile). The average ROE authorized gas utilities was 9.5% in 2016 versus 9.6% in 2015. There were 24 gas cases that included an ROE determination in 2016, versus 16 in 2015.

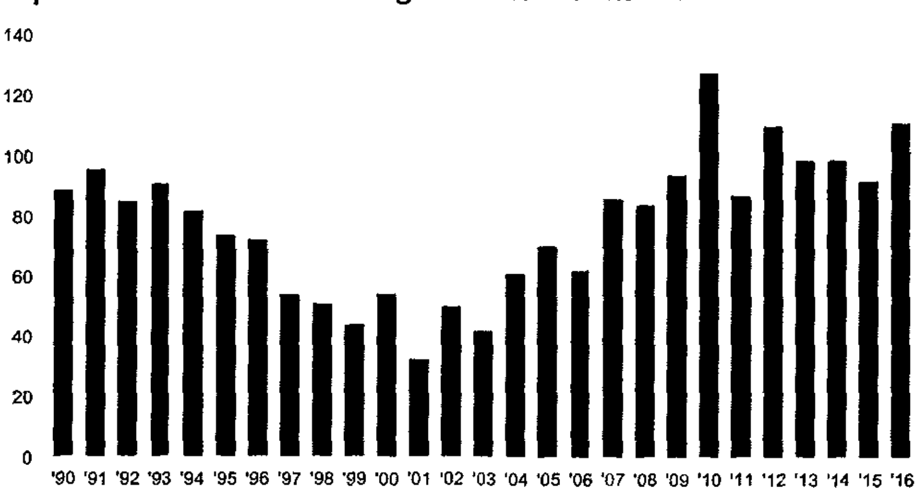
Graph 1: Average authorized ROEs — electric and gas rate decisions



Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

As shown in Graph 2 below, after reaching a low in the early-2000s, the number of rate case decisions for energy companies has generally increased over the last several years, peaking in 2010 at more than 125 cases.

Graph 2: Volume of electric and gas rate case decisions

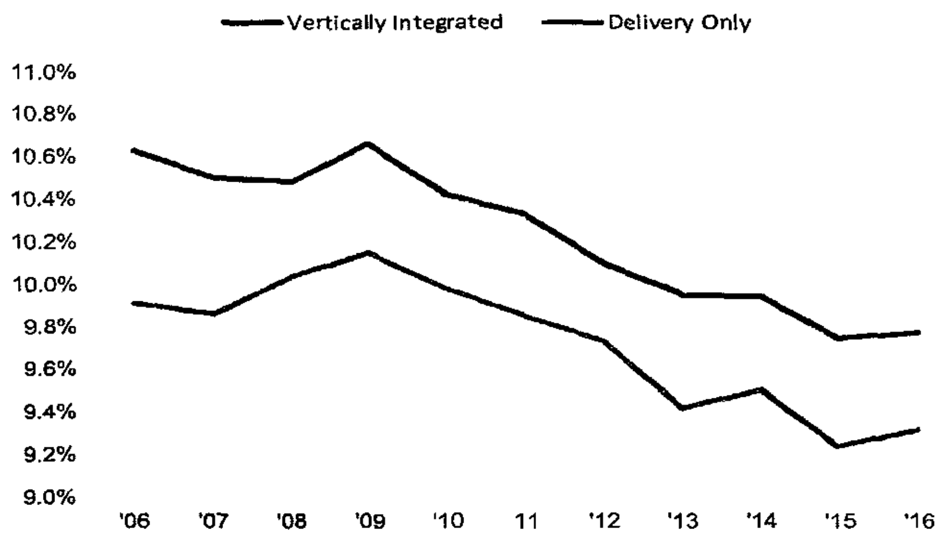


Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Since 2010, the number of rate cases has moderated somewhat but has been 90 or more in the last five calendar years. There were 111 electric and gas rate cases resolved in 2016, 92 in 2015, 99 in both 2014 and 2013, and 110 in 2012, and this level of rate case activity remains robust compared to the late 1990s/early 2000s. Increased costs associated with environmental compliance, including possible CO_2 reduction mandates, generation and delivery infrastructure upgrades and expansion, renewable generation mandates and employee benefits argue for the continuation of an active rate case agenda over the next few years. In addition, if the Federal Reserve continues its policy initiated in December 2015 to gradually raise the federal funds rate, utilities eventually would face higher capital costs and would need to initiate rate cases to reflect the higher capital costs in rates. However, the magnitude and pace of any additional Federal Reserve action to raise the federal funds rate is quite uncertain.

Included in tables on pages 6 and 7 of this report are comparisons, since 2006, of average authorized ROEs by settled versus fully litigated cases, general rate cases versus limited issues rider proceedings and vertically integrated cases versus delivery only cases. For both electric and gas cases, no pattern exists in average annual authorized ROEs in cases that were settled versus those that were fully litigated. In some years, the average authorized ROE was higher for fully litigated cases, in others it was higher for settled cases, and in a few years the authorized ROE was similar for fully litigated versus settled cases. Regarding electric cases that involve limited issue riders, over the last several years the annual average authorized ROEs in these cases was typically at least 100 basis points higher than in general rate cases, driven by the ROE premiums authorized in Virginia. Limited issue rider cases in which an ROE is determined have had extremely limited use in the gas industry. Comparing electric vertically integrated cases versus delivery only proceedings, RRA finds that the annual average authorized ROEs in vertically integrated cases are from roughly 40 to 70 basis points higher than in delivery only cases, arguably reflecting the increased risk associated with generation assets.

Graph 3: Average authorized electric ROEs



Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

We note that this report utilizes the simple mean for the return averages. In addition, the average equity returns indicated in this report reflect the cases decided in the specified time periods and are not necessarily representative of the returns actually earned by utilities industry wide.

As a result of electric industry restructuring, certain states unbundled electric rates and implemented retail competition for generation. Commissions in those states now have jurisdiction only over the revenue requirement and return parameters for delivery operations, which we footnote in our chronology beginning on page 8, thus complicating historical data comparability. We note that from 2008 through 2015, interest rates declined significantly, and average authorized ROEs have declined modestly. We also note the increased utilization of limited issue rider proceedings that allow utilities to recover certain costs outside of a general rate case and typically incorporate previously-determined return parameters.

The table on page 4 shows the average ROE authorized in major electric and gas rate decisions annually since 1990, and by quarter since 2013, followed by the number of observations in each period. The tables on page 5 indicate the composite electric and gas industry data for all major cases summarized annually since 2002 and by quarter for the past eight quarters. The individual electric and gas cases decided in 2016 are listed on pages 8-13, with the decision date shown first, followed by the company name, the abbreviation for the state issuing the decision, the authorized rate of return, or ROR, ROE, and percentage of common equity in the adopted capital structure. Next we indicate the month and year in which the adopted test year ended, whether the commission utilized an average or a year-end rate base, and the amount of the permanent rate change authorized. The dollar amounts represent the permanent rate change ordered at the time decisions were rendered. Fuel adjustment clause rate changes are not reflected in this study.

The table below tracks the average equity return authorized for all electric and gas rate cases combined, by year, for the last 27 years. As the table indicates, since 1990 authorized ROEs have generally trended downward, reflecting the significant decline in interest rates and capital costs that has occurred over this time frame. The combined average equity returns authorized for electric and gas utilities in each of the years 1990 through 2016, and the number of observations for each year are as follows:

Composite Electric and Gas Average Annual Authorized ROEs: 1990 — 2016

Year	Average ROE (%)	Observations	Year	Average ROE (%)	Observations
1990	12.69	(75)	2004	10.67	(39)
1991	12.51	(80)	2005	10.50	(55)
1992	12.06	(77)	2006	10.39	(42)
1993	11.37	(77)	2007	10.30	(76)
1994	11.34	(59)	2008	10.42	(67)
1995	11.51	(49)	2009	10.36	(68)
1996	11.29	(42)	2010	10.28	(100)
1997	11.34	(24)	2011	10.21	(59)
1998	11.59	(20)	2012	10.08	(93)
1999	10.74	(29)	2013	9.92	(71)
2000	11.41	(24)	2014	9.86	(63)
2001	11.05	(25)	2015	9.76	(46)
2002	11.10	(43)	2016	9.67	(66)
2003	10.98	(47)			

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Please Note: Historical data provided in this report may not match data provided on RRA's website due to certain differences in presentation, including the treatment of cases that were withdrawn or dismissed.

Dennis Sperduto

Average Equity Returns Authorized January 1990 - December 2016

Year	Period	Electric Utilities ROE %	Electric Utilities (# Cases)	Gas Utilities ROE %	Gas Utilities (# Cases)
1990	Full Year	12.70	(44)	12.67	(31)
1991	Full Year	12.55	(45)	12.46	(35)
1992	Full Year	12.09	(48)	12.01	(29)
1993	Full Year	11.41	(32)	11.35	(45)
1994	Full Year	11.34	(31)	11.35	(28)
1995	Full Year	11.55	(33)	11.43	(16)
1996	Full Year	11.39	(22)	11.19	(20)
1997	Full Year	11.40	(11)	11.29	(13)
1998	Full Year	11.66	(10)	11.51	(10)
1999	Full Year	10.77	(20)	10.66	(9)
2000	Full Year	11.43	(12)	11.39	(12)
2001	Full Year	11.09	(18)	10.95	(7)
2002	Full Year	11.16	(22)	11.03	(21)
2003	Full Year	10.97	(22)	10.99	(25)
2004	Full Year	10.75	(19)	10.59	(20)
2005	Full Year	10.54	(29)	10.46	(26)
2006	Full Year	10.32	(26)	10.40	(15)
2007	Full Year	10.30	(38)	10.22	(35)
2008	Full Year	10.41	(37)	10.39	(32)
2009	Full Year	10.52	(40)	10.22	(30)
2010	Full Year	10.37	(61)	10.15	(39)
2011	Full Year	10.29	(42)	9.92	(16)
2012	Full Year	10.17	(58)	9.94	(35)
	1st Quarter	10.28	(14)	9.57	(3)
	2nd Quarter	9.84	(7)	9.47	(6)
	3rd Quarter	10.06	(7)	9.60	(1)
	4th Quarter	9.91	(21)	9.83	(11)
2013	Full Year	10.03	(49)	9.68	(21)
	1st Quarter	10.23	(8)	9.54	(6)
	2nd Quarter	9.83	(5)	9.84	(8)
	3rd Quarter	9.87	(12)	9.45	(6)
	4th Quarter	9.78	(13)	10.28	(6)
2014	Full Year	9.91	(38)	9.78	(26)
	1st Quarter	10.37	(9)	9.47	(3)
	2nd Quarter	9.73	(7)	9.43	(3)
	3rd Quarter	9.40	(2)	9.75	(1)
	4th Quarter	9.62	(12)	9.68	(9)
2015	Full Year	9.85	(30)	9.60	(16)
	1st Quarter	10.29	(9)	9.48	(6)
	2nd Quarter	9.60	(7)	9.42	(6)
	3rd Quarter	9.76	(8)	9.47	(4)
	4th Quarter	9.57	(18)	9.60	(8)
2016	Full Year	9.77	(42)	9.50	(24)

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Electric Utilities--Summary Table

	Period	ROR %	(# Cases)	ROE %	(# Cases)	Cap. Struc.	(# Cases)	$ Mil.	(# Cases)
2002	Full Year	8.72	(20)	11.16	(22)	46.27	(19)	-475.4	(24)
2003	Full Year	8.86	(20)	10.97	(22)	49.41	(19)	313.8	(12)
2004	Full Year	8.44	(18)	10.75	(19)	46.84	(17)	1,091.5	(30)
2005	Full Year	8.30	(26)	10.54	(29)	46.73	(27)	1,373.7	(36)
2006	Full Year	8.32	(26)	10.32	(26)	48.54	(25)	1,318.1	(39)
2007	Full Year	8.18	(37)	10.30	(38)	47.88	(36)	1,405.7	(43)
2008	Full Year	8.21	(39)	10.41	(37)	47.94	(36)	2,823.2	(44)
2009	Full Year	8.24	(40)	10.52	(40)	48.57	(39)	4,191.7	(58)
2010	Full Year	8.01	(62)	10.37	(61)	48.63	(57)	4,921.9	(78)
2011	Full Year	8.00	(43)	10.29	(42)	48.26	(42)	2,595.1	(56)
2012	Full Year	7.95	(51)	10.17	(58)	50.69	(52)	3,080.7	(69)
2013	Full Year	7.66	(45)	10.03	(49)	49.25	(43)	3,328.6	(61)
2014	Full Year	7.60	(32)	9.91	(38)	50.28	(35)	2,053.7	(51)
	1st Quarter	7.74	(10)	10.37	(9)	51.91	(9)	203.6	(11)
	2nd Quarter	7.04	(9)	9.73	(7)	47.83	(6)	819.5	(17)
	3rd Quarter	7.85	(3)	9.40	(2)	51.08	(3)	379.6	(5)
	4th Quarter	7.22	(13)	9.62	(12)	48.24	(12)	488.7	(19)
2015	Full Year	7.38	(35)	9.85	(30)	49.54	(30)	1,891.5	(52)
	1st Quarter	7.03	(9)	10.29	(9)	46.06	(9)	311.2	(12)
	2nd Quarter	7.42	(7)	9.60	(7)	49.91	(7)	117.7	(9)
	3rd Quarter	7.23	(8)	9.76	(8)	49.11	(8)	499.1	(13)
	4th Quarter	7.38	(17)	9.57	(18)	49.93	(17)	1,421.4	(23)
2016	Full Year	7.28	(41)	9.77	(42)	48.91	(41)	2,349.4	(57)

Gas Utilities--Summary Table

	Period	ROR %	(# Cases)	ROE %	(# Cases)	Cap. Struc.	(# Cases)	$ Mil.	(# Cases)
2002	Full Year	8.80	(20)	11.03	(21)	48.29	(18)	303.6	(26)
2003	Full Year	8.75	(22)	10.99	(25)	49.93	(22)	260.1	(30)
2004	Full Year	8.34	(21)	10.59	(20)	45.90	(20)	303.5	(31)
2005	Full Year	8.25	(29)	10.46	(26)	48.66	(24)	458.4	(34)
2006	Full Year	8.44	(17)	10.40	(15)	47.24	(16)	392.5	(23)
2007	Full Year	8.11	(31)	10.22	(35)	48.47	(28)	645.3	(43)
2008	Full Year	8.49	(33)	10.39	(32)	50.35	(32)	700.0	(40)
2009	Full Year	8.15	(29)	10.22	(30)	48.49	(29)	438.6	(36)
2010	Full Year	7.99	(40)	10.15	(39)	48.70	(40)	776.5	(50)
2011	Full Year	8.09	(18)	9.92	(16)	52.49	(14)	367.0	(31)
2012	Full Year	7.98	(30)	9.94	(35)	51.13	(32)	264.0	(41)
2013	Full Year	7.39	(20)	9.68	(21)	50.60	(20)	494.9	(38)
2014	Full Year	7.65	(27)	9.78	(26)	51.11	(28)	529.2	(48)
	1st Quarter	6.41	(2)	9.47	(3)	50.41	(2)	168.9	(9)
	2nd Quarter	7.29	(3)	9.43	(3)	50.71	(3)	34.9	(8)
	3rd Quarter	7.35	(1)	9.75	(1)	42.01	(1)	103.9	(8)
	4th Quarter	7.54	(10)	9.68	(9)	50.40	(10)	186.5	(15)
2015	Full Year	7.34	(16)	9.60	(16)	49.93	(16)	494.1	(40)
	1st Quarter	7.12	(6)	9.48	(6)	50.83	(6)	120.2	(11)
	2nd Quarter	7.38	(6)	9.42	(6)	50.01	(6)	276.3	(16)
	3rd Quarter	6.59	(5)	9.47	(4)	48.44	(4)	106.3	(8)
	4th Quarter	6.71	(7)	9.60	(8)	48.74	(7)	733.1	(19)
2016	Full Year	6.95	(24)	9.50	(24)	49.56	(23)	1,235.9	(54)

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Electric Average Authorized ROEs: 2006 — 2016

Settled versus Fully Litigated Cases

	All Cases		Settled Cases		Fully Litigated Cases	
Year	ROE %	(# Cases)	ROE %	(# Cases)	ROE %	(# Cases)
2006	10.32	(26)	10.26	(11)	10.37	(15)
2007	10.30	(38)	10.42	(14)	10.23	(24)
2008	10.41	(37)	10.43	(17)	10.39	(20)
2009	10.52	(40)	10.64	(16)	10.45	(24)
2010	10.37	(61)	10.39	(34)	10.35	(27)
2011	10.29	(42)	10.12	(16)	10.39	(26)
2012	10.17	(58)	10.06	(29)	10.28	(29)
2013	10.03	(49)	10.12	(32)	9.85	(17)
2014	9.91	(38)	9.73	(17)	10.05	(21)
2015	9.85	(30)	10.07	(14)	9.66	(16)
2016	9.77	(42)	9.80	(17)	9.74	(25)

General Rate Cases versus Limited Issue Riders

	All Cases		General Rate Cases		Limited Issue Riders	
Year	ROE %	(# Cases)	ROE %	(# Cases)	ROE %	(# Cases)
2006	10.32	(26)	10.34	(25)	9.80	(1)
2007	10.30	(38)	10.31	(37)	9.90	(1)
2008	10.41	(37)	10.37	(35)	11.11	(2)
2009	10.52	(40)	10.52	(38)	10.55	(2)
2010	10.37	(61)	10.29	(58)	11.87	(3)
2011	10.29	(42)	10.19	(40)	12.30	(2)
2012	10.17	(58)	10.01	(52)	11.57	(6)
2013	10.03	(49)	9.81	(42)	11.34	(7)
2014	9.91	(38)	9.75	(33)	10.96	(5)
2015	9.85	(30)	9.60	(24)	10.87	(6)
2016	9.77	(42)	9.60	(32)	10.31	(10)

Vertically Integrated Cases versus Delivery Only Cases

	All Cases		Vertically Integrated Cases		Delivery Only Cases	
Year	ROE %	(# Cases)	ROE %	(# Cases)	ROE %	(# Cases)
2006	10.32	(26)	10.63	(15)	9.91	(10)
2007	10.30	(38)	10.50	(26)	9.86	(11)
2008	10.41	(37)	10.48	(26)	10.04	(9)
2009	10.52	(40)	10.66	(28)	10.15	(10)
2010	10.37	(61)	10.42	(41)	9.98	(17)
2011	10.29	(42)	10.33	(28)	9.85	(12)
2012	10.17	(58)	10.10	(39)	9.73	(13)
2013	10.03	(49)	9.95	(31)	9.41	(11)
2014	9.91	(38)	9.94	(19)	9.50	(14)
2015	9.85	(30)	9.75	(17)	9.23	(7)
2016	9.77	(42)	9.77	(20)	9.31	(12)

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Gas Average Authorized ROEs: 2006 — 2016

Settled versus Fully Litigated Cases

Year	All Cases ROE %	All Cases (# Cases)	Settled Cases ROE %	Settled Cases (# Cases)	Fully Litigated Cases ROE %	Fully Litigated Cases (# Cases)
2006	10.40	(15)	10.26	(7)	10.53	(8)
2007	10.22	(35)	10.24	(22)	10.20	(13)
2008	10.39	(32)	10.34	(20)	10.47	(12)
2009	10.22	(30)	10.43	(13)	10.05	(17)
2010	10.15	(39)	10.30	(12)	10.08	(27)
2011	9.92	(16)	10.08	(8)	9.76	(8)
2012	9.94	(35)	9.99	(14)	9.92	(21)
2013	9.68	(21)	9.80	(9)	9.59	(12)
2014	9.78	(26)	9.51	(11)	9.98	(15)
2015	9.60	(16)	9.60	(11)	9.58	(5)
2016	9.50	(24)	9.43	(14)	9.61	(10)

General Rate Cases versus Limited Issue Riders

Year	All Cases ROE %	All Cases (# Cases)	General Rate Cases ROE %	General Rate Cases (# Cases)	Limited Issue Riders ROE %	Limited Issue Riders (# Cases)
2006	10.40	(15)	10.40	(15)	—	(0)
2007	10.22	(35)	10.22	(35)	—	(0)
2008	10.39	(32)	10.39	(32)	—	(0)
2009	10.22	(30)	10.22	(30)	—	(0)
2010	10.15	(39)	10.15	(39)	—	(0)
2011	9.92	(16)	9.91	(15)	10.00	(1)
2012	9.94	(35)	9.93	(34)	10.40	(1)
2013	9.68	(21)	9.68	(21)	—	(0)
2014	9.78	(26)	9.78	(26)	—	(0)
2015	9.60	(16)	9.60	(16)	—	(0)
2016	9.50	(24)	9.49	(23)	9.70	(1)

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Electric Utility Decisions

Date	Company	State	ROR %	ROE %	Common Equity as % of Capital	Test Year	Rate Base	Amt. $ Mil.	Footnotes
1/5/16	MDU Resources Group	ND	7.95	10.50	50.27	12/16	—	15.1	(B,LIR,1)
1/6/16	Avista Corporation	WA	7.29	9.50	48.50	9/14	—	-8.1	(B)
1/28/16	Northern India-- Public Service Co.	IN	—	—	—	—	—	0.0	(LIR,2)
2/2/16	Kentucky Utilities Company	VA	—	—	—	12/14	—	5.5	(B)
2/23/16	Entergy Arkansas	AR	4.52	9.75	28.46	3/15	—	219.7	(B,*)
2/29/16	Virginia Electric and Power Company	VA	7.90	11.60	49.99	3/17	Average	21.0	(LIR,3)
2/29/16	Virginia Electric and Power Company	VA	7.40	10.60	49.99	3/17	Average	-9.3	(LIR,4)
2/29/16	Virginia Electric and Power Company	VA	7.40	10.60	49.99	3/17	Average	6.6	(LIR,5)
2/29/16	Virginia Electric and Power Company	VA	7.40	10.60	49.99	3/17	Average	-16.8	(LIR,6)
3/16/16	Indianapolis Power & Light Company	IN	6.51	9.85	37.33	6/14	Year-end	29.6	(*)
3/25/16	MDU Resources Group	MT	—	—	—	12/14	—	7.4	(B,Z)
3/29/16	Virginia Electric and Power Company	VA	6.90	9.60	49.99	3/17	Average	40.4	(LIR,7)
2016	1ST QUARTER: AVERAGES/TOTAL		7.03	10.29	46.06			311.2	
	OBSERVATIONS		9	9	9			12	
4/29/16	Fitchburg Gas and Electric Light Co.	MA	8.46	9.80	52.17	12/14	Year-end	2.1	(D)
6/3/16	Baltimore Gas and Electric Company	MD	7.28	9.75	51.90	11/15	Average	44.1	(D,R)
6/8/16	El Paso Electric Company	NM	7.67	9.48	49.29	12/14	Year-end	1.1	
6/15/16	New York State Electric & Gas Corp.	NY	6.68	9.00	48.00	4/17	Average	29.6	(B,D,Z,8)
6/15/16	Rochester Gas and Electric Corp.	NY	7.55	9.00	48.00	4/17	Average	3.0	(B,D,Z,8)
6/23/16	San Diego Gas & Electric Co.	CA	—	—	—	12/16	Average	3.0	(B,Z,9)
6/30/16	Appalachian Power Company	WV	—	—	—	—	—	55.1	(B,LIR,10)
6/30/16	Virginia Electric and Power Company	VA	7.40	10.60	49.99	8/17	Average	-25.7	(LIR,11)
6/30/16	Virginia Electric and Power Company	VA	6.90	9.60	49.99	8/17	Average	5.4	(LIR,12)
2016	2ND QUARTER: AVERAGES/TOTAL		7.42	9.60	49.91			117.7	
	OBSERVATIONS		7	7	7			9	
7/18/16	Northern Indiana Public Service Co.	IN	6.74	9.98	47.42	3/15	Year-end	72.5	(B,*)
8/9/16	Kingsport Power Company	TN	6.18	9.85	40.25	12/17	Average	8.6	(B)
8/10/16	Southwestern Public Service Co.	NM	—	—	—	—	—	23.5	(B)
8/10/16	Empire District Electric Company	MO	—	—	—	6/15	—	20.4	(B)
8/18/16	El Paso Electric Company	TX	—	—	—	3/15	—	40.7	(I,B)
8/18/16	UNS Electric, Inc.	AZ	7.22	9.50	52.83	12/14	Year-end	15.1	
8/22/16	Virginia Electric and Power Company	VA	—	—	—	8/17	—	21.3	(LIR, B,13)
8/24/16	Atlantic City Electric Company	NJ	7.64	9.75	49.48	12/15	Year-end	45.0	(D,B)

Electric Utility Decisions (continued)

Date	Company	State	ROR %	ROE %	Common Equity as % of Capital	Test Year	Rate Base	Amt. $ Mil.	Footnotes
9/1/16	PacifiCorp	WA	7.30	9.50	49.10	6/15	Year-end	13.7	(Z)
9/8/16	Upper Peninsula Power Company	MI	7.47	10.00	53.49	12/16	Average	4.6	(I,*)
9/28/16	Public Service Co. of New Mexico	NM	7.71	9.58	49.61	9/16	Average	61.2	
9/28/16	KCP&L Greater Missouri Operations	MO	—	—	—	—	—	3.0	(B)
9/30/16	Massachusetts Electric Company	MA	7.58	9.90	50.70	6/15	Year-end	169.7	(D)
2016	3RD QUARTER: AVERAGES/TOTAL		7.23	9.76	49.11			499.3	
	OBSERVATIONS		8	8	8			13	
10/6/16	Appalachian Power Company	VA	—	9.40	—	—	—	—	(LIR)
10/19/16	South Carolina Electric & Gas Co.	SC	8.24	—	51.35	6/16	Year-end	64.4	(LIR, 14)
10/26/16	Northern States Power Company - WI	WI	—	—	—	12/17	—	24.5	(15)
11/9/16	Madison Gas and Electric Company	WI	7.89	9.80	57.16	12/17	Average	-3.3	
11/10/16	Public Service Company of Oklahoma	OK	6.94	9.50	44.00	1/15	Year-end	14.5	
11/15/16	Potomac Electric Power Company	MD	7.49	9.55	49.55	12/15	Average	52.5	(D)
11/18/16	Wisconsin Power and Light Company	WI	7.91	10.00	52.20	12/18	Average	9.4	(B,Z)
11/29/16	Florida Power & Light Company	FL	—	10.55	—	12/18	—	811.0	(B,Z)
12/1/16	Liberty Utilities (CalPeco Electric) LLC	CA	7.51	10.00	52.50	12/16	Average	8.3	(B)
12/6/16	Commonwealth Edison Company	IL	6.71	8.64	45.62	12/15	Year-end	130.9	(D)
12/6/16	Ameren Illinois Company	IL	7.28	8.64	50.00	12/15	Year-end	-8.8	(D)
12/6/16	Entergy Arkansas, Inc.	AR	—	—	—	12/17	—	54.4	(B)
12/7/16	Duke Energy Progress, LLC	SC	7.21	10.10	53.00	12/15	Year-end	56.2	(B,Z)
12/9/16	Monongahela Power Company	WV	—	—	—	6/16	—	25.0	(B,LIR,16)
12/12/16	Jersey Central Power & Light Co.	NJ	7.47	9.60	45.00	6/16	Year-end	80.0	(B,D)
12/14/16	United Illuminating Company	CT	7.08	9.10	50.00	12/15	Average	57.4	(D,Z)
12/15/16	Avista Corporation	WA	—	—	—	—	—	0.0	(17)
12/19/16	Black Hills Colorado Electric Utility Co.	CO	7.43	9.37	52.39	12/15	Average	0.6	
12/19/16	Emera Maine	ME	7.45	9.00	49.00	12/14	Average	3.0	(D,Hy)
12/20/16	Georgia Power Company	GA	—	—	—	12/17	—	—	(LIR,W,18)
12/22/16	Sierra Pacific Power Company	NV	6.65	9.60	48.03	12/15	—	-2.9	(B)
12/22/16	Virginia Electric and Power Company	NC	7.37	9.90	51.75	12/15	Year-end	34.7	(B,I)
12/23/16	Hawaiian Electric Company, Inc.	HI	—	—	—	—	—	0.0	(19)
12/28/16	Avista Corporation	ID	7.58	9.50	50.00	12/15	Average	6.3	(B)
12/30/16	Appalachian Power Company	VA	7.30	10.00	47.22	12/17	Average	3.3	(B,LIR,20)
2016	4TH QUARTER: AVERAGES/TOTAL		7.38	9.57	49.93			1,421.4	
	OBSERVATIONS		17	18	17			23	
2016	FULL YEAR: AVERAGES/TOTAL		7.28	9.77	48.91			2,349.6	
	OBSERVATIONS		41	42	41			57	

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

Gas Utility Decisions

Date	Company	State	ROR %	ROE %	Common Equity as % of Capital	Test Year	Rate Base	Amt. $ Mil.	Footnotes
1/6/16	Oklahoma Natural Gas Company	OK	7.31	9.50	60.50	3/15	Year-end	30.0	(B)
1/6/16	Avista Corporation	WA	7.29	9.50	48.50	09/14	—	10.8	(B)
1/28/16	SourceGas Arkansas	AR	5.33	9.40	39.46	3/15	Year-end	8.0	(B,*)
2/10/16	Liberty Utilities (New England Nat. Gas)	MA	7.99	9.60	50.00	12/14	Year-end	7.8	(B)
2/16/16	Public Service Company of Colorado	CO	7.33	9.50	56.51	12/14	Average	39.2	(I,Z,R)
2/25/16	*Black Hills Kansas Gas Utility Company*	KS	—	—	—	10/15	Year-end	0.8	(LIR,21)
2/29/16	Avista Corporation	OR	7.46	9.40	50.00	12/16	Average	4.5	
3/17/16	Atmos Energy Corporation	KS	—	—	—	3/15	—	2.2	(B)
3/30/16	Indiana Gas Company, Inc.	IN	—	—	—	6/15	Year-end	7.0	(LIR,22)
3/30/16	Northern Indiana Public Service Co.	IN	—	—	—	6/15	Year-end	7.6	(LIR,23)
3/30/16	Southern Indiana Gas and Electric Co.	IN	—	—	—	6/15	Year-end	2.3	(LIR,22)
2016	1ST QUARTER: AVERAGES/TOTAL		7.12	9.48	50.83			120.2	
	OBSERVATIONS		6	6	6			11	
4/21/16	Consumers Energy Company	MI	—	—	—	12/16	—	40.0	(I,B)
4/29/16	Fitchburg Gas and Electric Light Company	MA	8.46	9.80	52.17	12/14	Year-end	1.6	
5/5/16	CenterPoint Energy Resources Corp.	MN	7.07	9.49	50.00	9/16	Average	27.5	(I)
5/11/16	Liberty Utilities (Midstates Nat. Gas)	MO	—	—	—	1/16	—	0.2	(LIR,24)
5/19/16	Delta Natural Gas Company	KY	—	—	—	12/15	Year-end	1.4	(LIR)
5/19/16	Laclede Gas Company	MO	—	—	—	2/16	Year-end	5.4	(LIR,25)
5/19/16	Missouri Gas Energy	MO	—	—	—	2/16	Year-end	3.6	(LIR,25)
6/1/16	Maine Natural Gas	ME	7.28	9.55	50.00	9/14	Average	2.5	(B,Z)
6/3/16	Baltimore Gas and Electric Company	MD	7.23	9.65	51.90	11/15	Average	47.9	(R)
6/15/16	New York State Electric & Gas Corporation	NY	6.68	9.00	48.00	4/17	Average	13.1	(B,Z,7)
6/15/16	Rochester Gas and Electric Corp.	NY	7.55	9.00	48.00	4/17	Average	8.8	(B,Z,7)
6/22/16	Northern Indiana Public Service Co.	IN	—	—	—	12/15	Year-end	6.7	(LIR,E,26)
6/23/16	San Diego Gas & Electric Co.	CA	—	—	—	12/16	Average	-1.6	(B,Z,27)
6/23/16	Southern California Gas Company	CA	—	—	—	12/16	Average	106.9	(B,Z,9)
6/29/16	Indiana Gas Company, Inc.	IN	—	—	—	12/15	Year-end	10.2	(LIR,28)
6/29/16	Southern Indiana Gas and Electric Co.	IN	—	—	—	12/15	Year-end	2.1	(LIR,28)
2016	2ND QUARTER: AVERAGES/TOTAL		7.38	9.42	50.01			276.3	
	OBSERVATIONS		6	6	6			16	

Gas Utility Decisions (continued)

Date	Company	State	ROR %	ROE %	Common Equity as % of Capital	Test Year	Rate Base	Amt. $ Mil.	Footnotes
7/7/16	Cascade Natural Gas Corporation	WA	7.35	—	—	—	—	4.0	(B)
7/19/16	CenterPoint Energy Resources Corp.	OK	—	—	—	12/15	—	0.0	(B,29)
8/4/16	Atmos Energy Corporation	KY	—	—	—	5/17	—	0.5	(B)
8/22/16	Questar Gas Company	UT	—	—	—	—	—	—	(30)
9/1/16	UGI Utilities, Inc.	PA	—	—	—	9/17	—	27.0	(B)
9/2/16	CenterPoint Energy Resources Corp.	AR	4.53	9.50	30.85	9/15	Year-end	14.2	(B,*)
9/23/16	New Jersey Natural Gas Company	NJ	6.90	9.75	52.50	6/16	Year-end	45.0	(B)
9/27/16	Texas Gas Service Company	TX	7.28	9.50	60.10	9/15	Year-end	8.8	
9/29/16	Minnesota Energy Resources Corp.	MN	6.88	9.11	50.32	12/16	Average	6.8	(I,E)
2016	3RD QUARTER: AVERAGES/TOTAL		6.59	9.47	48.44			106.3	
	OBSERVATIONS		5	4	4			8	
10/26/16	Northern States Power Company - WI	WI	—	—	—	12/17	—	4.8	(15)
10/27/16	Columbia Gas of Maryland, Inc.	MD	—	—	—	4/16	—	3.7	(B)
10/27/16	Columbia Gas of Pennsylvania, Inc.	PA	—	—	—	12/17	—	35.0	(B)
10/28/16	Public Service Co. of North Carolina	NC	7.53	9.70	52.00	12/15	Year-end	19.1	(B)
11/9/16	Madison Gas and Electric Company	WI	—	9.80	—	12/17	—	3.1	
11/14/16	Atmos Energy Corporation	KY	—	—	—	9/17	Year-end	5.0	(LIR,31)
11/15/16	Texas Gas Service Company	TX	—	—	—	12/15	—	6.8	(B)
11/18/16	Wisconsin Power and Light Company	WI	7.84	10.00	52.20	12/18	Average	9.4	(B,Z)
11/23/16	Baltimore Gas and Electric Company	MD	—	—	—	12/18	Average	6.1	(B,Z,LIR,32)
11/29/16	Kansas Gas Service Company	KS	—	—	—	—	—	15.5	(B)
12/1/16	Pacific Gas and Electric Company	CA	—	—	—	12/15	Average	100.0	(Tr,I, 33)
12/9/16	DTE Gas Company	MI	5.76	10.10	38.65	10/17	Average	122.3	(I,*)
12/14/16	Columbia Gas of Maryland, Inc.	MD	7.53	9.70	54.29	12/17	Average	1.2	(LIR,32)
12/15/16	KeySpan Gas East Corporation	NY	6.42	9.00	48.00	12/17	Average	112.0	(B,34)
12/15/16	Brooklyn Union Gas Company	NY	6.15	9.00	48.00	12/17	Average	272.1	(B,35)
12/15/16	Avista Corporation	WA	—	—	—	—	—	0.0	(17)
12/20/16	Columbia Gas of Virginia, Inc.	VA	—	—	—	12/17	Average	1.3	(LIR,36)
12/22/16	Columbia Gas of Kentucky, Inc.	KY	—	—	—	—	—	18.1	(B)
12/22/16	Sierra Pacific Power Company	NV	5.75	9.50	48.03	12/15	—	-2.4	(B)
2016	4TH QUARTER: AVERAGES/TOTAL		6.71	9.60	48.74			733.1	
	OBSERVATIONS		7	8	7			19	
2016	FULL YEAR: AVERAGES/TOTAL		6.95	9.50	49.56			1,235.9	
	OBSERVATIONS		24	24	23			54	

Source: Regulatory Research Associates, an offering of S&P Global Market Intelligence

FOOTNOTES

A-	Average
B-	Order followed stipulation or settlement by the parties. Decision particulars not necessarily precedent-setting or specifically adopted by the regulatory body.
CWIP-	Construction work in progress
D-	Applies to electric delivery only
DCt	Date certain rate base valuation
E-	Estimated
F-	Return on fair value rate base
Hy-	Hypothetical capital structure utilized
I-	Interim rates implemented prior to the issuance of final order, normally under bond and subject to refund.
LIR	Limited-issue rider proceeding
M-	"Make-whole" rate change based on return on equity or overall return authorized in previous case.
R-	Revised
Te-	Temporary rates implemented prior to the issuance of final order.
Tr-	Applies to transmission service
U-	Double leverage capital structure utilized.
W-	Case withdrawn
YE-	Year-end
Z-	Rate change implemented in multiple steps.
*	Capital structure includes cost-free items or tax credit balances at the overall rate of return.

(1) Rate increase approved in renewable resource cost recovery rider.

(2) Case represents the company's transmission, distribution, and storage system improvement charge, or TDSIC rate adjutment mechanism. The case was dismissed by the Commission, with no rate change authorized.

(3) Proceeding determines the revenue requirement for Rider B, which is the mechanism through which the company recovers costs associated with its plan to convert the Altavista, Hopewell, and Southampton Power Stations to burn biomass fuels.

(4) Represents rate decrease associated with the company's Rider R proceeding, which is the mechanism through which the company recovers the investment in the Bear Garden generating facility.

(5) This proceeding determines the revenue requirement for Rider S, which recognizes in rates the company's investment in the Virginia City Hybrid Energy Center.

(6) Decrease authorized through a surcharge, Rider W, which reflects in rates investment in the Warren County Power Station.

(7) Proceeding involves a new gas-fired generation facility, the Greensville County project, and creation of a new rider mechanism, Rider GV, to reflect the related revenue requirement in rates.

(8) Rate increase effective 5/1/16; additional increases to be effective 5/1/17 and 5/1/18.

(9) Settlement adopted with modifications. Rate increase effective retroactive to 1/1/16; additional increases to be effective 1/1/17 and 1/1/18.

(10) Represents the company's joint expanded net energy cost, or ENEC, proceeding.

(11) Represents rate decrease associated with the company's Rider BW proceeding, which is the mechanism through which the company recovers the investment in its Brunswick County Power Station.

(12) Represents the rate increase associated with the company's Rider US-2, which is the mechanism through which the company recovers the revenue requirement associated with three new solar generation facilities.

(13) Case involves the company's request to establish Rider U for recovery of investment and costs associated with a project to underground certain distribution lines.

(14) The present case involves South Carolina Electric & Gas' request for a cash return on incremental V.C. Summer Units 2 and 3 construction work in progress (CWIP) and incorporates the 10.5% return on equity that was authorized in September 2015 for use in the Summer CWIP-related proceedings beginning in 2016.

(15) The rate case is for the limited purpose of recovering anticipated increases in: generation and transmission fixed charges and fuel and purchased power expenses related to the interchange agreement with affiliate NSP-Minnesota; and, rate base investment.

FOOTNOTES (continued)

(16) Case is a consolidated expanded net energy cost proceeding for Monongahela Power and affiliate Potomac Edison.
(17) Rate increase rejected by commission.
(18) As a result of the commission's adoption of a settlement in another proceeding, the company withrew its rate increase request in this proceeding, and no rate change was implemented.
(19) No change in base rates was sought by the company, and on 12/23/16, the commission issued an order closing this docket.
(20) Case involves the company's G-RAC rider mechanism that addresses its investment in the Dresden Generating Plant, and establishes the revenue requirement for the rider to become effective 1/1/17.
(21) Case involves the company's gas system reliability surcharge, or GSRS, rider and reflects investments made from July 1, 2014 through Oct. 31, 2015.
(22) Case involves company's "compliance and system improvement adjustment" mechanism, and includes compliance-related investments made between Jan. 1 and June 30, 2015, and certain other investments made between July 1, 2014 and June 30, 2015.
(23) Case establishes the rates to be charged to customers under the company's transmission, distribution and storage system improvement charge rate adjustment mechanism, and reflects investments made between July 1, 2014 and June 30, 2015.
(24) Case involves the company's infrastructure system replacement surcharge rider and reflects incremental investments made from 6/1/15 through 1/31/16.
(25) Case involves the company's infrastructure system replacement surcharge rider and reflects incremental investments made from 9/1/15 through 2/29/16.
(26) Case establishes the rates to be charged to customers under the company's transmission, distribution and storage system improvement charge rate adjustment mechanism, and reflects investments made between 7/1/15 and 12/31/15.
(27) Settlement adopted with modifications. Rate decrease effective retroactive to 1/1/16; rate increases to be effective 1/1/17 and 1/1/18.
(28) Case involves company's "compliance and system improvement adjustment" mechanism, and includes compliance-related investments made between 7/1/15 and 12/31/15.
(29) Case involves the company's performance based ratemaking plan.
(30) On 8/22/16, the PSC approved the company's petition to withdraw the rate increase request, effectively closing the case. The request to withdraw the filing comported with provisions of a settlement filed in the Questar/Dominion Resources merger proceeding.
(31) Case is an annual update to the company's pipe replacement program rider.
(32) Case involves the company's strategic infrastrucure development and enhancement, or STRIDE, rider.
(33) Case involves the company's gas transmission and storage operations. The decision also authorized attrition rate increases of $246 million for 2016, $64 million for 2017 and $105 million for 2018.
(34) Adopted joint proposal provides for the company to implement a $112 million rate increase effective 1/1/17, a $19.6 million rate increase effective 1/1/18, and a $27 million rate increase effective 1/1/19.
(35) Adopted joint proposal provides for the company to implement a $272.1 million rate increase effective 1/1/17, a $41 million rate increase effective 1/1/18, and a $48.9 million rate increase effective 1/1/19.
(36) Case involves the company's investments under the Steps to Advance Virginia's Energy Plan.

Dennis Sperduto

NEWS

FOR IMMEDIATE RELEASE

WWW.NISOURCE.COM

August 2, 2017

FOR ADDITIONAL INFORMATION

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NiSource Reports Second Quarter Earnings, Increases 2017 Guidance

- 2017 non-GAAP net operating earnings guidance increased to a range of $1.17 to $1.20 per share
- Financial results reflect disciplined execution of core utility infrastructure investment strategy
- Successful refinancing will result in significant interest expense savings

MERRILLVILLE, Ind. - NiSource Inc. (NYSE: NI) today announced, on a GAAP basis, a loss from continuing operations for the three months ended June 30, 2017 of $44.3 million, or $0.14 per share, compared to income from continuing operations of $29.0 million, or $0.09 per share, for the same period of 2016. For the six months ended June 30, 2017, NiSource's income from continuing operations was $167.0 million, or $0.51 per share, compared to $215.6 million, or $0.67 per share, for the same period of 2016.

NiSource also reported net operating earnings (non-GAAP) of $33.3 million, or $0.10 per share, for the three months ended June 30, 2017, compared to $26.6 million, or $0.08 per share, for the same period of 2016. For the six months ended June 30, 2017, NiSource's net operating earnings (non-GAAP) were $263.9 million, or $0.81 per share, compared to $224.3 million, or $0.70 per share, for the same period of 2016.

Reflected in the GAAP results is a $111.5 million loss on early extinguishment of higher-coupon long-term debt. This $990.7 million refinancing will result in significant interest expense savings over the next several years. Schedule 1 of this press release contains a complete reconciliation of non-GAAP measures to GAAP measures.

"NiSource's team continued to execute on our long-term infrastructure investment strategy benefiting customers through enhanced safety, reliability and service," said NiSource President and CEO **Joe Hamrock**. "With this effective execution, combined with interest expense savings following the successful refinancing effort, we now expect to deliver 2017 non-GAAP net operating earnings in the range of $1.17 to $1.20 per share."

NiSource reminds investors that it does not provide a GAAP equivalent of its earnings guidance due to the impact of unpredictable factors such as fluctuations in weather, asset sales and impairments, and other items included in GAAP results.

Additional information for the quarter ended June 30, 2017 is available on the Investors section of www.nisource.com, including segment and financial information and our presentation to be discussed at our second quarter 2017 earnings conference call scheduled for Aug. 2, 2017 at 8:30 a.m. ET.

Second Quarter 2017 and Recent Business Highlights

NiSource continues to advance regulatory initiatives and customer programs in support of its ongoing infrastructure modernization, system safety and reliability enhancements, and customer growth investments.

Gas Distribution Operations

- **Columbia Gas of Ohio's** application for a five year extension of its **Infrastructure Replacement Program** remains pending before the Public Utilities Commission of Ohio (PUCO). This well-established pipeline replacement program, which is currently authorized through December 31, 2017, covers replacement of priority mainline pipe and targeted customer service lines. A PUCO order is expected by the end of the year.
- **Columbia Gas of Maryland's** base rate case remains pending before the Maryland Public Service Commission (MPSC). The request, filed April 14, 2017, seeks to adjust the company's base rates so it can continue to expedite the replacement of aging pipe as well as adopt additional pipeline safety upgrades. On July 28, 2017, all parties filed a settlement agreement with the MPSC which, if approved as filed, would result in an annual revenue increase of $2.4 million, effective in late October 2017.
- **Northern Indiana Public Service Company (NIPSCO)** continues to execute on its seven-year, $845 million **gas infrastructure modernization program** to further improve system reliability and safety. On June 28, 2017 the Indiana Utility Regulatory Commission (IURC) approved NIPSCO's latest semi-annual tracker update covering approximately $61 million of investments that were made in the second half of 2016.

Electric Operations

- NIPSCO's request, filed in November 2016, to invest in **environmental upgrades at its Michigan City Unit 12 and R.M. Schahfer Units 14 and 15 generating facilities** remains pending before the IURC. On June 9, 2017, NIPSCO, along with the Indiana Office of Utility Consumer Counselor, the Citizens Action Coalition and a group of NIPSCO industrial customers submitted a settlement agreement seeking, among other things, approval and cost recovery for the **Coal Combustion Residuals** projects and moving **Effluent Limitation Guidelines**-related investments to a later proceeding. An IURC order is expected before the end of the year.
- NIPSCO continues to execute on its **seven-year electric infrastructure modernization program**, which includes enhancements to its electric transmission and distribution system designed to further improve system safety and reliability. The IURC-approved program represents approximately $1.25 billion of electric infrastructure investments expected to be made through 2022. In February 2017, NIPSCO began recovering on approximately $46 million of these investments. On June 30, 2017, it filed with the IURC its latest tracker update request, covering $133.6 million in investments from May 2016 through April 2017.
- NIPSCO's **two major electric transmission projects** remain on schedule with anticipated in-service dates in the second half of 2018. The 100-mile 345-kV and 65-mile 765-kV projects are designed to enhance region-wide system flexibility and reliability. Substation, line and tower construction are under way for both projects.

Long-term Earnings and Dividend Growth, Capital Investment Forecasts on Track

Consistent with plans outlined at its Investor Day in March 2017, NiSource expects to grow its net operating earnings per share (non-GAAP) and dividend at 5 to 7 percent each year - based off the revised 2017 guidance - through 2020. The company also continues to expect to invest $1.6 to $1.8 billion annually ($1.6 to $1.7 billion in 2017) in its utility infrastructure programs through 2020. These program investments are part of NiSource's more than $30 billion of identified long-term investment opportunities.

With this robust investment and steady earnings and dividend growth projected, NiSource continues its commitment to maintaining investment grade credit ratings. Standard & Poor's rates NiSource at BBB+, Moody's at Baa2 and Fitch at BBB, all with stable outlooks. As of June 30, 2017, NiSource maintained $1.25 billion in net available liquidity, consisting of cash and available capacity under its credit facility.

About NiSource
NiSource Inc. (NYSE: NI) is one of the largest fully-regulated utility companies in the United States, serving approximately 3.5 million natural gas customers and 500,000 electric customers across seven states through its local Columbia Gas and NIPSCO brands. Based in Merrillville, Indiana, NiSource's approximately 8,000 employees are focused on safely delivering reliable and affordable energy to our customers and communities we serve. NiSource has been designated a World's Most Ethical Company by the Ethisphere Institute since 2012 and is a member of the Dow Jones Sustainability - North America Index. Additional information about NiSource, its investments in modern infrastructure and systems, its commitments and its local brands can be found at www.nisource.com. Follow us at www.facebook.com/nisource, www.linkedin.com/company/nisource or www.twitter.com/nisourceinc. NI-F

Forward-Looking Statements
This press release contains forward-looking statements within the meaning of federal securities laws. Investors and prospective investors should understand that many factors govern whether any forward-looking statement contained herein will be or can be realized. Any one of those factors could cause actual results to differ materially from those projected. Examples of forward-looking statements in this press release include statements and expectations regarding NiSource's business, performance, growth, commitments, investment opportunities, and planned, identified, infrastructure or utility investments. All forward-looking statements are based on assumptions that management believes to be reasonable; however, there can be no assurance that actual results will not differ materially. Factors that could cause actual results to differ materially from the projections, forecasts, estimates, plans, expectations and strategy discussed in this press release include, among other things, NiSource's debt obligations; any changes in NiSource's credit rating; NiSource's ability to execute its growth strategy; changes in general economic, capital and commodity market conditions; pension funding obligations; economic regulation and the impact of regulatory rate reviews; NiSource's ability to obtain expected financial or regulatory outcomes; any damage to NiSource's reputation; compliance with environmental laws and the costs of associated liabilities; fluctuations in demand from residential and commercial customers; economic conditions of certain industries; the success of NIPSCO's electric generation strategy; the price of energy commodities and related transportation costs; the reliability of customers and suppliers to fulfill their payment and contractual obligations; potential impairments of goodwill or definite-lived intangible assets; changes in taxation and accounting principles; potential incidents and other operating risks associated with our business; the impact of an aging infrastructure; the impact of climate change; potential cyber-attacks; construction risks and natural gas costs and supply risks; extreme weather conditions; the attraction and retention of a qualified work force; advances in technology; the ability of NiSource's subsidiaries to generate cash; tax liabilities associated with the separation of Columbia Pipeline Group, Inc. and other matters set forth in Item 1A, "Risk Factors" section of NiSource's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and in other filings with the Securities and Exchange Commission. NiSource expressly disclaims any duty to update, supplement or amend any of its forward-looking statements contained in this press release, whether as a result of new information, subsequent events or otherwise, except as required by applicable law.

Regulation G Disclosure Statement

This press release includes financial results and guidance for NiSource with respect to net operating earnings, which is a non-GAAP financial measure as defined by the SEC's Regulation G. The company includes this measure because management believes it permits investors to view the company's performance using the same tools that management uses and to better evaluate the company's ongoing business performance. With respect to such guidance, it should be noted that there will likely be a difference between this measure and its GAAP equivalent due to various factors, including, but not limited to, fluctuations in weather, the impact of asset sales and impairments, and other items included in GAAP results. The company is not able to estimate the impact of such factors on GAAP earnings and, as such, is not providing earnings guidance on a GAAP basis.

Schedule 1 - Reconciliation of Consolidated Net Operating Earnings (Non-GAAP) to Income (Loss) from Continuing Operations *(unaudited)*

	Three Months Ended June 30,				Six Months Ended June 30,			
(in millions, except per share amounts)		**2017**		2016		**2017**		2016
Net Operating Earnings (Non-GAAP)	**$**	**33.3**	$	26.6	**$**	**263.9**	$	224.3
Items Excluded from Operating Earnings:								
Net Revenues:								
Weather - compared to normal		**(4.9)**		4.6		**(33.9)**		(12.6)
Operating Expenses:								
Plant retirement costs[1]		**—**		—		**(1.5)**		—
IT service provider transition costs[2]		**(5.1)**		—		**(5.1)**		—
Transaction costs[3]		**—**		(0.9)		**—**		(1.7)
Gain on sale of assets and impairments, net		***0.1***		*0.2*		***0.1***		*0.3*
Total items excluded from operating earnings		**(9.9)**		3.9		**(40.4)**		(14.0)
Other Income (Deductions):								
Loss on early extinguishment of long-term debt		**(111.5)**		—		**(111.5)**		—
Income Taxes:								
Tax effect of above items		**43.8**		(1.5)		**55.0**		5.3
Total items excluded from net operating earnings		**(77.6)**		2.4		**(96.9)**		(8.7)
GAAP Income (Loss) from Continuing Operations	**$**	**(44.3)**	$	29.0	**$**	**167.0**	$	215.6
Basic Average Common Shares Outstanding		**325.1**		321.7		**324.4**		321.0
Non-GAAP Basic Net Operating Earnings Per Share	**$**	**0.10**	$	0.08	**$**	**0.81**	$	0.70
Items excluded from net operating earnings (after-tax)		**(0.24)**		0.01		**(0.30)**		(0.03)
GAAP Basic Earnings (Loss) Per Share From Continuing Operations	**$**	**(0.14)**	$	0.09	**$**	**0.51**	$	0.67

[1] Represents employee severance costs incurred associated with the planned retirement of Units 7 and 8 at Bailly Generating Station.
[2] Represents external legal and consulting costs associated with termination of the IBM IT services agreement and the transition to a new multi-vendor strategy for IT service delivery.
[3] Represents costs incurred associated with the separation of Columbia Pipeline Group ("CPG").

Historical Cost per Mile

	Cost/Priority Mile	% Increase	Total Capital[1]	Miles Replaced[2]	Total Miles Replaced
2008	$ 406,695.32	-	$ 37,009,274.38	91	91
2009	$ 312,343.20	-23.20%	$ 34,357,752.00	100	110
2010	$ 449,029.96	43.76%	$ 31,432,097.24	63	70
2011	$ 420,089.86	-6.45%	$ 107,543,003.00	216	256
2012	$ 593,856.22	41.36%	$ 154,996,474.00	184	261
2013	$ 596,401.20	0.43%	$ 167,588,738.42	197	281
2014	$ 656,059.61	10.00%	$ 165,983,082.54	176	253
2015	$ 684,724.40	4.37%	$ 182,821,415.63	196	267
2016	$ 778,023.61	13.63%	$ 214,734,515.36	200	276

9-Year Historical Average		10.49%
4-Year Historical Average		7.11%
Estimated 2017	*$ 833,315.13*	*6.47%*

Avg. BS/CI repl. 2013-2016	192
Avg. total mi. repl. 2013-2016	269
Avg. ratio BS/CI to other 2013-2016	71.40%
Avg. ratio other to BS/CI 2013-2016	28.60%

Projected Cost per Mile

4-Year Historical Average

2018	$ 892,536.04	7.11%
2019	$ 955,965.58	7.11%
2020	$ 1,023,902.85	7.11%
2021	$ 1,096,668.19	7.11%
2022	$ 1,174,604.72	7.11%
Average Cost per Mile	$ 1,028,735.48	
Total Cost for 1,055 Miles	$ 1,085,315,928.63	
Average Annual Spend	$ 217,063,185.73	
Average Annual Rate Increase	1.224	

9-Year Historical Average

2018	$ 920,717.12	10.49%
2019	$ 1,017,286.23	10.49%
2020	$ 1,123,983.97	10.49%
2021	$ 1,241,872.66	10.49%
2022	$ 1,372,126.07	10.49%
Average Cost per Mile	$ 1,135,197.21	
Total Cost for 1,055 Miles	$ 1,197,633,058.17	
Average Annual Spend	$ 239,526,611.63	
Average Annual Rate Increase	1.41	

	Feet		Conversion to Miles		
	Bare Steel	**Iron**	**Bare Steel**	**Iron**	**Total Miles**
2008	428,073	54,762	81	10	91
2009	516,262	12,289	98	2	100
2010	317,311	16,050	60	3	63
2011	1,080,163	62,667	205	12	216
2012	903,228	67,442	171	13	184
2013	959,081	81,023	182	15	197
2014	856,785	70,087	162	13	176
2015	995,341	38,510	189	7	196
2016	1,003,778	52,923	190	10	200

Feet per Mile 5,280

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year / Revenue Recovery Time Period	2018 / 2019/20	2019 / 2020/21	2020 / 2021/22	2021 / 2022/23	2022 / 2023/24	
1	**Return on Investment**						
2	Plant In-Service						
3	Additions	1,507,929,539	1,724,992,725	1,942,055,911	2,159,119,097	2,376,182,283	
4	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)	
5	Total Plant In-Service	1,334,826,752	1,525,998,645	1,717,170,537	1,908,342,430	2,099,514,323	
6	Less: Accumulated Provision for Depreciaiton						
7	Depreciation Expense	137,274,755	174,800,204	217,549,336	265,522,149	318,718,644	
8	Cost of Removal	(56,422,236)	(64,984,532)	(73,546,829)	(82,109,125)	(90,671,421)	
9	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)	
10	Total Accumulated Provision for Depreciation	(92,250,268)	(89,178,408)	(80,882,867)	(67,363,643)	(48,620,737)	
11	Net Deferred Depreciation	18,729,599	21,428,257	24,056,341	26,612,171	29,095,748	
12	Net Regulatory Asset - PISCC	54,532,066	62,310,016	69,848,284	77,169,219	84,759,582	
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,577,260	7,536,314	8,477,107	9,399,934	
14	Net Deferred Tax Balance - PISCC	(19,086,223)	(21,808,506)	(24,446,900)	(27,009,227)	(29,665,854)	
15	Net Operating Loss due to Bonus Depreciation	85,580,217	106,778,362	112,181,904	112,131,457	112,131,457	
16	Deferred Taxes on Liberalized Depreciation	(330,057,613)	(370,488,504)	(394,402,350)	(420,141,013)	(447,527,276)	
17	Net Rate Base	1,242,376,736	1,419,973,938	1,592,826,997	1,752,945,788	1,906,328,651	
18	Approved Pre-tax Rate of Return	10.95%	10.95%	10.95%	10.95%	10.95%	
19	Annualized Return on Rate Base	136,040,253	155,487,146	174,414,556	191,947,564	208,742,987	
20	**Operating Expenses**						
21	Annualized Depreciation	30,932,244	35,560,426	40,188,608	44,816,791	49,444,973	
22	Deferred Depreciation Amortization	465,205	537,458	609,712	681,965	754,219	
23	Deferred PISCC Amortization	1,351,462	1,559,954	1,767,615	1,975,059	2,193,474	
24	Annualized Property Tax Expense	29,808,407	34,003,436	38,065,761	42,018,168	45,834,905	
25	Deferred Property Tax Expense Amortization	211,040	250,163	289,557	329,208	369,134	
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000	
27	Operation & Maintenance Savings	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	
28	Total Revenue Requirement	197,708,611	226,298,585	254,235,810	280,668,756	306,239,693	1,265,151,453
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836	
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611	
31	Estimated Number of LGS Customers	297	297	297	297	297	
32	Estimated Annual Cost Per SGS Customer	101.17	115.25	128.87	141.64	153.90	
33	Estimated Annual Cost Per GS Customer	1,079.19	1,234.15	1,385.21	1,527.95	1,665.76	
34	Estimated Annual Cost Per LGS Customer	36,945.55	42,288.12	47,508.71	52,448.20	57,226.61	
35	Estimated Cost Per Month Per SGS Customer	8.43	9.60	10.74	11.80	12.83	
36	Estimated Cost Per Month Per GS Customer	89.93	102.85	115.43	127.33	138.81	
37	Estimated Cost Per Month Per LGS Customer	3,078.80	3,524.01	3,959.06	4,370.68	4,768.88	
38	Estimated Cost Per Month SGS-AMRD	0.29	0.27	0.26	0.23	0.20	
39	Estimated Cost Per Month GS-AMRD	3.23	3.01	2.70	2.45	2.18	
40	Estimated Cost Per Month LGS-AMRD	-	-	-	-	-	
41	Estimated Cost Per Month SGS-HCSL	2.79	2.92	3.05	3.18	3.29	
42	Estimated Cost Per Month GS-HCSL	3.19	3.35	3.52	3.66	3.81	
43	Estimated Cost Per Month LGS-HCSL	-	-	-	-	-	
44	Cost Per Month SGS-Total	11.51	12.79	14.05	15.21	16.32	
45	Cost Per Month GS-Total	96.35	109.20	121.65	133.44	144.80	
46	Cost Per Month LGS-Total	3,078.80	3,524.01	3,959.06	4,370.68	4,768.88	**Average Annual Increase**
47	Annual Rate Increase*	1.31	1.28	1.26	1.16	1.11	1.224

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates.

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year / Revenue Recovery Time Period	2018 / 2019/20	2019 / 2020/21	2020 / 2021/22	2021 / 2022/23	2022 / 2023/24	
1	**Return on Investment**						
2	Plant In-Service						
3	Additions	1,530,392,965	1,769,919,577	2,009,446,189	2,248,972,801	2,488,499,413	
4	Retirements	(180,892,212)	(214,572,930)	(248,253,648)	(281,934,366)	(315,615,084)	
5	Total Plant In-Service	1,349,500,753	1,555,346,647	1,761,192,541	1,967,038,435	2,172,884,329	
6	Less: Accumulated Provision for Depreciaiton						
7	Depreciation Expense	138,060,531	177,943,306	224,621,313	278,094,553	338,363,026	
8	Cost of Removal	(58,998,213)	(70,136,485)	(81,274,758)	(92,413,030)	(103,551,303)	
9	Retirements	(180,892,212)	(214,572,930)	(248,253,648)	(281,934,366)	(315,615,084)	
10	Total Accumulated Provision for Depreciation	(101,829,894)	(106,766,109)	(104,907,092)	(96,252,843)	(80,803,361)	
11	Net Deferred Depreciation	19,216,937	22,853,233	26,400,728	29,854,231	33,213,744	
12	Net Regulatory Asset - PISCC	55,785,207	66,271,116	76,455,047	86,356,260	96,607,959	
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,909,900	8,198,755	9,463,857	10,705,587	
14	Net Deferred Tax Balance - PISCC	(19,524,822)	(23,194,891)	(26,759,267)	(30,224,691)	(33,812,786)	
15	Net Operating Loss due to Bonus Depreciation	85,580,217	106,778,362	112,181,904	112,131,457	112,131,457	
16	Deferred Taxes on Liberalized Depreciation	(343,413,878)	(395,768,184)	(426,805,129)	(460,347,619)	(496,130,736)	
17	Net Rate Base	1,254,575,978	1,445,962,294	1,635,771,673	1,810,524,774	1,976,402,915	
18	Approved Pre-tax Rate of Return	10.95%	10.95%	10.95%	10.95%	10.95%	
			-	-	-	-	
19	Annualized Return on Rate Base	137,376,070	158,332,871	179,116,998	198,252,463	216,416,119	
20	**Operating Expenses**						
21	Annualized Depreciation	32,324,638	38,345,214	44,365,790	50,386,366	56,406,942	
22	Deferred Depreciation Amortization	476,414	570,405	664,396	758,387	852,378	
23	Deferred PISCC Amortization	1,380,285	1,651,501	1,921,637	2,191,492	2,475,616	
24	Annualized Property Tax Expense	31,343,668	37,043,268	42,577,008	47,967,983	53,188,169	
25	Deferred Property Tax Expense Amortization	211,040	261,934	313,179	364,760	416,697	
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000	
27	Operation & Maintenance Savings	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	
28	Total Revenue Requirement	202,012,114	235,105,193	267,859,008	298,821,460	328,655,921	1,332,453,686
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836	
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611	
31	Estimated Number of LGS Customers	297	297	297	297	297	
32	Estimated Annual Cost Per SGS Customer	103.38	119.73	135.77	150.80	165.17	
33	Estimated Annual Cost Per GS Customer	1,102.68	1,282.18	1,459.44	1,626.78	1,787.70	
34	Estimated Annual Cost Per LGS Customer	37,749.74	43,933.80	50,054.46	55,840.37	61,415.50	
35	Estimated Cost Per Month Per SGS Customer	8.61	9.98	11.31	12.57	13.76	
36	Estimated Cost Per Month Per GS Customer	91.89	106.85	121.62	135.56	148.97	
37	Estimated Cost Per Month Per LGS Customer	3,145.81	3,661.15	4,171.21	4,653.36	5,117.96	
38	Estimated Cost Per Month SGS-AMRD	0.30	0.28	0.26	0.23	0.20	
39	Estimated Cost Per Month GS-AMRD	3.23	3.01	2.70	2.45	2.18	
40	Estimated Cost Per Month LGS-AMRD	-	-	-	-	-	
41	Estimated Cost Per Month SGS-HCSL	2.79	2.92	3.05	3.18	3.29	
42	Estimated Cost Per Month GS-HCSL	3.19	3.35	3.52	3.66	3.81	
43	Estimated Cost Per Month LGS-HCSL	-	-	-	-	-	
44	Cost Per Month SGS-Total	11.69	13.18	14.62	15.98	17.25	
45	Cost Per Month GS-Total	98.31	113.21	127.84	141.68	154.96	
46	Cost Per Month LGS-Total	3,145.81	3,661.15	4,171.21	4,653.36	5,117.96	**Average Annual Increase**
47	Annual Rate Increase*	1.49	1.48	1.44	1.36	1.28	1.410

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates.

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year / Revenue Recovery Time Period	2018 / 2019/20	2019 / 2020/21	2020 / 2021/22	2021 / 2022/23	2022 / 2023/24	
1	**Return on Investment**						
2	Plant In-Service						
3	Additions	1,507,929,539	1,724,992,725	1,942,055,911	2,159,119,097	2,376,182,283	
4	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)	
5	Total Plant In-Service	1,334,826,752	1,525,998,645	1,717,170,537	1,908,342,430	2,099,514,323	
6	Less: Accumulated Provision for Depreciaiton						
7	Depreciation Expense	137,274,755	174,800,204	217,549,336	265,522,149	318,718,644	
8	Cost of Removal	(56,422,236)	(64,984,532)	(73,546,829)	(82,109,125)	(90,671,421)	
9	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)	
10	Total Accumulated Provision for Depreciation	(92,250,268)	(89,178,408)	(80,882,867)	(67,363,643)	(48,620,737)	
11	Net Deferred Depreciation	18,729,599	21,428,257	24,056,341	26,612,171	29,095,748	
12	Net Regulatory Asset - PISCC	54,532,066	62,310,016	69,848,284	77,169,219	84,759,582	
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,577,260	7,536,314	8,477,107	9,399,934	
14	Net Deferred Tax Balance - PISCC	(19,086,223)	(21,808,506)	(24,446,900)	(27,009,227)	(29,665,854)	
15	Net Operating Loss due to Bonus Depreciation	85,580,217	106,778,362	112,181,904	112,131,457	112,131,457	
16	Deferred Taxes on Liberalized Depreciation	(330,057,613)	(370,488,504)	(394,402,350)	(420,141,013)	(447,527,276)	
17	Net Rate Base	1,242,376,736	1,419,973,938	1,592,826,997	1,752,945,788	1,906,328,651	
18	Approved Pre-tax Rate of Return	10.95%	10.95%	10.95%	10.95%	10.95%	
19	Annualized Return on Rate Base	136,040,253	155,487,146	174,414,556	191,947,564	208,742,987	
20	**Operating Expenses**						
21	Annualized Depreciation	30,932,244	35,560,426	40,188,608	44,816,791	49,444,973	
22	Deferred Depreciation Amortization	465,205	537,458	609,712	681,965	754,219	
23	Deferred PISCC Amortization	1,351,462	1,559,954	1,767,615	1,975,059	2,193,474	
24	Annualized Property Tax Expense	29,808,407	34,003,436	38,065,761	42,018,168	45,834,905	
25	Deferred Property Tax Expense Amortization	211,040	250,163	289,557	329,208	369,134	
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000	
27	Operation & Maintenance Savings	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
28	Total Revenue Requirement	196,958,611	225,548,585	253,485,810	279,918,756	305,489,693	1,261,401,453
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836	
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611	
31	Estimated Number of LGS Customers	297	297	297	297	297	
32	Estimated Annual Cost Per SGS Customer	100.79	114.87	128.49	141.26	153.53	
33	Estimated Annual Cost Per GS Customer	1,075.10	1,230.06	1,381.13	1,523.87	1,661.68	
34	Estimated Annual Cost Per LGS Customer	36,805.40	42,147.97	47,368.56	52,308.05	57,086.46	
35	Estimated Cost Per Month Per SGS Customer	8.40	9.57	10.71	11.77	12.79	
36	Estimated Cost Per Month Per GS Customer	89.59	102.51	115.09	126.99	138.47	
37	Estimated Cost Per Month Per LGS Customer	3,067.12	3,512.33	3,947.38	4,359.00	4,757.20	
38	Estimated Cost Per Month SGS-AMRD	0.29	0.27	0.26	0.23	0.20	
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44	Cost Per Month SGS-Total	11.48	12.76	14.02	15.18	16.28	
45	Cost Per Month GS-Total	96.01	108.86	121.31	133.10	144.46	
46	Cost Per Month LGS-Total	3,067.12	3,512.33	3,947.38	4,359.00	4,757.20	**Average Annual Increase**
47	Annual Rate Increase*	1.28	1.28	1.26	1.16	1.10	**1.216**

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates.

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
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7	Depreciation Expense	137,274,755	174,800,204	217,549,336	265,522,149	318,718,644	
8	Cost of Removal	(56,422,236)	(64,984,532)	(73,546,829)	(82,109,125)	(90,671,421)	
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17	Net Rate Base	1,242,376,736	1,419,973,938	1,592,826,997	1,752,945,788	1,906,328,651	
18	Approved Pre-tax Rate of Return	10.17%	10.17%	10.17%	10.17%	10.17%	
19	Annualized Return on Rate Base	126,349,714	144,411,350	161,990,506	178,274,587	193,873,624	
20	**Operating Expenses**						
21	Annualized Depreciation	30,932,244	35,560,426	40,188,608	44,816,791	49,444,973	
22	Deferred Depreciation Amortization	465,205	537,458	609,712	681,965	754,219	
23	Deferred PISCC Amortization	1,351,462	1,559,954	1,767,615	1,975,059	2,193,474	
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25	Deferred Property Tax Expense Amortization	211,040	250,163	289,557	329,208	369,134	
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000	
27	Operation & Maintenance Savings	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	
28	Total Revenue Requirement	187,268,072	214,472,788	241,061,759	266,245,778	290,620,329	1,199,668,727
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836	
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611	
31	Estimated Number of LGS Customers	297	297	297	297	297	
32	Estimated Annual Cost Per SGS Customer	95.83	109.23	122.19	134.36	146.05	
33	Estimated Annual Cost Per GS Customer	1,022.20	1,169.66	1,313.43	1,449.43	1,580.80	
34	Estimated Annual Cost Per LGS Customer	34,994.54	40,078.25	45,046.89	49,753.00	54,307.84	
35	Estimated Cost Per Month Per SGS Customer	7.99	9.10	10.18	11.20	12.17	
36	Estimated Cost Per Month Per GS Customer	85.18	97.47	109.45	120.79	131.73	
37	Estimated Cost Per Month Per LGS Customer	2,916.21	3,339.85	3,753.91	4,146.08	4,525.65	
38	Estimated Cost Per Month SGS-AMRD	0.29	0.27	0.26	0.23	0.20	
39	Estimated Cost Per Month GS-AMRD	3.23	3.01	2.70	2.45	2.18	
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42	Estimated Cost Per Month GS-HCSL	3.19	3.35	3.52	3.66	3.81	
43	Estimated Cost Per Month LGS-HCSL	-	-	-	-	-	
44	Cost Per Month SGS-Total	11.07	12.29	13.49	14.61	15.66	
45	Cost Per Month GS-Total	91.60	103.83	115.67	126.90	137.72	
46	Cost Per Month LGS-Total	2,916.21	3,339.85	3,753.91	4,146.08	4,525.65	**Average Annual Increase**
47	Annual Rate Increase*	0.87	1.22	1.20	1.12	1.05	**1.092**

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates.

OCC EXHIBIT NO. 2

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

DIRECT TESTIMONY OF DANIEL E. O'NEILL

OPPOSING THE JOINT STIPULATION AND RECOMMENDATION

On Behalf of the
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215

September 28, 2017

TABLE OF CONTENTS

LIST OF ATTACHMENTS

I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A1. My name is Daniel E. O'Neill. I am the President of O'Neill Managing Consulting, LLC, a Georgia limited liability corporation founded by me in 2005 that specializes in providing utility industry management consulting services. The firm's address is 1820 Peachtree Road, Suite 709, Atlanta, GA 30309.

Q2. PLEASE DESCRIBE YOUR EDUCATION BACKGROUND AND PROFESSIONAL EXPERIENCE.

A2. I earned a Bachelor of Arts degree in Economics from the Louisiana State University in New Orleans, now called the University of New Orleans, in 1971. From 1971 to 1975 I studied for the Ph.D. in Economics at the Massachusetts Institute of Technology (MIT), leaving there with the dissertation underway. I completed the MIT Ph.D. in 1977 while I was teaching at the Georgia Institute of Technology in Atlanta. My dissertation was written under two professors: Franco Modigliani, who was later awarded the Novel prize, and Stanley Fischer, now co-chairman of the Federal Reserve.

Q3. PLEASE DESCRIBE YOUR WORK EXPERIENCE.

A3. After leaving Georgia Tech in 1979, I served as Manager of Marketing Research for Equifax, and then became their Director of Financial Analysis. In 1982, I joined a telecommunications utility, Contel, as Director of Financial Analysis, and was later promoted to Assistant Controller of Financial Analysis. In 1987, I joined Deloitte, Haskins & Sells, now part of the firm Deloitte & Touche, LLP, in their utilities consulting practice, where I continued to focus on utility financial performance, especially activity-based accounting, budgeting and reporting systems. Because Deloitte was the major auditor of electric and gas utilities in the United States, I focused on the electric and gas industries rather than the telecommunications industry.

In 1992, I joined Electronic Data Systems' newly acquired subsidiary, Energy Management Associates, to continue my utility consulting career, still focused on methods to improve financial performance, and with an increasing emphasis on the operational drivers of such performance, including work management, electric reliability and gas system integrity. I began to publish some of the results of my work, often co-authoring with clients, and now have authored over 50 relevant articles and conference papers.

In 1997, I joined Metzler & Associates, a management consultancy dedicated to utility industry issues, which has since become Navigant Consulting and now serves many industries. In 2005, I established my current firm, continuing to focus on utility asset management and reliability. At the same time I founded and began to chair a conference on Emergency Preparedness and Service Restoration for Utilities, which continues to serve the emergency management needs of the utility industry.

Q4. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OTHER REGULATORY AGENCIES?

A4. Yes, I have testified before the Philadelphia Gas Commission, the Massachusetts Department of Public Utilities (including eight electric cases and six gas cases), and the Indiana Utility Regulatory Commission (an electric case). In addition, I have performed independent studies (without testimony) for the Public Utilities Commission of Ohio ("PUCO") (FirstEnergy reliability audit) and the Pennsylvania Public Utilities Commission (FirstEnergy reliability audits), the Massachusetts DPU, and the Indiana Utility Regulatory Commission. I have also assisted numerous investor-owned utilities in preparing for and responding to regulatory investigations or audits.

II. PURPOSE OF TESTIMONY

Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A5. I am appearing on behalf of Office of the Ohio Consumers' Counsel ("OCC") in this case. The purpose of this testimony is to explain and support OCC's position opposing the Joint Stipulation and Recommendation ("Settlement") filed by

Columbia on August 18, 2017.[1] Other OCC witnesses will address additional issues explaining OCC's opposition to the Settlement and Columbia's Application[2] such as those identified in OCC's Objections to the Staff Report and Application filed on August 14, 2017.[3]

III. SUMMARY OF THE APPLICATION AND SETTLEMENT

Q6. PLEASE PROVIDE A SUMMARY OF THE APPLICATION IN THIS PROCEEDING.

A6. Columbia's Application in this proceeding requested an extension of its Infrastructure Replacement Program ("IRP"), and associated rider, for another five years (from 2018 through 2022), with almost no changes in the terms of the program from the modifications made in the 2012 Settlement in PUCO Case No. 11-5515-GA-ALT ("2012 Settlement").[4] The only substantive changes include a drastic increase in the Rider IRP monthly rate cap for Small General Service ("SGS") customers (including residential customers), from the current cap of

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[1] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Joint Stipulation and Recommendation (August 18, 2017) ("Settlement").

[2] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Application (February 27, 2017).

[3] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, OCC Objections to Staff Report and Application (August 14, 2017) ("OCC's Objections").

[4] *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 11-5515-GA-ALT, Joint Stipulation and Recommendation (September 26, 2012) ("2012 Settlement").

$1.00 per month each year to $1.30 per month each year. The Application did not change the minimum amount of O&M savings that Columbia is required to pass back to customers every year ($1.25 Million) that was ordered in the 2012 Settlement.

Q7. PLEASE PROVIDE A SUMMARY OF THE SETTLEMENT IN THIS PROCEEDING.

A7. The Settlement responds to the Staff Report's assertion that the guaranteed minimum O&M savings should be raised. The PUCO Staff ("Staff") had suggested a collaborative study to determine the reasons why the actual O&M savings were not higher than the guaranteed minimum of $1.25 million. The Settlement, however avoids the study, instead proposing a new, higher guaranteed minimum for O&M savings as follows: $2.00 million for the first two years, $2.25 million for the middle year (2020), and $2.50 million for the last two years.

Similarly, the Settlement responds to the Staff Report's recommendation that the annual increase in the monthly rate cap be frozen at $1.00 for three years (2018, 2018, 2020) and then increased to $1.10 for the last two years of the extension (2021 and 2022), by instead agreeing that the annual increase in the monthly cap should be increased from the current $1.00 per year to $1.15 for the first two years (2018 and 2019), $1.20 for 2020, and $1.25 for the last two years (2021 and 2022).

Notably the Settlement fails to respond to OCC's numerous objections to the Staff Report.

IV. EVALUATION OF THE SETTLEMENT

Q8. WHAT IS THE PUCO'S STANDARD OF REVIEW FOR SETTLEMENTS?

A8. I understand that the PUCO typically evaluates a proposed settlement using a three-prong test.[5] Specifically, the PUCO will apply the following three tests in deciding whether to adopt a proposed settlement:

1. Is the proposed settlement a product of serious bargaining among capable, knowledgeable parties?
2. Does the proposed settlement, as a package, benefit customers (ratepayers) and the public interest?
3. Does the proposed settlement package violate any important regulatory principle or practice?

Only when the PUCO determines that a proposed settlement, as a package, satisfies each of the three prongs identified above will the PUCO adopt the settlement or in many instances adopt it with significant modifications.

[5] See, for example, *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates,* PUCO Case No. 11-351-EL-AIR et al. Opinion and Order at 8-10 (December 14, 2011).

Q9. WHAT ARE YOUR PRIMARY CONCLUSIONS AND RECOMMENDATIONS?

A9. I conclude that the Settlement, as a package, does not satisfy the three-part test considered by the PUCO for approval and should be rejected.

I do not believe that the Settlement satisfies the first prong. However, the first prong of the three-part settlement test is discussed more in other OCC testimony.

Second, the Settlement, as a whole, benefits neither customers nor the public interest.

And, the Settlement, as a package, violates important regulatory principles and practices.

In general, the Settlement, among other problems, proposes an unjust and unreasonable increase of costs to customers with no demonstration of corresponding benefits (leak reduction) over the term of the extension. Regulatory practice requires that the burden of proof that investments are prudent and used and useful belongs to the utility requesting the rate increase—not the intervening parties.

Q10. WHAT ARE YOUR GENERAL OBJECTIONS TO THE SETTLEMENT FILED IN THIS CASE?

A10. It is important to make clear that I do not oppose, and in fact am in favor of, pipeline safety measures. I do, however, object to the Infrastructure Replacement Program ("IRP") as proposed in the Settlement.

Not enough guaranteed O&M savings for customers

First, as described in the Staff Report, the O&M savings that the program has generated so far are far too low. The guaranteed minimum O&M savings should be increased to reflect the pipe already replaced and planned to be replaced over the next five-year period. Also, the O&M savings should be higher based on the performance of other similar programs. While the Settlement does increase the guaranteed minimum O&M savings somewhat, I believe that the guaranteed minimum O&M savings should be much higher, rising to at least $3.0 million by 2022.

Too much non-priority pipeline replacement

Second, the additional "non-priority" pipe that the Utility has replaced under the IRP in addition to the originally targeted bare steel and cast iron adds another 40 percent to the required investment. In my opinion this additional amount is higher than what would be deemed reasonable for cost effectiveness. It is not just and reasonable for these extra costs to be passed on to consumers especially because there is no evidence that it is warranted.

Unnecessary increases in caps that customers pay

Third, I object to the portion of the Settlement that grants Columbia an increase in the cap on the monthly charge to customers under the IRP program. Instead, to benefit consumers and avoid additional unnecessary charges, the current $10.20 per month rate cap charged to customers should be allowed to increase by no more than the $1.00 in each year of the program, or less, as I detail below.

Lack of study on cost-effectiveness of program that customers pay

Finally, the Utility has no commitment to monitor or manage the cost per leak avoided. (The Utility only commits to a 25-year replacement of the targeted pipe.) This does not serve the public interest in terms of providing greater safety at a reasonable cost, nor does it accord with regulatory practice of ensuring efficiency and cost-effectiveness of investments that lead to recovery through rates. Therefore, in light of this and also in light of the unusually low savings generated from the program itself (apart from the guarantee), I believe, as Staff originally suggested in its report,[6] that there should be a collaborative study, or a

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[6] The Staff Report recommended a study focused solely on the reasons for the low O&M savings. I believe, as I detail below, the problem may be deeper, and that the scope of the study should be the cost effectiveness of the program, including why leaks have not declined further and therefore why O&M savings are not greater. See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Staff Report at 9 (July 10, 2017) ("Staff Report").

third-party audit, of the program to investigate the reasons for the program's lack of cost effectiveness. As an ongoing aid to that end, I also recommend that the Utility be required to report certain metrics that relate to program efficiency and effectiveness.

Q11. PLEASE ELABORATE ON YOUR OPINION WITH REGARD TO THE FIRST REASON: THAT THE SETTLEMENT IS NOT IN THE PUBLIC INTEREST DUE TO THE LOW LEVEL OF O&M SAVINGS.

A11. As noted in the Staff Report, the O&M savings generated by the IRP have been very low. In fact, the O&M savings have been lower than the guaranteed minimum O&M of $1.25 million each year that have been figured into the revenue requirement.[7] As the Staff Report explains, the previously agreed upon guaranteed minimum O&M savings should at least be adjusted to reflect five more years of pipe replacement, which under normal circumstances would have been expected to increase the O&M savings accordingly.

A major part of O&M expenses is the repair of leaks. The major source of leaks for Columbia, and for other gas distribution utilities with substantial amounts of bare steel and cast iron pipe, are the leaks on priority pipe. The leaks on Columbia's main lines have decreased from 2012 to 2016.[8] As priority pipe is replaced with other, newer pipe, the leaks can be expected to decline dramatically.

[7] Staff Report at 8-9.

[8] See OCC INTs 24, 26, and 28 (Attachments DEO-1, DEO-2, and DEO-3).

And as the amount of leaks decline, the amount of leak repair expense should also decline. Replacing another five years' worth of pipe should be expected to produce an additional five years' worth of savings on top of what the previous five years accomplished.

As stated in the Staff Report, Columbia has consistently argued that patience is needed as O&M savings should increase as its program matures.[9] Yet, as the Staff Report notes, the amount of O&M savings for 2013 to 2017 is still below the minimum amount of $1.25 million set back in 2012. The additional patience requested by Columbia is not warranted by recent experience.

In addition, as the Staff Report also details, other companies have achieved greater O&M savings with very similar programs. For example, Dominion East Ohio Gas's similar program has realized $3.2 million in O&M savings per year, compared to Columbia's guarantee of $1.25 million.[10] And, Duke Energy Ohio Inc.'s ("Duke") similar program, which is only 33 percent complete, has already achieved $1.7 million in annual O&M savings, and is likely to save more as the program reaches the same level of completion as Columbia's 60 percent completion (by 2022).

[9] See Staff Report at 9.

[10] See Staff Report at 8-9.

Yet, the Settlement only increases the guaranteed O&M savings to $2.0 million in 2018 and $2.5 million by 2022. I find this to be a one sided, inadequate compromise. It suggests that the Utility's guarantee for the second five-year period (2013-2017) should merely be doubled ($1.25 to $2.50 million), despite the evidence that the earlier guarantee was inadequate compared to the experience of comparable programs.

As explained above, I believe the guaranteed minimum O&M savings should be at least $3.0 million by 2022, if not more, based on what should have been the reduction due to reduced leaks and inspection expenses alone from the Accelerated Main Replacement Program ("AMRP") component of the IRP. Therefore, the Settlement is not in the public interest because it will unreasonably increase customer utility bills.

Q12. PLEASE ELABORATE ON YOUR OPINION WITH REGARD TO THE SECOND REASON: THAT THE ADDITIONAL NON-PRIORITY PIPE THAT THE UTILITY HAS REPLACED IN ADDITION TO THE ORIGINALLY TARGETED BARE STEEL AND CAST IRON HAS BEEN EXCESSIVE, AND, THEREFORE, NOT IN THE PUBLIC INTEREST.

A12. The originally targeted pipe for the AMRP was approximately 4,100 miles of mostly bare steel and cast or wrought iron.[11] Part of the 2012 Settlement allowed for recovery of some "non-priority" pipe through the AMRP rider. This was based on it being 'economic' to replace some interspersed segments of non-priority pipe that were part of the same replacement project.[12] There was also some acknowledgement of replacement of other leak-prone pipe, e.g., Aldyl-A plastic, provided it did not amount to more than five percent of the project miles.

The Utility, in projecting its needs for replacement miles in the next five years, appears to be using a factor of 1.4 total miles to priority miles, or an extra 40 percent,[13] that is, 40 percent of the pipe that Columbia is proposing to replace in the next five years is "non-priority" pipe that was added to the IRP in 2012.

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[11] The originally targeted 4,050 miles included 155 miles of coated but inadequately protected steel pipe. See Staff Report, n.5. It is clear, however, that it did not include other non-priority pipe. The 2012 Settlement (Case No. 11-5515-GA-ALT) that allowed for recovery through the AMRP rider of some non-priority pipe did not change the requirement that the original 4,050 (rounded to 4,100) miles be replaced in 25 years, or a rate of 164 miles per year, and that a proportionate amount, 1,640 miles, should be replaced by the end of 2017, the end of the first ten years of the program.

[12] See Case No. 11-5515-GA-ALT, Joint Stipulation and Recommendation (September 26, 2012).

[13] The average total miles replaced from 2013-2016 was 269 miles. The average priority miles replaced over the same period was 192. The ratio of 269 to 192 is 1.4. Also, see OCC RPD Set 6, RPD 20, Attachment A, page 2 (Attachment DEO-4), which shows that the expected miles of replacement for all pipe is 229, which, relative to the expected 164 miles of priority pipe is a ratio of 1.4, or 40 percent higher.

It would have been difficult to know in 2012 that the "non-priority" pipe would become such a large part of the IRP in the future. Now is the time for the PUCO to reevaluate the IRP and scale back the replacement of "non-priority" pipe in order to decrease the cost of the program to consumers. Scaling back the amount of "non-priority" pipe will not impact safety because the "non-priority" pipe is not part of the original priority pipe that the PUCO approved for replacement due to its safety risks. The "non-priority" pipe was added to the IRP in 2012 for economic reasons—not safety reasons. Based on my experience with other programs and what appeared to be the intent of the 2012 Settlement, the current amount of non-priority pipe being replaced seems excessive and not in the public interest because it will unreasonably increase customer utility bills. This may well be a factor in the next reason I give below.

Q13. PLEASE ELABORATE ON YOUR OPINION WITH REGARD TO THE THIRD REASON: THAT THE HIGH COST PER LEAK AVOIDED IMPLIES THAT THE SETTLEMENT IS NOT IN THE PUBLIC INTEREST AND VIOLATES REGULATORY PRINCIPLES AND PRACTICE.

A13. The most basic test of cost effectiveness for a priority pipe replacement program is the cost per avoided leak. When the public is asked to fund a program to improve its safety, it should be fully informed and aware of what it is giving its hard-earned money for. The cost per leak avoided should be in line with some sense of the benefit of avoiding another leak.

Yet the Columbia IRP seems to have no such requirement. In an OCC request for admission that requested Columbia to "Admit that Columbia has no analysis that projects the future level of leaks based on alternative levels of replacement of leak-prone mains and services," Columbia replied: "Admit. Columbia has a twenty-five year program to replace its Priority Pipe and it is this commitment that sets the appropriate level of pipe replacement."[14] From this admission it would appear that the Utility does not feel bound to show any specific improvement in leaks as a result of the program, i.e., the customer is 'buying a pig in a poke.' I believe this is a violation of accepted regulatory practice because a pipeline replacement program is generally only continued if it proves to be sufficiently efficient and effective. Columbia has not demonstrated that the IRP has been cost effective or will continue to be cost effective. Approving the IRP is also not in the public interest because it would unreasonably increase customer utility bills without first producing benefits for customers.

Q14. DO YOU PROPOSE A REMEDY FOR THIS SITUATION?

A14. Yes. I believe it is appropriate that the PUCO order that a collaborative study or third-party audit of the IRP program be undertaken by Staff or an independent auditor. The audit would investigate the IRP to date to determine whether the program is being implemented effectively and efficiently. Specifically, the audit would aid the PUCO in determining whether the IRP is efficiently and effectively

[14] OCC Set 3, RFA 6 (Attachment DEO-5).

reducing leaks, improving safety, and minimizing costs per mile and costs per leak avoided. Furthermore, I recommend that Columbia maintain a record of the performance of the IRP over the next five-year term. This record should, at a minimum, include:

a. Leak history associated with mains replaced (i.e., for each Job Order number under each Project ID for each year of the program from 2018 onward, the five-year history of leaks (by grade and year) on the mains that were replaced or retired under that job order);

b. Leak history after replacement (i.e., for each Job Order under each Project ID in each year of the program from 2018 on ward, the subsequent leaks [by grade and year] on the mains that were replaced or retired under that job order);

c. Cost effectiveness (i.e., for each Job Order under each Project ID in each year, the total cost of the job order, once complete, divided by the five-year average number of leaks on the mains that were replaced or retired under that job order); and

d. Variance explanations (i.e., provide an explanation of what factors might have led to the high cost or low leak rate for each Job Order under each Project ID in each year for which the cost per leak addressed [the ratio in the cost effectiveness report described above] is higher than a threshold dollar amount [e.g., $1,000,000 per average leak]).

Q15. HOW SHOULD THE PUCO DETERMINE THE COST-EFFECTIVENESS OF THE COLUMBIA AMRP SO FAR?

Q15. In determining the cost per avoided leak, the numerator is fairly straightforward: the capital cost of the pipe replacement, including all cost of all equipment (mains, services, valves, and meters) replaced or abandoned under the aegis of the program. The denominator can be estimated by a number of different ways: either by the recent history of the leaks on the pipe replaced, or perhaps with an additional increment for how those leaks might have been expected to grow over time or from the overall impact on annual leaks. For example, if replacing a mile of pipe were to cost $1 million dollars, and the pipe in question had historically leaked at an average annual rate of one per mile (a somewhat typical rate for vintage bare steel and cast iron pipe), then the cost per avoided annual leak would be $1,000,000. If the actual historical leak rate were lower, say .85 annual leaks per mile, but one assumed that they were growing at say, five percent per year, then over a five-year program the cost per avoided leak might be assumed to again be approximately $1,000,000.

Q16. WHAT HAS COLUMBIA EXPERIENCED IN ITS AMRP?

A16. Much worse results. Columbia's cost per mile has approached $1,000,000, depending on whether you count per mile of originally targeted priority pipe (as I would recommend) or you include the ancillary pipe, and has averaged over $850,000 per mile[15] in the six years after 2010 when the program ramped up to a level averaging 195 miles per year. Over the same period, the number of main leaks has bounced around an average of 3,650 leaks per year,[16] or only about 150 leaks less than the 3,796 leaks in 2010 or even the 3,852 leaks in 2007 before the program began. That translates to a cost per avoided leak of $6,630,000 per annual leak avoided.[17] In other words, over those six years, Columbia spent almost a billion dollars to reduce the annual number of leaks by 150 per year, or about four percent.

The benefits that customers have received under the IRP do not outweigh the costs. The customers' interest deserves a better accounting for the cost effectiveness of the IRP, and, in my experience, regulatory practice typically demands such accountability.

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[15] See OCC Set 6, RPD 20, page 2, but with cost per mile computed as cost per priority mile rather than per total miles replaced (Attachment DEO-4).

[16] See OCC Set 2, INT 2 Attachment A, row 2, columns F through K (2011-2016) (Attachment DEO-6).

[17] Six years x 195 miles per year x $850,000 per mile divided by 150 annual leaks.

Q17. PLEASE ELABORATE ON YOUR OPINION WITH REGARD TO THE FOURTH REASON: THAT THE SETTLEMENT'S ANNUAL INCREASES IN THE MONTHLY IRP RATE CAP THAT CUSTOMERS PAY ARE NOT WARRANTED AND THEREFORE NOT IN THE PUBLIC INTEREST.

A17. In the 2012 Settlement, the annual increases in the monthly rate cap for residential customers was limited to $1.00, which raised the cap from $5.20 in 2012 to 10.20 in 2017. Although the actual recovery so far has been below the caps,[18] Columbia projects them to be higher in the next five years and has asked for the caps to be raised more than the annual increase of $1.00 would allow. In the application, Columbia has proposed that the caps be raised by $1.30 per year, based on a rate of inflation of 6.47 percent per year, which it says has been the historical rate of increase in its cost per mile of priority pipe in the period 2013-2016.[19] The Staff Report objected to this request, and proposed a freeze for three years, and a ten percent increase in the last two years ($1.10 per year).[20] The Settlement, in turn, proposes annual increases of the monthly rate cap for 2018-2022 period equal to $1.15, $1.15, $1.20, $1.25, and $1.25, respectively. I believe this is completely unwarranted and that the existing annual increase of $1.00 per year in the monthly rate cap is more than adequate and should be maintained or decreased.

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[18] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Direct Testimony of Melissa Thompson at 4 (February 27, 2012).

[19] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* Case No. 16-2422-GA-ALT, Direct Testimony of Diana Beil, Attachment DMB-1 (February 27, 2017).

[20] See Staff Report at 9-12.

Q18. WHAT EVIDENCE DO YOU HAVE THAT THE EXISTING ANNUAL INCREASE IN THE MONTHLY RATE CAP THAT CUSTOMERS PAY IS MORE THAN ADEQUATE, AND THEREFORE THAT RAISING THE CAP AT THIS TIME IS NOT IN THE PUBLIC INTEREST?

A18. I have studied the potential impact of various aspects of the provisions in the Settlement, including those that leave unchanged certain parameters in the Application. I also studied the Staff work papers that were used to develop the Staff Report, in particular the worksheet on the Estimated Rate Impact of Proposed IRP 2018-2022 under the low end cost per mile.[21] Columbia states that it does not have a similar excel-type work paper showing the revenue requirements for the Settlement.[22] Some of the key drivers are the number of miles replaced, the rate of inflation in cost per mile, the O&M savings, the allowed rate of return, and the treatment of the investment in Hazardous Customer Service Lines. I find that under a reasonable set of values for these assumptions, the revenue requirement as it would translate to the monthly rate for the SGS customer need only increase by an amount that would be less than the $1.00 per year specified in the 2012 Settlement.

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[21] See Staff Work Paper (Attachment DEO-7).

[22] See Columbia supplemental response to OCC Set 6, RPD 20 (Attachment DEO-8).

Q19. WHAT ARE SOME OF THE VARIATIONS IN THOSE ASSUMPTIONS THAT WOULD PRODUCE SUCH A RESULT?

A19. First, the number of total miles replaced could vary. In Columbia's response to OCC RPD No. 20, Columbia assumed that the total miles to be replaced each year would be 229 miles.[23] This was based on an assumption that there would be 164 priority miles per year replaced, and that the non-priority miles would include an additional 40 percent. I argued above that the amount of non-priority pipe should not add up to 40 percent of the priority pipe. A lower figure, such as 200 miles, would yield a much smaller capital cost and therefore lower revenue requirement and rate impact on consumers. But even if we use a figure of 229 miles, other changes in the assumptions could still lead to an increase of less than $1.00 per year for the IRP rate cap.

Q20. WHAT WOULD BE SOME OF THOSE OTHER CHANGES IN ASSUMPTIONS?

A20. As I have mentioned above, I believe the O&M savings should reach at least $3 million per year. Every dollar of extra O&M savings reduces the revenue requirement dollar for dollar. And every million dollars of lower revenue requirement reduces the SGS customer bill by about $.06 per month.[24]

[23] See OCC Set 6, RPD 20, Attach. A, page 2 (Attachment DEO-4).

[24] In the rate impact calculation, the revenue requirement is divided by the number of SGS customers (approximately 1.4 million customers), and then divided by the number of months in the year, 12. Hence every $1 million reduction in the revenue requirement results in a reduction of rate impact of $1 million / 1.4 million / 12, or $.06 per month.

Additionally, in the testimony of OCC witness Dr. Daniel J. Duann, OCC has argued for a lower pre-tax rate of return on investment, which would also lower the revenue requirement, depending on how much lower and assuming it applies to the entire IRP investment and not just post-2017 additions.

One of the largest factors to consider is the rate of inflation in cost per mile. Columbia proposed in its Application, and the Staff Report accepts, a 6.47 percent increase per year, based upon the annual increase in the cost per mile from 2013-2016. The Settlement appears to use a 7.2 percent rate of inflation.[25] I believe that costs should not, and likely will not, increase by one third as much. Given that the annual additions for the AMRP are in the $200 million range, depending on assumptions about mileage and cost per mile, every percentage point decrease in inflation yields approximately $6 million less investment per year (on average, over five years).[26] At an ROI of approximately 10 percent, that yields $0.6 million less revenue requirement (although the exact figure is complicated by depreciation and taxes as well), and therefore $0.036 less impact on the monthly SGS rate (.6 x .06). So, as I explain below, if a two percent rate of inflation is substituted for the 6.47 percent used in the Application and the Staff Report work papers (or even more so for the 7.2 percent used in the Settlement), it could lower

[25] See OCC Set 6, RPD 20, Attach. A, page 2 (Attachment DEO-4).

[26] Each year, the inflation of the previous year is carried forward in the new cost per mile, so that in five years one could expect to see a 1 percent increase per year cause increases in the cost of each subsequent year in the amount of 1, 2, 3, 4, and 5 percent (before compounding, which adds a little), or an average of about 3 percent, which times $200 million is $6 million.

the SGS rate by approximately $0.16 on average (4.47 x .036), a figure that could vary with other assumptions.

In short, the combination of fewer non-priority miles replaced, extra O&M savings, lower ROI, and lower inflation is likely to completely offset the need for the increase of up to an additional $0.25 per year in the monthly SGS rate cap proposed in the Settlement.

Q21. WHAT EVIDENCE DO YOU HAVE THAT THE RATE OF INFLATION IN THE COST PER MILE WOULD BE CLOSER TO 2.0 PERCENT THAN THE 6.47 PERCENT IMPLIED IN THE APPLICATION OR THE 7.2 PERCENT IN THE SETTLEMENT?

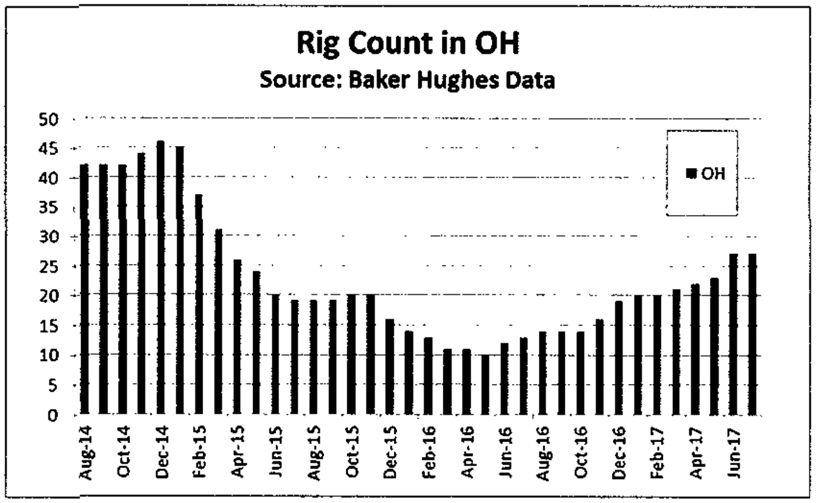
A21. There are multiple sources of evidence that point to that conclusion. I will cite three: the decline in the demand for pipe construction resources since 2015, the trend in the Handy-Whitman Gas Construction Cost index for the North Central Region, and the Federal Reserve's target for inflation for the next five years.

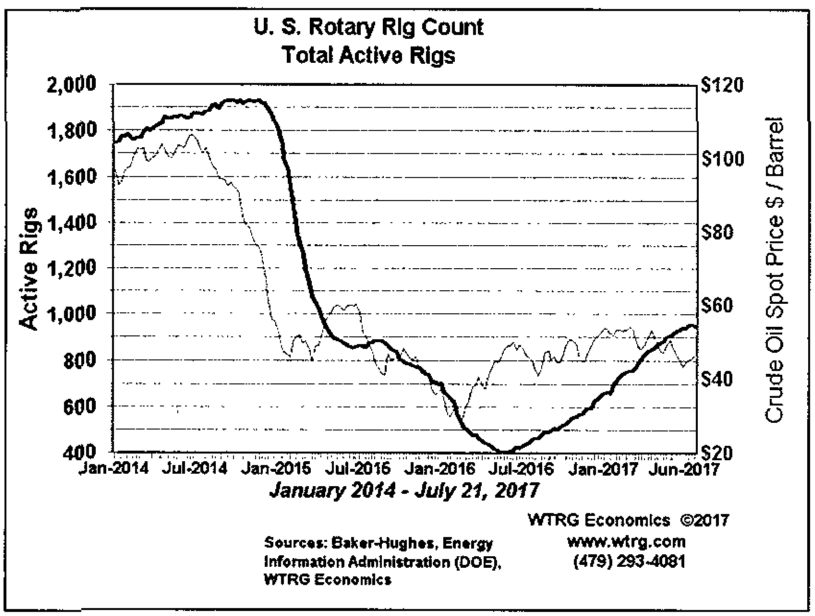
Q22. WHAT IS THE EVIDENCE FROM YOUR FIRST SOURCE REGARDING THE DEMAND FOR PIPE CONSTRUCTION RESOURCES?

A22. The pace of oil and gas exploration in the Midwest (and elsewhere) has definitely declined, as reported in the August 19, 2015 Wall Street Journal[27] and demonstrated in the graphs below[28] showing the dramatic reduction in rig count in the U.S. in the last 18 months, and how this also resulted in a 78 percent reduction in the rig count in Ohio from the peak in December of 2014 through May of 2016. While the rig count in Ohio has recovered some since that trough, it is still over 40 percent below its earlier peak. The chart for the total US also shows the price of oil (the gray line on the chart), and how the rig count (the red line) directly reacts, with a lag of a few months, to the price of oil, and that even a rise of the price of oil to $60 per barrel from $40 per barrel was not a significant stimulus to return the rig count to its prior peak levels. It would appear that it would take the return of near-$100 per barrel oil pricing (which is not a reasonable forecast at this time) to return the rig count to 2012-2014 levels.

[27] Wall Street Journal, "Energy Slowdown Hits One Town Hard," August 19, 2015 about Waynesburg, PA, which cites a general slowdown through the area, viz., "The economic pain from lower oil and gas prices is spreading to small towns and businesses across Pennsylvania and parts of Ohio and West Virginia that had been riding a wave of prosperity from the natural-gas shale boom" http://www.wsj.com/articles/energy-slowdown-hits-one-town-hard-1440008970. (Attachment DEO-9.)

[28] Data are from the Baker Hughes reports http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother and http://www.energyeconomist.com/a6257783p/exploration/rotaryrigweekly.html. (Attachment DEO-10.)

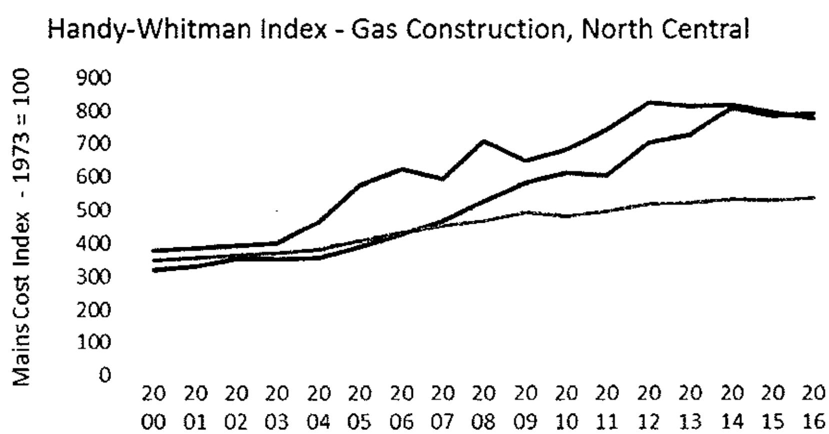




Also, a properly managed program should reap the benefits of such a less-contested labor market. It could even happen that Columbia could replace at a lower cost per mile than it has recently experienced, and so well within the existing cap of $10.20 per month. If that were to happen, it would certainly be a better use of the customers' money to fund the increase in the jobs and economic activity at more economic rates, as opposed to padding the pockets of those who might be profiteering from a temporary shortage of resources.

Q23. WHAT IS THE EVIDENCE FROM YOUR SECOND SOURCE REGARDING THE CONSTRUCTION COST INDEX?

A23. The OCC has obtained data on the recent trend in the cost of gas pipe construction. The source of the data is the well-known and highly regarded Handy-Whitman index, specifically the one for Gas Distribution construction in the North Central Region, which includes Ohio and neighboring states. The chart[29] below shows the values for three different material types:



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cast Iron	321	331	352	354	356	391	426	467	527	583	613	607	706	728	813	786	794
Steel	379	388	395	401	466	578	626	597	710	650	684	743	826	815	820	797	776
Plastic	348	358	366	371	383	409	430	453	470	495	482	497	521	524	537	532	538

[29] Handy-Whitman Index of Public Utility Construction Costs - Bulletin No. 185 (1912 to January 1, 2017), pages G-3-8 and G-3-9, Gas Distribution, lines 43-45. (Attachment DEO-11.)

Clearly, there was a strong upward trend, especially in steel and cast iron, through 2012. Yet, after 2012 the trend is <u>downward</u> for steel and likewise for cast iron after 2014. I believe this is due in part to the earlier evidence that in 2015 the demand for pipe construction due to oil and gas exploration and production dropped precipitously. Moreover, I see no developments in the near future that are likely to reverse this trend.

Q24. HOW IS THIS EVIDENCE CONSISTENT WITH THE EXPERIENCE OF COLUMBIA IN THE 2013-2016 PERIOD?

A24. It supports Columbia's finding that the 2013-2016 period showed less inflation than the 2008-2012 period, and that the year 2015 saw a significant decline in the rate of inflation in gas construction costs. But it would appear that Columbia did not manage costs to be in line with utility gas construction over the period 2008-2016, and it certainly does not support Columbia's contention that Columbia's 2013-2016 rate of inflation should be extended into the next five years. Rather, we would expect that if Columbia can manage costs comparably to the rest of the industry in the region, it can expect to see a definite flattening of the rate of inflation in IRP construction costs.

Q25. WHAT IS THE EVIDENCE FROM YOUR THIRD SOURCE REGARDING THE FEDERAL RESERVE BOARD'S TARGET RATE OF INFLATION?

A25. The Federal Open Market Committee of the Federal Reserve Board ("Board"), the governing body of the Federal Reserve Bank, meets monthly and publishes the results of its meetings with a two-month delay. The minutes of the December, 2016 meeting were particularly watched for their implications for the coming year and beyond. In that meeting the Board re-iterated its oft-stated goal of achieving and maintaining an overall rate of inflation of two percent. The relevant text from the December 2016 meeting was:

> The Committee expects that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, labor market conditions will strengthen somewhat further, and inflation will rise to two percent over the medium term.[30]

The press release noted that the current rate of inflation was somewhat less than two percent, but the Board expected a slight rise over the course of 2017 to the two percent level, from which the Board hoped to mitigate any further rise, presumably by raising gradually the target interest rates, an intention they have stated on numerous occasions, and which is discussed in that press release. Moreover, other sources indicate that the Board is coordinating its monetary policy with those of other major countries so as to achieve its desired result. In light of this knowledge, it seems reasonable to conclude that a forecast of two percent inflation is more reasonable as a forecast than a mechanical projection of

[30] Minutes of the Federal Open Market Committee, page 11, December 13-14, 2016 https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20161214.pdf.

Columbia's recent trend. Moreover, it would be advisable for Columbia to use information such as this in its negotiations with vendors whose contracts are due to expire on December 31, 2020.

Q26. DO YOU RECOMMEND THAT THE PUCO ADOPT THE SETTLEMENT FILED IN THIS CASE ON AUGUST 18, 2017?

A26. I do not believe that the PUCO should approve the Settlement because, as a package, it does not meet the PUCO's specific criteria to approve a Settlement. The Settlement it is not in the public interest in multiple ways as follows: insufficient guaranteed O&M savings, too many non-priority miles, and an unwarranted increase in the rate caps for SGS customers. Finally, it violates accepted regulatory practice in that it does not require the Utility to make a significant commitment to cost-effective reduction of leaks to achieve program benefits.

V. CONCLUSION

Q27. DOES THIS CONCLUDE YOUR TESTIMONY?

A27. Yes, however, I reserve the right to incorporate new information that may subsequently become available. I also reserve the right to supplement my testimony in the event that the Utility, Staff, or other parties submit new or corrected information related to this proceeding.

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Direct Testimony of Daniel E. O'Neill on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below this 28th day September 2017.

/s/ Kevin Moore
Kevin Moore
Assistant Consumers' Counsel

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PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 2 No. 24
Respondent: Donald P. Ayers
As to Objections: Eric B. Gallon

COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED JUNE 2, 2017

INT-24.

Referring to the classification for leaks indicators as outlined in Ohio Adm. Code 4901:1-16-04(H)(1), how many leaks on main lines were classified as grade-one classification in the last five years?

RESPONSE:

Columbia objects to this Interrogatory because it is ambiguous and overbroad. OCC's Interrogatory is not limited to the areas in which Columbia provides service. Columbia's response provides information regarding leaks on main lines through which Columbia provides service.

Subject to, and without waiving these objections, the number of main line leaks classified as grade 1 within the last five years are included in the table below.

# of Grade 1 Leaks	2012	2013	2014	2015	2016
Main Lines	1,107	1,000	1,223	1,048	780

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 2 No. 26
Respondent: Donald P. Ayers
As to Objections: Eric B. Gallon

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED JUNE 2, 2017**

INT-26.

Referring to the classification for leaks indicators as outlined in Ohio Adm. Code 4901:1-16-04(H)(1), how many leaks on main lines were classified as grade-two classification in the last five years?

RESPONSE:

Columbia objects to this Interrogatory because it is vague and ambiguous. Ohio Adm.Code 4901:1-16-04(H)(1) does not describe the grade-two classification; it describes the grade-one classification. Columbia's response provides information regarding leaks classified as grade-two.

Columbia further objects to this Interrogatory because it is overbroad. OCC's Interrogatory is not limited to the areas in which Columbia provides service. Columbia's response provides information regarding leaks on main lines through which Columbia provides service.

Subject to, and without waiving these objections, the numbers of main line leaks classified as grade 2 within the last five years are included in the table below.

# of Grade 2 Leaks	2012	2013	2014	2015	2016
Main Lines	3,175	3,066	3,527	3,226	2,772

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 2 No. 28
Respondent: Donald P. Ayers
As to Objections: Eric B. Gallon

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED JUNE 2, 2017**

INT-28.

Referring to the classification for leaks indicators as outlined in Ohio Adm. Code 4901:1-16-04(H)(1), how many leaks on main lines were classified as grade-three classification in the last five years?

RESPONSE:

Columbia objects to this Interrogatory because it is vague and ambiguous. Ohio Adm.Code 4901:1-16-04(H)(1) does not describe the grade-three classification; it describes the grade-one classification. Columbia's response provides information regarding leaks classified as grade-three.

Columbia further objects to this Interrogatory because it is overbroad. OCC's Interrogatory is not limited to the areas in which Columbia provides service. Columbia's response provides information regarding leaks on main lines through which Columbia provides service.

Subject to, and without waiving these objections, the number of main line leaks classified as grade 3 within the last five years are included in the table below.

# of Grade 3 Leaks	2012	2013	2014	2015	2016
Main Lines	589	491	642	393	307

PUCO Case No. 16-2422-GA-ALT
OCC Requests for Production of Documents Set 6 No. 20
Respondent: Diana M. Beil
As to Objections: Eric B. Gallon

COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO CONSUMERS' COUNSEL'S REQUESTS FOR PRODUCTION OF DOCUMENTS
DATED SEPTEMBER 11, 2017

RPD-20.

Please provide all analyses, studies and reports (including workpapers, data, documentation and other information relied upon to conduct the analyses, studies and reports) that support the Stipulation that have not been filed with the PUCO.

RESPONSE:

Columbia objects to this Request for Production because the phrase "that support the Stipulation" is vague and ambiguous. Columbia further objects to this Request for Production because, to the extent it would require Columbia to search its files for every document and piece of information that would tend to support the extension of Columbia's Infrastructure Replacement Program and Rider IRP, per the terms of the Application (as modified by the Stipulation), it is overbroad and unduly burdensome.

Subject to and without waiving these objections, Columbia responds: Please see OCC RPD Set 6, No. 20 Attachment A.

FOR SETTLEMENT DISCUSSION ONLY

Columbia Gas of Ohio
Infrastructure Replacement Program
Rider Rate Analysis

Capital Investment Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	Projected 2017
Max Rider IRP Rate Allowed	$ 1.10	$ 2.20	$ 3.20	$ 4.20	$ 5.20	$ 6.20	$ 7.20	$ 8.20	$ 9.20	$ 10.20
Actual Rider IRP Rate	$ 0.86	$ 1.62	$ 2.63	$ 3.57	$ 4.71	$ 5.71	$ 6.71	$ 7.65	$ 8.96	*$ 10.20*
Annual Rate Increase		$ 0.76	$ 1.01	$ 0.94	$ 1.14	$ 1.00	$ 1.00	$ 0.94	$ 1.31	$ 1.24

	Cost/Mile	% Increase	Total Capital	Total Miles Replaced	Miles Replaced for Bare Steel and Cast/Wrought Iron	
2008	406,695.32	-	37,009,274.38	91	91	
2009	312,343.20	-23.20%	34,357,752.00	110	100	
2010	449,029.96	43.76%	31,432,097.24	70	63	
2011	421,737.27	-6.08%	107,543,003.00	255	216	
2012	593,856.22	40.81%	154,996,474.00	261	184	
2013	598,531.21	0.79%	167,588,738.42	280	197	29.64%
2014	658,663.03	10.05%	165,983,082.54	252	176	30.16%
2015	687,298.56	4.35%	182,821,415.63	266	196	26.32%
2016	780,852.78	13.61%	214,734,515.36	275	200	27.27%
9-Year Historical Average		10.51%				*28.35% Average*
4-Year Historical Average		7.20%				*164 Priority Pipe Miles*
2017	*837,060.89*	*7.20%*				*229 Total (annual)*
						1,144 Total (5-years)

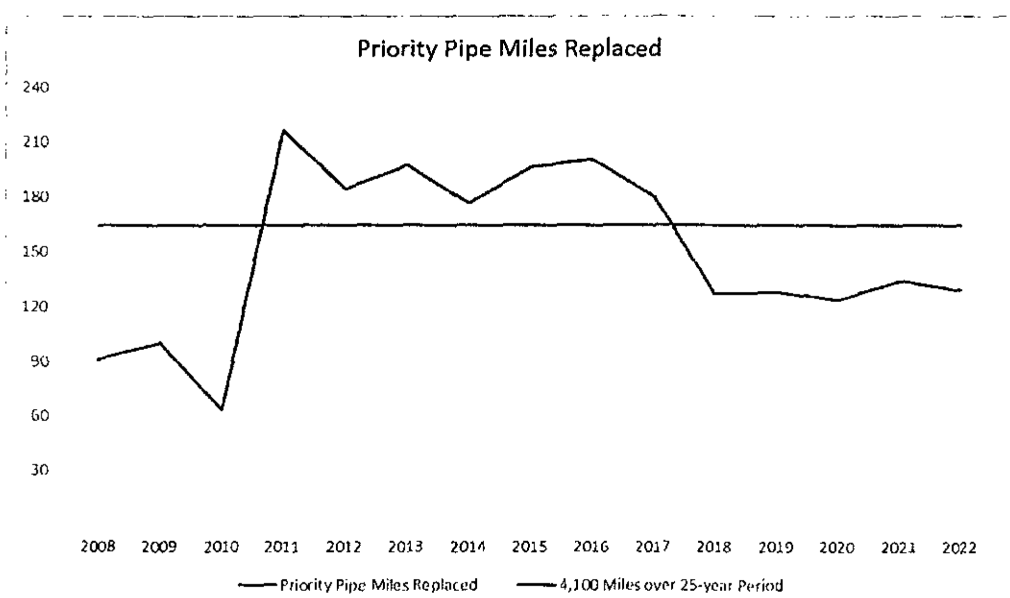
4-Year Historical Average

[redacted]

1,036,136.28		
1,185,767,499.35	$ 237,153,499.87	
1.34		

229 = 164 / (1-.2835)

Historically, priority pipe replaced has represented approximately 72% of total pipe replaced. Using this same ratio going forward, in order for Columbia to replace 164 miles of priority pipe annually, Columbia would need to replace 229 total miles annually.



Using the estimated annual cost per mile from the table above and the Staff proposed maximum SGS customer IRP Rider rate per month, Columbia projects the annual miles replaced would be significantly below the average run rate of 164 miles of priority pipe. The excess miles replaced between 2011 and 2016 have allowed Columbia to catch up from the early years (2008-2010) of the program, where Columbia was replacing significantly less than 164 miles per year. With the Staff proposed rates, Columbia estimates it would be approximately 215 miles behind pace through 2022.

PUCO Case No. 16-2422-GA-ALT
OCC Request for Admissions Set 3 No. 6

COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO CONSUMERS' COUNSEL'S REQUEST FOR ADMISSIONS
DATED JUNE 23, 2017

RFA-6.

Admit that Columbia has no analysis that projects the future level of leaks based on alternative levels of replacement of leak-prone mains and services."

RESPONSE:

Admit. Columbia has a twenty-five year program to replace its Priority Pipe and it is this commitment that sets the appropriate level of pipe replacement.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 2 No. 2
Respondent: Donald P. Ayers

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED JUNE 2, 2017**

INT-2.

Please provide the following system wide performance and replacement rates for the ten-year period of 2007-2016. Please also indicate the source(s) of this information and any discrepancies between sources and/or data that is excluded.

System Performance- All Pipe										
Mains - System Performance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of leaks repaired										
Miles in service										
Mains Leak rate per mile										

System Performance - All Pipe										
Services - System Performance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of leaks repaired										
Miles in service										
Services Leak rate per mile										

RESPONSE:

Please find requested data included in attachment "OCC INT Set 2, No. 2 Attachment A.xlsx." Data included in the file was pulled from Columbia's Work Management System (WMS).

Mains	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of Leaks Cleared[1]	3,852	4,053	4,462	3,796	3,817	3,653	3,470	3,465	3,733	3,762
Miles in Service	19,706	19,690	19,733	19,763	20,002	19,779	19,829	19,880	19,900	19,999
Mains Leak Cleared per Mile[1]	0.20	0.21	0.23	0.19	0.19	0.18	0.17	0.17	0.19	0.19

Services	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of Leaks Cleared[1][2]	4,308	5,080	12,649	16,340	14,507	13,558	12,183	11,065	11,875	11,415
Miles in Service[3]	5,094	21,262	21,475	21,628	21,855	21,829	21,810	21,783	21,814	21,684
Services Leak Cleared per Mile[1]	0.85	0.24	0.59	0.76	0.66	0.62	0.56	0.51	0.54	0.53

[1]Columbia revised the headings included in the OCC Interrogatories to reference leaks "cleared" versus leaks "repaired." This change was made to properly identify all leaks addressed by Columbia, both those repaired and replaced. Columbia also calculated "Leak Cleared per Mile" vs "Leak Rate per Mile" to accurately reflect the data presented in the table.

[2]Excludes leaks cleared on meter settings that did not require a Distribution Property Investigation (DPI).

[3]Miles in service for service lines were estimated based on the number of services and the average service length reported in Columbia's Gas Distribution System Annual Report filed with the U.S. Department of Transportation (DOT Report).

Historical Cost per Mile

	Cost/Priority Mile	% Increase	Total Capital[1]	Miles Replaced[2]	Total Miles Replaced
2008	$ 406,695.32	-	$ 37,009,274.38	91	91
2009	$ 312,343.20	-23.20%	$ 34,357,752.00	100	110
2010	$ 449,029.96	43.76%	$ 31,432,097.24	63	70
2011	$ 420,089.86	-6.45%	$ 107,543,003.00	216	256
2012	$ 593,856.22	41.36%	$ 154,996,474.00	184	261
2013	$ 596,401.20	0.43%	$ 167,588,738.42	197	281
2014	$ 656,059.61	10.00%	$ 165,983,082.54	176	253
2015	$ 684,724.40	4.37%	$ 182,821,415.63	196	267
2016	$ 778,023.61	13.63%	$ 214,734,515.36	200	276

9-Year Historical Average		10.49%
4-Year Historical Average		7.11%
Estimated 2017	*$ 833,315.13*	*6.47%*

Avg. BS/CI repl. 2013-2016	192
Avg. total mi. repl. 2013-2016	269
Avg. ratio BS/CI to other 2013-2016	71.40%
Avg. ratio other to BS/CI 2013-2016	28.60%

Projected Cost per Mile

4-Year Historical Average		
2018	$ 892,536.04	7.11%
2019	$ 955,965.58	7.11%
2020	$ 1,023,902.85	7.11%
2021	$ 1,096,668.19	7.11%
2022	$ 1,174,604.72	7.11%
Average Cost per Mile	$ 1,028,735.48	
Total Cost for 1,055 Miles	$ 1,085,315,928.63	
Average Annual Spend	$ 217,063,185.73	
Average Annual Rate Increase	1.224	

9-Year Historical Average		
2018	$ 920,717.12	10.49%
2019	$ 1,017,286.23	10.49%
2020	$ 1,123,983.97	10.49%
2021	$ 1,241,872.66	10.49%
2022	$ 1,372,126.07	10.49%
Average Cost per Mile	$ 1,135,197.21	
Total Cost for 1,055 Miles	$ 1,197,633,058.17	
Average Annual Spend	$ 239,526,611.63	
Average Annual Rate Increase	1.41	

	Feet		Conversion to Miles		
	Bare Steel	Iron	Bare Steel	Iron	Total Miles
2008	428,073	54,762	81	10	91
2009	516,262	12,289	98	2	100
2010	317,311	16,050	60	3	63
2011	1,080,163	62,667	205	12	216
2012	903,228	67,442	171	13	184
2013	959,081	81,023	182	15	197
2014	856,785	70,087	162	13	176
2015	995,341	38,510	189	7	196
2016	1,003,778	52,923	190	10	200

Feet per Mile 5,280

Columbia Gas of Ohio, Inc
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year	2018	2019	2020	2021	2022
	Revenue Recovery Time Period	2019/20	2020/21	2021/22	2022/23	2023/24
1	**Return on Investment**					
2	Plant In-Service					
3	Additions	1,507,929,539	1,724,992,725	1,942,055,911	2,159,119,097	2,376,182,283
4	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)
5	Total Plant In-Service	1,334,826,752	1,525,998,645	1,717,170,537	1,908,342,430	2,099,514,323
6	Less: Accumulated Provision for Depreciaiton					
7	Depreciation Expense	137,274,755	174,800,204	217,549,336	265,522,149	318,718,644
8	Cost of Removal	(56,422,236)	(64,984,532)	(73,546,829)	(82,109,125)	(90,671,421)
9	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)
10	Total Accumulated Provision for Depreciation	(92,250,268)	(89,178,408)	(80,882,867)	(67,363,643)	(48,620,737)
11	Net Deferred Depreciation	18,729,599	21,428,257	24,056,341	26,612,171	29,095,748
12	Net Regulatory Asset - PISCC	54,532,066	62,310,016	69,848,284	77,169,219	84,759,582
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,577,260	7,536,314	8,477,107	9,399,934
14	Net Deferred Tax Balance - PISCC	(19,086,223)	(21,808,506)	(24,446,900)	(27,009,227)	(29,665,854)
15	Net Operating Loss due to Bonus Depreciation	85,580,217	106,778,362	112,181,904	112,131,457	112,131,457
16	Deferred Taxes on Liberalized Depreciation	(330,057,613)	(370,488,504)	(394,402,350)	(420,141,013)	(447,527,278)
17	Net Rate Base	1,242,376,736	1,419,973,938	1,592,826,997	1,752,945,788	1,906,328,651
18	Approved Pre-tax Rate of Return	10.95%	10.95%	10.95%	10.95%	10.95%
19	Annualized Return on Rate Base	136,040,253	155,487,146	174,414,556	191,947,564	208,742,987
20	**Operating Expenses**					
21	Annualized Depreciation	30,932,244	35,560,426	40,188,608	44,816,791	49,444,973
22	Deferred Depreciation Amortization	465,205	537,458	609,712	681,965	754,219
23	Deferred PISCC Amortization	1,351,462	1,559,954	1,767,515	1,975,059	2,193,474
24	Annualized Property Tax Expense	29,808,407	34,003,436	38,065,761	42,018,168	45,834,905
25	Deferred Property Tax Expense Amortization	211,040	250,163	289,557	329,208	369,134
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000
27	Operation & Maintenance Savings	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)
28	Total Revenue Requirement	197,708,611	226,298,585	254,235,810	280,668,756	306,239,693
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611
31	Estimated Number of LGS Customers	297	297	297	297	297
32	Estimated Annual Cost Per SGS Customer	101.17	115.25	128.87	141.64	153.90
33	Estimated Annual Cost Per GS Customer	1,079.19	1,234.15	1,385.21	1,527.95	1,665.76
34	Estimated Annual Cost Per LGS Customer	36,945.55	42,288.12	47,508.71	52,448.20	57,226.61
35	Estimated Cost Per Month Per SGS Customer	8.43	9.60	10.74	11.80	12.83
36	Estimated Cost Per Month Per GS Customer	89.93	102.85	115.43	127.33	138.81
37	Estimated Cost Per Month Per LGS Customer	3,078.80	3,524.01	3,959.06	4,370.68	4,768.88
38	Estimated Cost Per Month SGS-AMRD	0.29	0.27	0.26	0.23	0.20
39	Estimated Cost Per Month GS-AMRD	3.23	3.01	2.70	2.45	2.18
40	Estimated Cost Per Month LGS-AMRD	-	-	-	-	-
41	Estimated Cost Per Month SGS-HCSL	2.79	2.92	3.05	3.18	3.29
42	Estimated Cost Per Month GS-HCSL	3.19	3.35	3.52	3.66	3.81
43	Estimated Cost Per Month LGS-HCSL	-	-	-	-	-
44	Cost Per Month SGS-Total	11.51	12.79	14.05	15.21	16.32
45	Cost Per Month GS-Total	96.35	109.20	121.65	133.44	144.80
46	Cost Per Month LGS-Total	3,078.80	3,524.01	3,959.06	4,370.68	4,768.88
47	Annual Rate Increase*	1.31	1.28	1.26	1.16	1.11

Average Annual Increase 1.224

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year / Revenue Recovery Time Period	2018 / 2019/20	2019 / 2020/21	2020 / 2021/22	2021 / 2022/23	2022 / 2023/24	Average Annual Increase
1	*Return on Investment*						
2	Plant In-Service						
3	Additions	1,530,392,965	1,769,919,577	2,009,446,189	2,248,972,801	2,488,499,413	
4	Retirements	(180,892,212)	(214,572,930)	(248,253,648)	(281,934,366)	(315,615,084)	
5	Total Plant In-Service	1,349,500,753	1,555,346,647	1,761,192,541	1,967,038,435	2,172,884,329	
6	Less: Accumulated Provision for Depreciation						
7	*Depreciation Expense*	*138,968,531*	*177,943,306*	*224,621,313*	*276,094,553*	*338,363,026*	
8	Cost of Removal	(58,998,213)	(70,136,485)	(81,274,758)	(92,413,030)	(103,551,303)	
9	Retirements	(180,692,212)	*(214,572,930)*	*(248,253,648)*	(281,934,366)	(315,615,054)	
10	Total Accumulated Provision for Depreciation	(101,829,894)	(106,766,109)	(104,907,092)	(96,252,843)	(80,803,361)	
11	Net Deferred Depreciation	19,216,937	22,853,233	*26,400,728*	*29,854,231*	33,213,744	
12	*Net Regulatory Asset - PISCC*	55,785,207	66,271,116	76,455,047	86,356,260	96,607,959	
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,909,900	8,198,755	9,463,857	10,705,587	
14	Net Deferred Tax Balance - PISCC	(19,524,822)	(23,194,891)	(26,759,267)	(30,224,691)	(33,812,786)	
15	Net Operating Loss due to Bonus Depreciation	*85,580,217*	*106,778,362*	112,161,904	112,131,457	112,131,457	
16	Deferred *Taxes on Liberalized Depreciation*	(243,413,878)	(395,768,164)	(420,865,130)	(460,347,019)	(456,130,736)	
17	Net Rate Base	1,254,575,978	1,445,962,294	1,635,771,673	1,810,524,774	1,976,402,915	
18	Approved Pre-tax Rate of Return	10 95%	10 95%	10.95%	10 95%	10 95%	
19	Annualized Return on Rate Base	*137,376,070*	*158,332,871*	179,116,998	198,252,463	216,416,119	
20	**Operating Expenses**						
21	Annualized Depreciation	32,324,638	38,345,214	44,365,790	50,386,366	56,406,942	
22	Deferred Depreciation Amortization	476,414	570,405	664,396	758,387	852,378	
23	*Deferred PISCC* Amortization	1,380,285	1,651,501	1,921,637	2,191,492	2,475,616	
24	Annualized Property Tax Expense	31,343,668	37,043,268	*42,577,008*	*47,967,983*	*53,188,169*	
25	Deferred Property Tax Expense Amortization	211,040	261,934	313,179	364,760	416,697	
26	Operation & *Maintenance Expense*	150,000	150,000	150,000	150,000	150,000	
27	Operation & Maintenance Savings	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	(1,250,000)	
28	Total Revenue Requirement	202,012,114	235,105,193	267,859,008	298,821 450	328,655,921	
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836	
30	Estimated Number of GS Customers	*40,469*	*40,505*	40,543	40,577	40,611	
31	Estimated Number of LGS Customers	297	297	297	297	297	
32	Estimated Annual Cost Per SGS Customer	103 38	*119 73*	*135 77*	*150 80*	165.17	
33	Estimated Annual Cost Per GS Customer	1,102 68	1,282 18	1,459 44	1,626 78	1,787 70	
34	Estimated Annual Cost Per LGS Customer	37 749 74	43,933 80	50,054 46	55,840 37	61,415 50	
35	Estimated Cost Per Month Per SGS Customer	8 61	9 98	11 31	12 57	13.76	
36	*Estimated Cost Per Month Per* GS Customer	91 89	106 85	121 62	135 56	148 97	
37	Estimated Cost Per Month Per LGS Customer	3,145 81	3,661 15	4,171 21	4,653 36	*5,117 96*	
38	Estimated Cost *Per Month SGS-AMRD*	0 30	0 28	0 26	0 23	0 20	
39	Estimated Cost Per Month GS-AMRD	3 23	3.01	2 70	2 45	2 18	
40	Estimated Cost Per Month LGS-AMRD	-	-	-	-	-	
41	Estimated Cost Per Month SGS-HCSL	2 79	2 92	3 05	3 18	3 29	
42	Estimated Cost Per Month GS-HCSL	3 19	3 35	3 52	3 66	3 81	
43	Estimated Cost Per Month LGS-HCSL		-	-	-	-	
44	Cost Per Month SGS-Total	11 69	13 18	14 62	15 98	17 26	
45	Cost Per Month GS-Total	98 31	113 21	*127 84*	*141 68*	154 96	
46	Cost Per Month LGS-Total	3,145 81	3,661 15	4,171 21	4,653 36	5,117 96	
47	Annual Rate Increase*	1 49	1 48	1 44	1 36	*1 28*	1.410

*For estimation *purposes, the estimated total capital* investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates

Columbia Gas of Ohio, Inc.
Infrastructure Tracker Mechanism
Estimated Rate Impact of Proposed IRP Program (2018-2022)

Line No.	Capital Expenditure Year / Revenue Recovery Time Period	2018 / 2019/20	2019 / 2020/21	2020 / 2021/22	2021 / 2022/23	2022 / 2023/24
1	Return on Investment					
2	Plant In-Service					
3	Additions	1,507,929,539	1,724,992,725	1,942,055,911	2,159,119,097	2,376,182,283
4	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)
5	Total Plant In-Service	1,334,826,752	1,525,998,645	1,717,170,537	1,908,342,430	2,099,514,323
6	Less: Accumulated Provision for Depreciaiton					
7	Depreciation Expense	137,274,755	174,800,204	217,549,336	265,522,149	318,718,644
8	Cost of Removal	(56,422,236)	(64,984,532)	(73,546,829)	(82,109,125)	(90,671,421)
9	Retirements	(173,102,787)	(198,994,080)	(224,885,374)	(250,776,667)	(276,667,960)
10	Total Accumulated Provision for Depreciation	(92,250,268)	(89,178,408)	(80,882,867)	(67,363,643)	(48,620,737)
11	Net Deferred Depreciation	18,729,599	21,428,257	24,056,341	26,612,171	29,095,748
12	Net Regulatory Asset - PISCC	54,532,066	62,310,016	69,848,284	77,169,219	84,759,582
13	Net Deferred Tax Balance - Property Taxes	5,601,670	6,577,260	7,536,314	8,477,107	9,399,934
14	Net Deferred Tax Balance - PISCC	(19,086,223)	(21,808,506)	(24,446,900)	(27,009,227)	(29,565,854)
15	Net Operating Loss due to Bonus Depreciation	85,580,217	106,778,362	112,181,904	112,131,457	112,131,457
16	Deferred Taxes on Liberalized Depreciation	(330,057,613)	(370,488,504)	(394,402,350)	(420,141,013)	(447,527,276)
17	Net Rate Base	1,242,376,736	1,419,973,938	1,592,826,997	1,752,945,788	1,906,328,651
18	Approved Pre-tax Rate of Return	10.95%	10.95%	10.95%	10.95%	10.95%
19	Annualized Return on Rate Base	136,040,253	155,487,146	174,414,556	191,947,564	208,742,987
20	Operating Expenses					
21	Annualized Depreciation	30,932,244	35,560,428	40,168,608	44,816,791	49,444,973
22	Deferred Depreciation Amortization	465,205	537,458	609,712	681,965	754,219
23	Deferred PISCC Amortization	1,351,462	1,559,954	1,767,615	1,975,059	2,193,474
24	Annualized Property Tax Expense	29,808,407	34,003,436	38,065,761	42,018,168	45,834,905
25	Deferred Property Tax Expense Amortization	211,040	250,163	289,557	329,208	369,134
26	Operation & Maintenance Expense	150,000	150,000	150,000	150,000	150,000
27	Operation & Maintenance Savings	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)
28	Total Revenue Requirement	196,958,611	225,548,585	253,485,810	279,918,756	305,489,693
29	Estimated Number of SGS Customers	1,414,010	1,420,829	1,427,531	1,433,829	1,439,836
30	Estimated Number of GS Customers	40,469	40,505	40,543	40,577	40,611
31	Estimated Number of LGS Customers	297	297	297	297	297
32	Estimated Annual Cost Per SGS Customer	100.79	114.87	128.49	141.26	153.53
33	Estimated Annual Cost Per GS Customer	1,075.10	1,230.06	1,381.13	1,523.87	1,661.68
34	Estimated Annual Cost Per LGS Customer	36,605.40	42,147.97	47,368.56	52,308.05	57,086.46
35	Estimated Cost Per Month Per SGS Customer	8.40	9.57	10.71	11.77	12.79
36	Estimated Cost Per Month Per GS Customer	89.59	102.51	115.09	126.99	138.47
37	Estimated Cost Per Month Per LGS Customer	3,067.12	3,512.33	3,947.38	4,359.00	4,757.20
38	Estimated Cost Per Month SGS-AMRD	0.29	0.27	0.26	0.23	0.20
39	Estimated Cost Per Month GS-AMRD	3.23	3.01	2.70	2.45	2.18
40	Estimated Cost Per Month LGS-AMRD	-	-	-	-	-
41	Estimated Cost Per Month SGS-HCSL	2.79	2.92	3.05	3.18	3.29
42	Estimated Cost Per Month GS-HCSL	3.19	3.35	3.52	3.66	3.81
43	Estimated Cost Per Month LGS-HCSL	-		-	-	-
44	Cost Per Month SGS-Total	11.48	12.76	14.02	15.18	16.28
45	Cost Per Month GS-Total	96.01	108.86	121.31	133.10	144.46
46	Cost Per Month LGS-Total	3,067.12	3,512.33	3,947.38	4,359.00	4,757.20
47	Annual Rate Increase*	1.28	1.28	1.26	1.16	1.10

Average Annual Increase 1.216

*For estimation purposes, the estimated total capital investment for the five-year period was evenly spread over the five years. Columbia will manage the capital execution to ensure monthly SGS rates do not cumulatively exceed the approved maximum Rider IRP rates

Moore, Kevin

From: Gallon, Eric B. <EGallon@porterwright.com>
Sent: Friday, September 22, 2017 12:30 PM
To: Moore, Kevin
Subject: RE: #EXT# FW: PUCO Case No. 16-2422-GA-ALT - Columbia's Responses and Objections to OCC Discovery Set 6

Kevin:

In response to your question regarding OCC Set 6, RPD 20, Columbia Gas does not have an Excel spreadsheet showing the revenue requirement for the stipulation.

Sincerely,
Eric

Eric B. Gallon | Porter Wright Morris & Arthur LLP | 41 S High St Suites 2800-3200 | Columbus, OH 43215
Direct: 614-227-2190 | Fax: 614-227-2100 | egallon@porterwright.com
porterwright

From: Kevin.Moore@occ.ohio.gov [mailto:Kevin.Moore@occ.ohio.gov]
Sent: Friday, September 22, 2017 11:06 AM
To: Gallon, Eric B.
Subject: #EXT# FW: PUCO Case No. 16-2422-GA-ALT - Columbia's Responses and Objections to OCC Discovery Set 6

#External Email#

Eric:

Do you have any updates on OCC's request for a supplemental response to OCC, Set 6, RPD 20?

Thank you.
Kevin

Kevin F. Moore
Assistant Consumers' Counsel
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485
(614) 387-2965
kevin.moore@occ.ohio.gov

From: Moore, Kevin
Sent: Wednesday, September 20, 2017 12:59 PM

To: 'Gallon, Eric B.'
Subject: RE: PUCO Case No. 16-2422-GA-ALT - Columbia's Responses and Objections to OCC Discovery Set 6

Eric:
Just to confirm the telephone discussion we had today about Columbia's response to OCC Set 6, RPD 20.

We received Columbia's initial response consisting of OCC Set 6, RPD 20, Attachment A. OCC was wondering it there are any other work papers supporting the stipulation (e.g., an Excel spreadsheet showing the revenue requirement with formulas intact)?

Thank you.

Kevin

Kevin F. Moore
Assistant Consumers' Counsel
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485
(614) 387-2965
kevin.moore@occ.ohio.gov

From: Gallon, Eric B. [mailto:EGallon@porterwright.com]
Sent: Monday, September 18, 2017 5:28 PM
To: Moore, Kevin; Williams, Jamie
Cc: cmooney@ohiopartners.org; fdarr@mwncmh.com; mpritchard@mwncmh.com; Jones, John; Wright, William; PUCO Columbia Gas 16-2422-GA-ALT; JosephClark@nisource.com; sseiple@nisource.com; dbeil@nisource.com
Subject: PUCO Case No. 16-2422-GA-ALT - Columbia's Responses and Objections to OCC Discovery Set 6

Dear Counsel:

Columbia objects to OCC's Sixth Set of Interrogatories and Requests for Production of Document on the grounds that the majority of OCC's discovery requests are untimely. In alternative rate plan proceedings, the deadline for serving discovery requests is the same as the discovery deadline in general rate proceedings – "fourteen days after the filing and mailing of the staff report * * *." *See* Ohio Admin. Code 4901:1-19-07(G); Ohio Admin. Code 4901-1-17(B). Staff filed its report on July 10, 2017, making the discovery deadline July 24, 2017. Although the Commission's Entry of September 7, 2017, established response deadlines for "discovery requests served after the issuance of this Entry" (Entry ¶ 11), that paragraph is properly understood to apply only to discovery requests properly served after September 7th – namely, discovery requests relating to supplemental testimony in support of the Joint Stipulation and Recommendation filed August 18, 2017. The majority of OCC's Sixth Set, in contrast, relates to Columbia's application, the testimony in support of that application, and Columbia's prior responses to OCC's earlier discovery requests and Staff's data requests.

Notwithstanding this objection, and in the interests of comity and cooperation, Columbia is hereby providing its responses and objections to OCC's Sixth Set of Discovery. Although Columbia will require additional time to respond to OCC Interrogatory No. 147, it will send its response within the week.

Should you have any questions regarding this information, please do not hesitate to contact us.

Sincerely,
Eric Gallon

Eric B. Gallon | Porter Wright Morris & Arthur LLP | 41 S High St Suites 2800-3200 | Columbus, OH 43215
Direct: 614-227-2190 | Fax: 614-227-2100 | egallon@porterwright.com
porterwright

Energy Slowdown Hits One Town Hard

Businesses are slumping in a Pennsylvania community that had boomed from the gas-fracking revolution

By KRIS MAHER Aug. 19, 2015 2:29 p.m. ET

WAYNESBURG, Pa.—As fracking took off here over the past eight years, so did Gary Bowers's business supplying everything from Gatorade to replacement valves to crews drilling into natural-gas reserves a mile underground.

This year, however, the good times at his firm, Producers Supply Co., came to a screeching halt. Since January, the company's monthly sales have declined by more than half, as the number of drilling rigs operating in the Marcellus Shale has plummeted to 70 from 131 at the end of last year.

"This thing is spiraling down, and we don't know how long it's going to last," said Mr. Bowers, who expects the rig count to keep falling. "It's new territory for Appalachia."

The economic pain from lower oil and gas prices is spreading to small towns and businesses across Pennsylvania and parts of Ohio and West Virginia that had been riding a wave of prosperity from the natural-gas shale boom. Now, companies that cater to drillers, as well as hotels, restaurants and even farmers, are feeling the pinch.

A similar story is playing out in the oil fields of North Dakota, Oklahoma and Texas. U.S. energy companies have lopped off more than 150,000 jobs over the past year. But experts say many small businesses and landowners in those states have become accustomed to the boom-and-bust cycles of the industry.

Pennsylvania is now the nation's No. 2 gas producer, behind Texas. In the Marcellus Shale region, however, the gas industry's sudden rise is a relatively recent phenomenon, and this downturn is the deepest the area has experienced since the fracking boom. According to local officials, the sudden pullback has caught many small businesses that sprang up around the industry off guard.

Last month, a new round of cutbacks sent a shock wave through the region. Consol Energy Inc., based outside Pittsburgh, said it would cut 470 workers, or 10% of its total, and doesn't plan to drill a single new well until 2017. In May, Texas-based Range Resources Corp. laid off 41 employees in Pennsylvania who worked in nonshale gas operations.

The industry's growing productivity is partly to blame for a glut of gas that has kept prices depressed, leading to job cuts. In the Marcellus, a bottleneck caused by a lack of pipeline infrastructure to ship out gas has pushed supplies even higher and prices to the lowest levels in the nation.

For the week ended Aug. 12, the commonly cited "Henry Hub" spot price for natural gas in Louisiana was $2.91 per million British thermal units, down 23% from a year earlier, according to the Energy Information Administration. In Pennsylvania, the comparable spot price was $1.56, 35% lower than it was in the state a year ago.

Pennsylvania Gov. Tom Wolf, a Democrat, is pushing for a severance tax on gas production to help fund the state's schools, but the gas industry says the measure is ill-timed.

"The governor's highest-in-the-nation energy tax would kick this industry while it's down," said Dave Spigelmyer, president of the Marcellus Shale Coalition, a trade group.

Shale-gas drilling has reshaped places like Greene County in southwestern Pennsylvania, historically one of the poorest counties in the state. In June, the county received $4.5 million from a fee that gas companies paid last year on wells that had been fracked. The county had 873 wells producing shale gas last year, the fifth-highest number in the state.

But the number of new wells has slowed significantly since then. Through Tuesday, 77 shale-gas wells had been drilled in Greene County this year, down 50% from the 154 drilled in the year-earlier period, according to state figures.

In Waynesburg, the county seat, flatbed trucks hauling equipment to drill sites and tanker trucks carrying wastewater from the hydraulic fracturing process chug along High Street, the main thoroughfare. But the traffic has fallen sharply over the past few months, according to residents.

Hot Rod's House of Bar-B-Que, a 156-seat restaurant in the center of town, used to have a wait at the door for lunch, said Rodney Phillips, the owner. But on a recent day half the tables were empty. "You can get a seat any day you want," Mr. Phillips said.

When gas workers flooded into town, Mr. Phillips and his wife gave up a location that seated only 30 people and took out a mortgage to buy their current location. More than 100 baseball caps with gas company logos from executives and rig hands are nailed to a wall.

Last year, Mr. Phillips had 23 employees. He is down to 17 after layoffs and isn't replacing others who left. Sales of steak dinners are down, along with tips. Last year, he sold advertising on tabletops to gas companies, but this year no one has wanted to pay the $650 rate.

"We're in survival mode," Chris Ramsey, northeast regional manager of KSW Oilfield Rental LLC, said between bites of a pulled pork sandwich. The company, which supplies pumps and vacuums to suck up mud and cuttings from drill sites, has reduced its staff to 14 from 20 last year. Like other companies it cut its prices, so profit margins have evaporated. He said monthly sales revenue is down 45% to 50%.

Mr. Ramsey, who is originally from West Monroe, La., home of the reality series "Duck Dynasty," hosted a crawfish boil in Waynesburg last year. He paid for a catering company to transport 2,000 pounds of crawfish 1,200 miles and for three cooks to work all day. He canceled the event this year. "In this market we're cutting out all promotional events," he said.

The downturn is hitting landowners too. Homer Harden, who owns a 100-acre farm 18 miles east of Waynesburg, said his monthly royalty checks from two wells on his land have fallen 80% in recent months compared with last year.

"Everything is in a downturn," said Jerry Simmons, executive director of the National Association of Royalty Owners, an education and advocacy group in Tulsa, Okla. "Companies aren't spending the money on new leases, so our folks aren't getting their bonus checks and production is cut way back and prices are down."

At a farmers market off High Street, Mr. Harden sells tomatoes, peaches and corn on Wednesdays. But sales have dropped even here.

"They're just buying less," said Mr. Harden. "They're not spending money like they used to."

EnergyEconomist.com

Weekly Rotary Rig Count

For a better long term perspective on North American drilling activity check out the long term graphs on the Rotary Rig Count page.

North American Workover Rig Count

International Rotary Rig Counts

International Rotary Rig Count Table

Oil & Gas Split

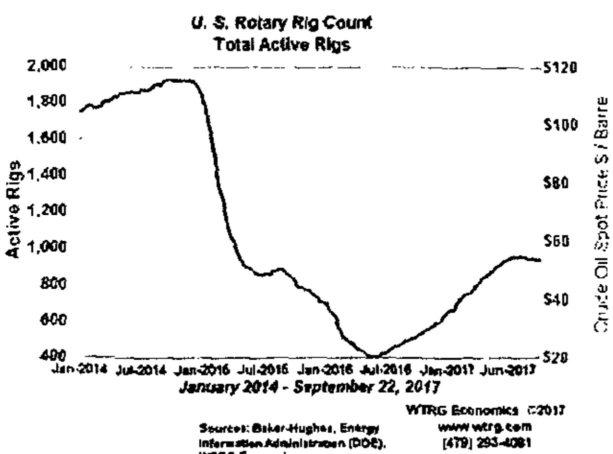
Graphic Overview

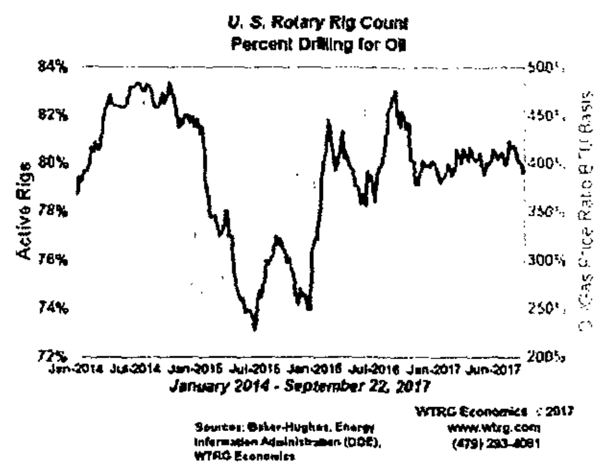
Short Term - Land/Offshore graphs & table

Long Term - Land/Offshore graphs & table

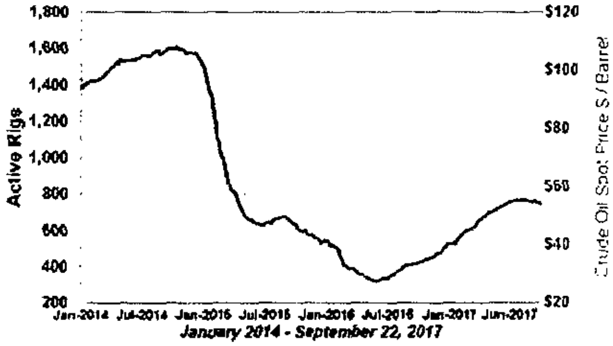
North American Rig Count				Change		Percent Change	
	09/22/2017	09/15/2017	09/23/2016	Weekly	Annual	Weekly	Annual
Total U.S.	935	936	511	(1)	424	-0.1%	83.0%
Offshore	*19*	*17*	*20*	*2*	*(1)*	*11.8%*	*-5.0%*
Land	916	919	491	(3)	425	-0.3%	86.6%
Inland Waters	3	4	3	(1)	0	-25.0%	0.0%
Oil	744	749	418	(5)	326	-0.7%	78.0%
Percent	79.6%	80.0%	81.8%	-0.4%	-2.2%		
Gas	190	186	92	4	98	2.2%	106.5%
Percent	20.3%	19.9%	18.0%	0.4%	2.3%		
Directional	77	74	49	3	28	4.1%	57.1%
Horizontal	790	795	402	-5	388	-0.6%	96.5%
Vertical	*68*	*67*	*60*	*1*	*8*	*1.5%*	*13.3%*
Gulf of Mexico	19	17	20	2	-1	11.8%	-5.0%
Gulf Oil	15	14	19	1	-4	7.1%	-21.1%
Percent	*78.9%*	*82.4%*	95.0%	-3.4%	-16.1%		
Gulf Gas	4	3	1	1	3	33.3%	300.0%
Percent	21.1%	17.6%	5.0%	3.4%	16.1%		
Canada	220	212	138	8	82	3.8%	59.4%
Oil	122	112	77	10	45	8.9%	58.4%
Percent	55.5%	52.8%	55.8%	2.6%	-0.3%		
Gas	98	100	61	(2)	37	-2.0%	60.7%
Percent	44.5%	47.2%	44.2%	-2.6%	0.3%		
North America	1,155	1,148	649	7	506	0.6%	78.0%
Prices							
Oil $/bbl.	$50.18	$49.07	$44.72	$1.11	$5.45	2.3%	12.2%
Oil $/mmbtu	$8.65	$8.46	$7.71	$0.19	$0.94	2.3%	12.2%
Gas $/mmbtu	$3.12	$2.95	$3.07	$0.17	$0.05	5.8%	1.6%

Click on graph for a larger image





U. S. Rotary Rig Count
Drilling for Oil



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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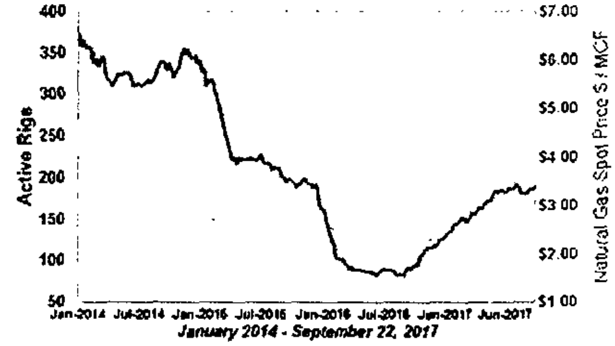
U. S. Rotary Rig Count
Drilling for Natural Gas



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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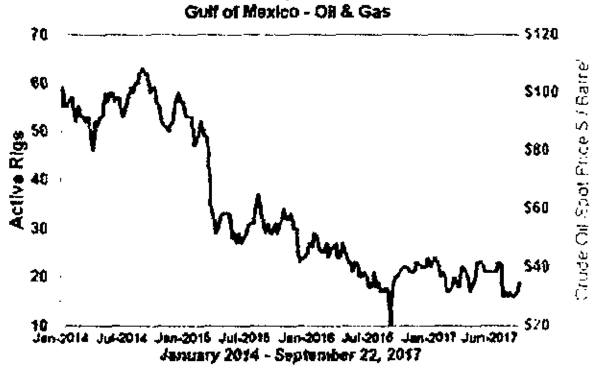
U. S. Rotary Rig Count
Gulf of Mexico - Oil & Gas



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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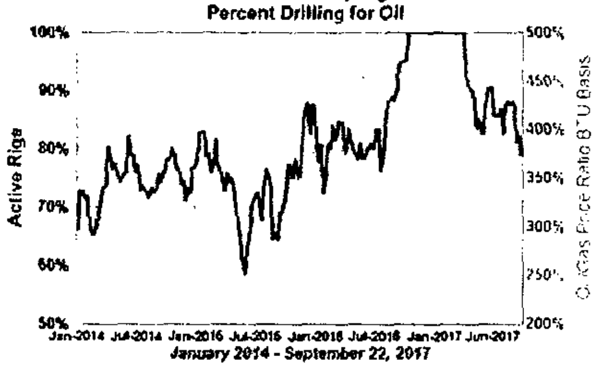
Gulf of Mexico Rotary Rig Count
Percent Drilling for Oil



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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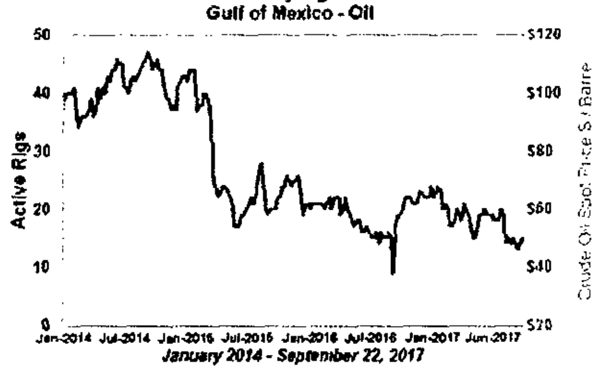
U. S. Rotary Rig Count
Gulf of Mexico - Oil



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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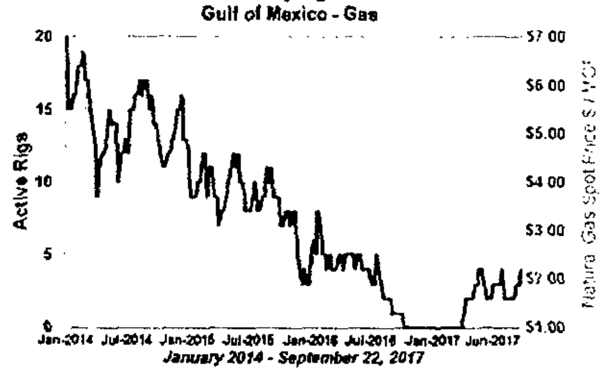
U. S. Rotary Rig Count
Gulf of Mexico - Gas



Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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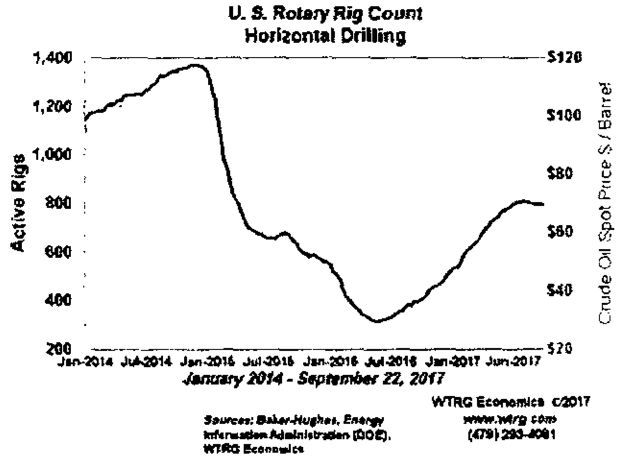
U. S. Rotary Rig Count
Horizontal Drilling
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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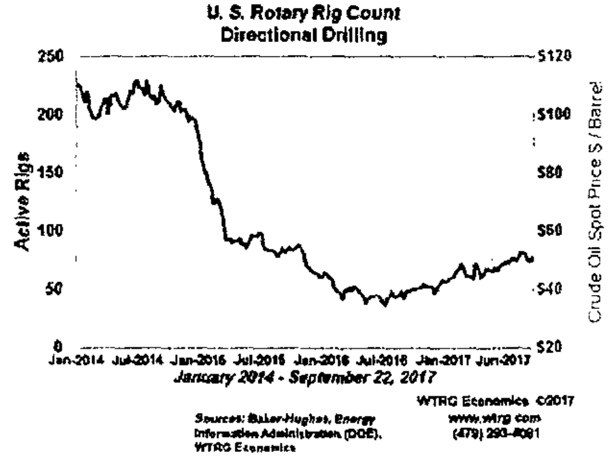
U. S. Rotary Rig Count
Directional Drilling
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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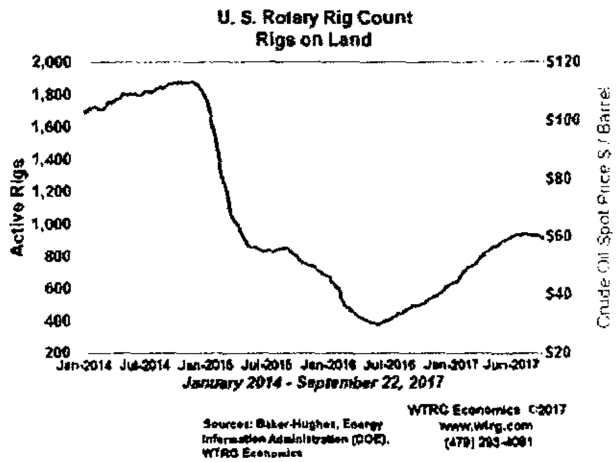
U. S. Rotary Rig Count
Rigs on Land
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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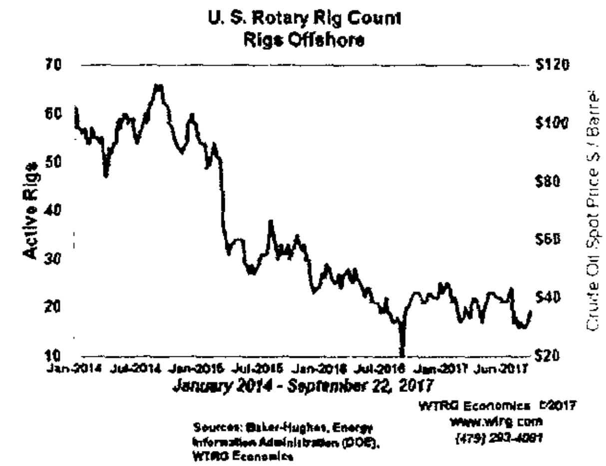
U. S. Rotary Rig Count
Rigs Offshore
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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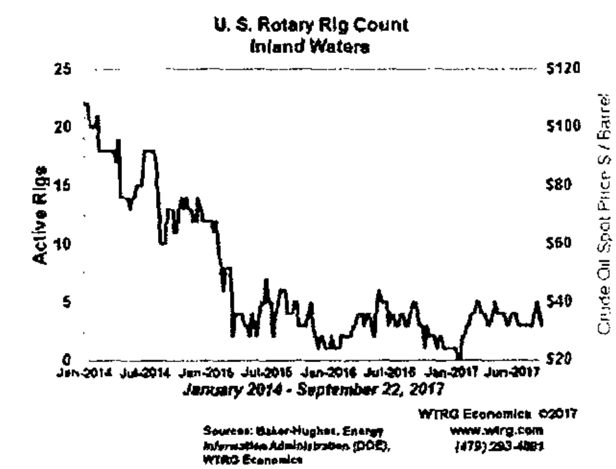
U. S. Rotary Rig Count
Inland Waters
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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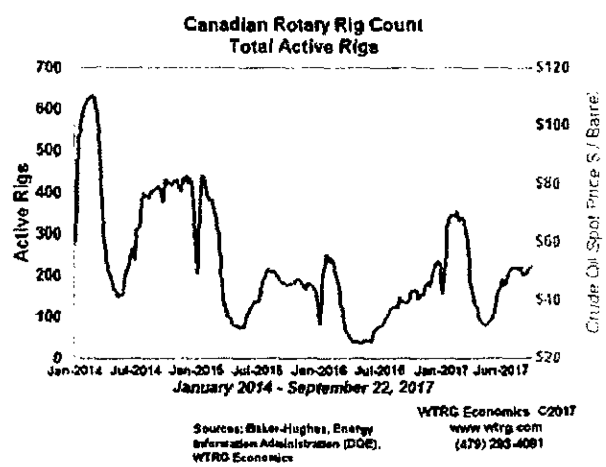
Canadian Rotary Rig Count
Total Active Rigs
Active Rigs
Crude Oil Spot Price $ / Barrel
January 2014 - September 22, 2017
Sources: Baker-Hughes, Energy Information Administration (DOE), WTRG Economics
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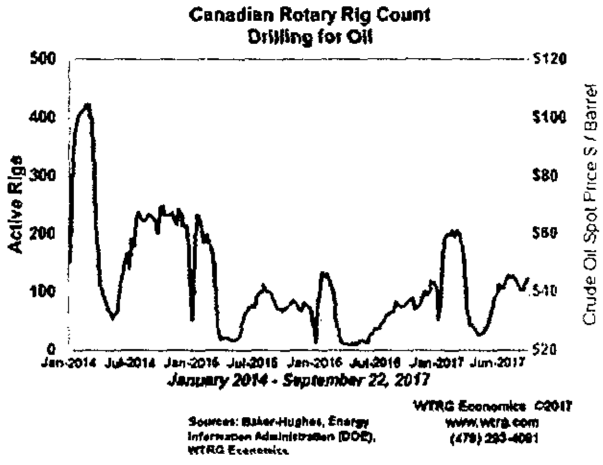
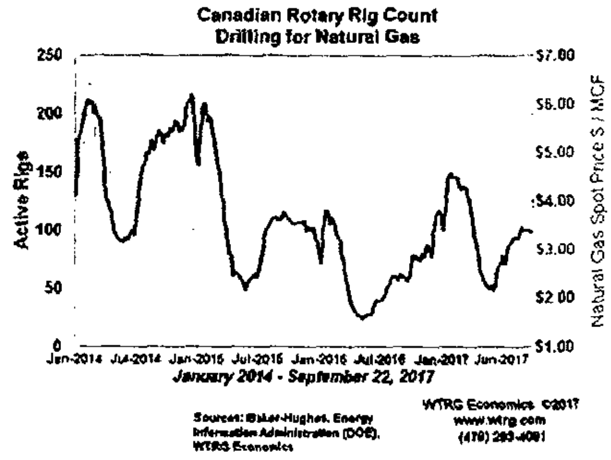
(479) 293-4081





James L. Williams
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The Handy-Whitman Index® of Public Utility Construction Costs™

Trends of Construction Costs

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G-3

COST TRENDS OF GAS UTILITY CONSTRUCTION

NORTH CENTRAL REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	FERC	COST INDEX NUMBERS 2005 Jan. 1	2005 Jul. 1	2006 Jan. 1	2006 Jul. 1	2007 Jan. 1	2007 Jul. 1	2008 Jan. 1	2008 Jul. 1	2009 Jan. 1	2009 Jul. 1	2010 Jan. 1	2010 Jul. 1
1	Total Plant		542	539	570	580	558	562	573	654	636	611	618	639
2														
3	**Production Plant**													
4	L. P. G. Equipment		415	424	432	436	452	454	465	482	489	503	512	513
5	S. N. G. Equipment		422	429	442	451	470	473	487	503	507	498	512	510
6														
7														
8														
9														
10														
11														
12														
13	**Storage Plant**													
14	Gas Holders Excl. of Found	362	444	445	460	463	473	399	412	428	436	431	432	435
15														
16														
17														
18														
19														
20														
21														
22														
23														
24	**Transmission Plant**													
25	Total Transmission Plant		430	437	439	449	483	470	487	530	536	501	484	509
26	Structures & Improvements	366	409	410	421	426	439	453	468	481	474	462	474	480
27	Mains	367	428	431	434	444	483	464	482	530	536	495	472	501
28														
29	Compressor Station Equipment	368	467	503	491	499	514	525	537	569	577	572	578	589
30	Meas. & Reg. Sta. Equipment	369	513	515	534	547	552	548	563	622	616	590	594	590
31														
32														
33														
34														
35														
36														
37														
38														
39														
40														
41	**Distribution Plant**													
42	Structures & Improvements	375	409	410	421	426	439	453	468	481	474	462	474	480
43	Mains, Cast Iron	376	390	391	421	426	465	467	492	527	581	583	613	613
44	Mains, Steel	376	583	578	614	626	593	597	605	710	682	650	656	684
45	Mains, Plastic	376	400	409	423	430	449	453	464	470	493	495	482	482
46	Compressor Station Equipment	377	467	503	491	499	514	525	537	569	577	572	578	589
47	Meas. & Reg. Sta. Equipment	378	496	496	516	526	530	525	539	596	589	563	567	563
48	Meas. & Reg. Sta. Equipment-City Gt.	379	500	499	521	531	531	526	539	602	592	564	568	567
49	Services, Steel	380	475	476	498	505	501	504	518	558	557	546	555	565
50	Services, Plastic	380	411	415	433	436	455	457	472	475	492	493	501	501
51	Meters	381	185	184	188	197	205	231	241	250	261	252	257	252
52	Meter Installations	382	635	626	672	686	638	642	648	784	742	699	708	744
53	House Regulators	383	336	339	344	356	377	377	387	392	412	400	406	414
54	House Regulators Installations	384	615	607	651	664	622	626	633	757	719	680	692	724
55														
56														

G-3

COST TRENDS OF GAS UTILITY CONSTRUCTION

NORTH CENTRAL REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	FERC	COST INDEX NUMBERS													
			2011		2012		2013		2014		2015		2016		2017	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Total Plant		675	688	759	755	757	749	754	759	758	745	723	731	759	
2																
3	**Production Plant**															
4	L. P. G. Equipment		535	566	597	601	609	608	615	621	625	627	635	638	657	
5	S. N. G. Equipment		524	538	545	548	572	554	557	570	576	589	591	593	604	
6																
7																
8																
9																
10																
11																
12																
13	**Storage Plant**															
14	Gas Holders Excl. of Found	362	445	445	454	457	465	466	468	477	482	479	484	485	492	
15																
16																
17																
18																
19																
20																
21																
22																
23																
24	**Transmission Plant**															
25	Total Transmission Plant		518	527	560	573	550	548	590	591	596	587	569	573	591	
26	Structures & Improvements	366	488	490	501	506	513	512	528	524	532	526	531	537	550	
27	Mains	367	510	518	556	571	542	539	587	588	593	581	559	563	583	
28																
29	Compressor Station Equipment	368	596	615	628	636	641	643	649	658	663	667	668	673	682	
30	Meas. & Reg. Sta. Equipment	369	639	656	702	704	701	696	717	720	723	713	697	718	738	
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																
41	**Distribution Plant**															
42	Structures & Improvements	375	488	490	501	506	513	512	528	524	532	526	531	537	550	
43	Mains, Cast Iron	376	607	607	639	706	720	728	782	813	785	786	788	794	851	
44	Mains, Steel	376	727	743	833	826	825	815	815	820	816	797	765	776	806	
45	Mains, Plastic	376	490	497	513	521	521	524	522	527	530	532	535	538	542	
46	Compressor Station Equipment	377	596	615	628	636	641	643	649	658	663	667	668	673	682	
47	Meas. & Reg. Sta. Equipment	378	636	649	697	700	680	676	696	699	701	691	677	690	707	
48	Meas. & Reg. Sta. Equipment-City Gt.	379	637	651	703	704	686	681	699	702	704	692	677	690	708	
49	Services, Steel	380	588	596	637	637	643	641	649	652	653	647	641	646	664	
50	Services, Plastic	380	515	518	533	536	543	544	552	554	559	560	566	568	579	
51	Meters	381	252	256	261	271	271	272	341	342	372	372	388	388	442	
52	Meter Installations	382	799	818	933	923	918	904	899	905	899	873	827	840	877	
53	House Regulators	383	425	430	432	438	443	443	454	454	469	469	481	481	487	
54	House Regulators Installations	384	776	794	899	889	886	873	870	876	870	847	806	818	853	
55																
56																

OCC EXHIBIT 3

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

DIRECT TESTIMONY
OF
MOHAMMAD HARUNUZZAMAN, Ph.D.

OPPOSING
THE JOINT STIPULATION AND RECOMMENDATION

On Behalf of
The Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485

September 28, 2017

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I. INTRODUCTION

Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

A1. My name is Mohammad Harunuzzaman. My business address is 10 West Broad Street, 18th Floor, Columbus, Ohio 43215-3485. I am employed by the Office of the Ohio Consumers' Counsel ("OCC") as a Principal Regulatory Analyst.

Q2. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A2. I earned a Doctorate in Nuclear Engineering from the Ohio State University in 1994. In the doctoral program, my fields of specialization were reliability and safety of nuclear power plants, and cost optimization. I also have a bachelor's degree in Physics from the University of Dhaka, Bangladesh.

My professional experience includes nearly 15 years of regulatory policy research at the National Regulatory Research Institute ("NRRI'), The Ohio State University, more than seven years in electric market analysis at Pepco Energy Services ("PES"), an unregulated affiliate of Potomac Electric Power Company ("PEPCO"), and one year in electric fuel price forecasting at the Florida Power and Light Company ("FPL").

At the NRRI, I performed regulatory policy analysis, supported by engineering and quantitative analysis, of issues that include cost-of-service and rate design, deregulation of the natural gas industry and retail gas choice programs, separation of costs and services of regulated and unregulated parts of a utility company, incentive regulation as applied to gas acquisition practices of a local distribution company, energy efficiency, renewables and advanced electric generation technologies.

At FPL, I worked on the forecasting of energy fuel prices including coal, gas, and oil. At PES, I performed computer modeling simulation and analysis of wholesale regional electricity markets, including the PJM,[1] NYISO,[2] NEISO[3] and ERCOT,[4] and forecasted electricity prices. At the same company, I also performed analysis to support financial risk management operations of the company.

Since March 2016, I have been employed as Principal Regulatory Analyst at the OCC. At my current position, I am responsible for research, investigation, and analysis of regulatory filings at the state and federal levels, participation in special projects, and assisting in policy development and implementation. Also, I have been the assigned leader of the OCC industry group for gas, and have the responsibility for coordinating and managing all analytical work for gas cases.

[1] Pennsylvania, Maryland and New Jersey Regional Transmission Operator.

[2] New York Independent System Operator

[3] New England Independent System Operator.

[4] Electricity Reliability Council of Texas.

A list of my professional publications is included in Attachment MH-1.

Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?

A3. No.

II. PURPOSE OF MY TESTIMONY

Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A4. The purpose of my testimony is to explain and support the OCC's position regarding the Joint Stipulation and Recommendation ("Settlement") reached in this case between Columbia Gas of Ohio ("Columbia" or "Utility"), the Public Utilities Commission of Ohio ("PUCO") Staff ("Staff"), and Ohio Partners for Affordable Energy ("OPAE").[5] My testimony will address the Hazardous Customer Service Line ("HCSL") program, which is part of the Columbia Infrastructure Replacement Program ("IRP"), and included in the Settlement. My testimony will also show that the Settlement does not meet the requirements of the three-pronged test with respect to the HCSL program, and should therefore be denied. Other OCC witnesses will address other aspects of OCC's positions regarding the Settlement and Columbia's Application such as those identified and

[5] The Industrial Energy Users of Ohio ("IEU-Ohio") has agreed not to oppose the Settlement.

explained in OCC's Objections to the Staff Report and Application filed on August 14, 2017.[6]

III. SUMMARY OF HAZARDOUS CUSTOMER SERVICE LINE REPLACEMENT ("HCSL") PROGRAM.

Q5. PLEASE SUMMARIZE THE HCSL PROGRAM THAT CUSTOMERS ARE BEING ASKED TO PAY FOR.

A5. The HCSL program is part of Columbia's IRP. The IRP was initially approved in Case No. 07-478-GA-UNC by the PUCO.[7] The PUCO approved a three-year plan to replace its prone-to-failure risers and authorized Columbia to "assume responsibility" for associated service lines and hazardous leaks. Thus, the HCSL is designed to reduce the risk to persons and property from allegedly hazardous customer service lines. The main alleged risk is from leaking service lines. Columbia's IRP, along with its HCSL program, was subsequently extended in Case Nos. 08-73-GA-ALT[8] and 11-5515-GA-ALT.[9] In Case No. 11-5515-GA-

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[6] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* PUCO Case No. 16-2422-GA-ALT, OCC Objections to the Staff Report and Application (August 14, 2017) ("OCC's Objections").

[7] *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of Tariffs to Recover, Through an Automatic Adjustment Clause, Costs Associated with the Establishment of an Infrastructure Replacement Program and for Approval of Certain Accounting Treatment,* Case No 07-0478-GA-UNC, Opinion and Order (April 9, 2008).

[8] *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges,* Case No 08-73-GA-ALT, Opinion and Order (December 3, 2008).

[9] *In the Matter of the Application of Columbia Gas of Ohio, Inc., for Approval of an Alternative Form of Regulation,* Case No. 11-5515-GA-ALT, Opinion and Order (November 28, 2012).

ALT, Columbia reported that it had repaired or replaced more than 55,000 customer service lines under its IRP, and expected to continue repairing or replacing approximately 14,000 service lines a year, at an annual cost of $21 million per year.[10]

In its current filing, Columbia reports that it has repaired or replaced 256,989 customer lines under the IRP. Columbia also states that it has replaced approximately 70,000 service lines under the HCSL.[11] Columbia expects HCSL-related costs to be approximately $25 million annually for the next five years starting in 2018.[12]

IV. EVALUATION OF THE SETTLEMENT

Q6. IF APPROVED BY THE PUCO, DOES THE SETTLEMENT INCLUDE THE HCSL PROGRAM?

A6. Yes, even though the Settlement does not explicitly address the HCSL program. In the absence of any provisions to the contrary, approval of the Settlement would imply the approval of continuation of the HCSL program as proposed in the Application.

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[10] *In the Matter of the Application of Columbia Gas of Ohio Inc. for Approval of an Alternative Form of Regulation*, Case No. 16-2422-GA-ALT, Application at 4 (February 27, 2017) ("Application").

[11] See Staff DR 4 (Attachment MH-2).

[12] Application at 6.

Q7. WHAT IS YOUR UNDERSTANDING OF THE STANDARD OF REVIEW THAT THE PUCO COMMONLY USES IN EVALUATING AND ADOPTING A SETTLEMENT?

A7. I understand that the PUCO typically evaluates a proposed settlement using a three-prong test for approval.[13] Specifically, the PUCO will apply the following three criteria in deciding whether to adopt a proposed settlement:

1. Is the proposed settlement a product of serious bargaining among capable, knowledgeable parties?
2. Does the proposed settlement, as a package, benefit customers (ratepayers) and the public interest?
3. Does the proposed settlement package violate any important regulatory principle or practice?

Only when the PUCO determines that a proposed settlement, as a package, satisfies each individual prong identified above will the PUCO adopt the settlement or in many instances adopt it with significant modifications.

Q8. DOES THE SETTLEMENT PASS THE THREE PRONG TEST?

A8. No. Based on my many years of utility experience and knowledge as an engineer and regulatory analyst, I conclude that the Settlement is not reasonable and should

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[13] See, e.g., *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company, Individually and, if Their Proposed Merger is Approved, as a Merged Company (collectively, AEP Ohio) for an Increase in Electric Distribution Rates,* PUCO Case No. 11-351-EL-AIR et al., Opinion and Order at 8-10 (December 14, 2011).

not be adopted by the PUCO. Specifically, the HCSL program proposed in the Application and recommended for approval in the Settlement is not in the public interest and violates regulatory principles and practices.

Q9. BRIEFLY EXPLAIN WHY YOU BELIEVE THE HCSL PROGRAM SHOULD NOT BE APPROVED.

A9. The HCSL program should not be approved for the following reasons:

- The benefits of the HCSL do not outweigh the costs. Columbia did not indicate how the HCSL's benefits outweigh its costs, did not provide any evidence to quantify the costs and benefits, and did not perform a cost benefit analysis. The burden of proof for providing such evidence lies on Columbia;[14]
- Columbia failed to demonstrate that there is a risk to its service lines that needs to be mitigated and the evidence shows that any risk that does exist is de minimis. There is a one in more than 11.9 million chance of a service line incident occurring anywhere in the country due to corrosion, material/weld failure, or natural forces.

[14] *In the Matter of the Application of Duke Energy, Inc., for Approval of An Alternative Rate Plan Pursuant to R.C. 4929.05 for An Accelerated Service Line Replacement Program,* Opinion and Order at 45. (October 26, 2016) ("Duke ASRP Case").

- Columbia provided inadequate evidence to support the proposed $125 million expenditure on the HCSL program over the next five years.
- Columbia did not consider or evaluate any alternative method or programs to mitigate the alleged risks to service lines.
- Columbia did not demonstrate that it considered ways to improve its current service line replacement program.
- There are already sufficient programs and PUCO rules in place to mitigate any alleged risks that customer service lines pose.
- Columbia has not demonstrated that accelerated cost recovery is necessary or justified for this program.

Q10. PLEASE ELABORATE ON THE PROBLEMS WITH THE PROJECTED COSTS OF THE HCSL PROGRAM.

A10. One way to determine whether a program is just and reasonable or beneficial to the public interest is to consider the costs and benefits of the program.[15] Under the HCSL program, Columbia proposes to charge customers $25 million per year

[15] See *Duke ASRP Case* at 34.

from 2018 through 2022, for a total of $125 million. This is a $4 million increase, per year, from what it spent last year on the HCSL.[16]

Yet, Columbia fails to present any information or evidence to support this level of cost and additional charges to consumers. No information is provided on how many service lines will be replaced over the next five years. In fact, Columbia states that it does not know how many service lines it will replace.[17] Columbia only states that it projects future annual expenditures on past annual expenditures.[18] Thus, Columbia's projection of future expenditures lacks any substantive support because it has not provided any data or analysis to show that last years' spending is representative of what it will spend next year. Without substantive support, Columbia cannot justify its request to increase the costs it will charge customers. It is not in the public interest for customers to pay charges without a showing that the costs are just and reasonable and necessary to provide safe and reliable service.

The $125 million cost for the HCSL program over five years is excessive. The PUCO recently rejected a similar request made by another Ohio utility proposing a similar program. In Case No. 14-1622-GA-ALT ("Duke ASRP Case"), Duke Energy Ohio, Inc. ("Duke") proposed a rider to repair or replace its allegedly hazardous service lines. Duke sought approval to charge customers

[16] See Staff DR 4 (Attachment MH-2).

[17] See OCC INT 130 (Attachment MH-3).

[18] See OCC INT 130 (Attachment MH-3).

approximately $320 million over ten years for the program. The PUCO found that $320 million over ten years (or $160 million per five-year period[19]) was unjust and unreasonable and denied Duke's application.[20] Columbia's request is similar in scale and purpose to Duke's request. The PUCO should deem Columbia's request unjust and unreasonable, as it did Duke's similar program.

Finally, the excessive costs of the HCSL will make it more difficult for the PUCO to ensure that Columbia's customers are able to obtain reasonably priced gas services, which is a policy of the State of Ohio, consistent with R.C. 4929.02(A)(1). A program which is not in compliance with the policies of the state is in violation of regulatory principles and practices.

Q11. EXPLAIN WHY COLUMBIA'S FAILURE TO CONSIDER OTHER FEASIBLE ALTERNATIVES TO THE HCSL IS UNJUST AND UNREASONABLE.

A11. Another way to determine whether a program is just and reasonable, beneficial to the public interest, and in compliance with the regulatory principles and practices is to compare it to other alternative methods or programs.[21] While the utility is not obligated to compare its program to every imaginable alternative, it should

[19] This is an estimation of amount of spend after five years ($320 million/10 years=$32 million a year x 5 years=$160 million).

[20] See *Duke ASRP Case.*

[21] See *Duke ASRP Case* at 34-35.

investigate other feasible options. This will allow the utility, the PUCO, and intervenors to compare the options and determine whether the proposed application is just and reasonable. Further, the PUCO has stated that before requesting a program like the HCSL, it expects local distribution companies will reevaluate historical solutions and ensure they are continuing to improve distribution systems and the strategies utilized to increase safety within the historical solution.[22]

Columbia did not provide any information on whether it considered alternative, less expensive methods to mitigate the alleged safety risk on its customer service lines. In fact, Columbia admitted that it did not consider any other methods or programs to address the alleged risk that the HCSL is designed to mitigate.[23] In addition, Columbia did not provide any information on whether it reevaluated its historical solution, the HCSL, to ensure it is continuing to improve its strategies. Indeed, the only proposed change to the HCSL was the increase in cost. There were no explicit changes to the HCSL in the Settlement intended to improve the program based on the last ten years of its existence.

Proposing a program without considering alternative methods or even reevaluating the current method is not in the public interest and harms customers. It is not in the public interest and harms customers because it deprives the public

[22] Duke ASRP Case at 34-35.

[23] See OCC INT-123 (Attachment MH-4).

and customers of the opportunity for a better, yet feasible program to be reviewed and selected by the PUCO.

Last, proposing a program without considering alternative methods or even reevaluating the current program is inconsistent with the regulatory practice that the PUCO unambiguously stated in the Duke ASRP Order.

Q12. EXPLAIN WHY COLLECTING HCSL-RELATED COSTS ON AN ACCELERATED BASIS IS UNJUST AND UNREASONABLE.

A12. Given the fact that the probability of a service line incident is so low, there is no rational justification for the accelerated replacement of service lines. Further, there is no need to incentivize the replacement of service lines because Columbia is already repairing or replacing them through its AMRP[24] and through the PUCO's regular pipeline safety measures,[25] as will be explain in more detail later.

Approving a rider that accelerates the collection of $125 million from customers when the utility has presented no evidence that it requires accelerated cost collection to allow or incentivize it to implement the specified program is not in the public interest. Approving accelerated recovery for a program that has such small potential benefit to customers is also not in the public interest. Such a rider will only unreasonably increase customers' rates. If Columbia believes its current

[24] See Application at 6-7.

[25] See Ohio Admin. Code Chapter 4901:1-16, et al.

local distribution charges are insufficient to provide reliable and safe service to its customers, the Utility should file an application for a rate increase, which would be subject to a full rate review.

Q13. EXPLAIN WHAT OTHER PUCO RULES ARE ALREADY IN PLACE TO MITIGATE ANY ALLEGED RISKS RELATED TO SERVICE LINES.

A13. The HCSL does not benefit customers or the public interest because Columbia is already obligated to repair or replace hazardous customer service lines under the PUCO's current pipeline safety measures.[26]

Under PUCO rules, a utility is required to address each and every leaking natural gas pipeline according to the severity of the leak. The requirements range from the immediate repair of a grade one leak to no action for a grade three leak. These requirements are sufficient to mitigate any risk to persons or property as a result of a service lines leak because, as more fully explained later, the risk of a service line leak resulting in an incident is virtually non-existent.

Notably, Columbia has provided no evidence to show why these traditional safety measures, required by the Ohio Administrative Code, are insufficient to ensure against any safety risk that customer service lines could pose. Thus, spending $125 million of customers' money on a program to accomplish what Columbia is

[26] See Ohio Admin. Code Chapter 4901:1-16, et al.

already required to do is not in the public interest because it would unjustly and unreasonably increase customers' bills.

Q14. DID COLUMBIA QUANTIFY ANY OF THE RISKS OR BENEFITS TO CUSTOMERS OF THE HCSL PROGRAM?

A14. No. Columbia's Application, testimony, and proposed Settlement in this case are largely devoid of any information regarding the HCSL program. Columbia does claim that the benefits of the HCSL program are the promotion of safety and reliability through a reduction in the amount of allegedly hazardous service lines on its system.[27] Yet, Columbia failed to quantify the safety risks posed by customer service lines, the expected decrease in this risk to be achieved by the HCSL program, and the expected increase in reliability to be achieved by the HCSL program. Without such quantification, it is difficult to find that the program benefits customers or is in the public interest.

Q15. IS THERE ANY OTHER INFORMATION THAT THE APPLICATION FAILED TO INCLUDE REGARDING THE HCSL PROGRAM?

A15. Yes. The HCSL program is intended to replace hazardous customer service lines, and yet fails to specify any criteria for what constitutes "hazardous." The

[27] *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation to Extend and Increase Its Infrastructure Replacement Program,* PUCO Case No. 16-2422-GA-ALT, Supplemental Testimony of Melissa Thompson at 4 (September 8, 2017).

decision to replace a hazardous line is left up to a Columbia employee with no opportunity for objective verification of the decision criteria.[28]

In the absence of such criteria, there are no requirements explaining what Columbia is and isn't allowed to do under the HCSL program. Approving such a rider would not be in the public interest because there is no way to determine if the program is being implemented efficiently or effectively. And, there is no way to determine whether the Columbia is making prudent expenditures under the rider.

What little information Columbia did provide regarding what it deems to be "hazardous" is noteworthy. First, it is notable that Columbia states that it did not consistently track information regarding its HCSL until 2011.[29] Thus, there are three years where Columbia has no detailed information regarding what occurred under its HCSL program.[30] In addition, Columbia states that it does not replace abandoned lines under the HCSL.[31] From 2011 to 2016, the vast majority (30,859 of the 43,036 records provided) of service lines that Columbia replaced were leaking due to corrosion.[32] However, Columbia has also apparently replaced

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[28] See OCC INT-36 (Attachment MH-5).

[29] See OCC INT-106 (Attachment MH-6).

[30] To OCC's knowledge, the only information Columbia has regarding the HCSL from 2008 to 2011 is the amount of HCSL lines that were replaced and the cost of those expenditures. See Staff DR 4 (Attachment MH-2).

[31] See OCC Set 6, INT 106(g) (Attachment MH-6).

[32] See OCC Set 6, INT 106, http://www.occ.ohio.gov/gas/OCC_INT_Set_6-105_Attachment_A.XLSX (Attachment MH-6).

8,741 service lines that were not leaking at all.[33] Thus, about 39,600[34] of the 43,036 service lines that Columbia has replaced in that past were either not leaking at all or were leaking as a result of corrosion. As explained later, the safety risk associated with a service line that is leaking as a result of corrosion is basically non-existent. Columbia should certainly not be allowed to collect $125 million on an accelerated basis in order to mitigate any minimal risk that does exist.

Q16. YOU STATED EARLIER THAT THE HCSL IS DESIGNED TO REDUCE ALLEGED RISK FROM "HAZARDOUS" SERVICE LINES BY, FOR EXAMPLE, REPLACING LEAKING SERVICE LINES. WHY DO SERVICE LINES GENERALLY LEAK?

A16. The reasons that service lines usually develop leaks include corrosion, excavation damage, natural causes such as earthquake, frost, lightning and storms, temperature fluctuations, weld or joint failure, and construction/operation errors.

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[33] See OCC-INT 106(e) (Attachment MH-6). OCC asked "In reference to the HCSL program as proposed in the Stipulation, for each HCSL line that has been replaced from 2008 to 2016, identify ... The amount of non-leaking lines that were replaced." Columbia responded "There were 8,741 services that did not have a DPI associated with them." "DPI" stands for "Distribution Plant Investigation." "Distribution Plant Inspection" refers to the investigation, classification and further action processes that are related to monitoring and repairing **leaking** mains and service lines. See OCC INT-118, Attachment MH-7.

[34] 30,859 + 8,741 = 39,600.

Q17. WHAT IS THE LEAK CAUSE OF MOST OF THE SERVICE LINES THAT COLUMBIA REPLACES UNDER THE HCSL?

Q17. Approximately 30,859 of the 43,036 service lines (or 72 percent) that were replaced under the HCSL were replaced due to corrosion.[35]

Q18. PLEASE DESCRIBE WHAT GENERALLY HAPPENS WHEN A CUSTOMER SERVICE LINE LEAKS DUE TO CORROSION.

A18. Generally, when a small-diameter, curb-to-meter steel service line develops a leak from corrosion, a small amount of gas escapes through a pin prick sized hole into a diffused area into the ground. The general consequence of such a leak is the grass above the leak turning yellow and dying. The utility will then repair the line.

Q19. ARE LEAKS IN A CUSTOMER SERVICE LINE AS HAZARDOUS AS A LEAK IN A DISTRIBUTION OR TRANSMISSION MAIN LINE?

A19. No, generally they are not. The pressures at which service lines operate are much lower than those at the transmission or distribution mains, and, therefore, create less of a hazard. Moreover, gas moving through leaks in a service line can usually diffuse into the ground. For these reasons, leaks developing in a customer service line generally do not present an imminent safety threat.[36] Therefore, such

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[35] See OCC-INT 106, http://www.occ.ohio.gov/gas/OCC_INT_Set_6-105_Attachment_A.XLSX (Attachment MH-6).

[36] See *Duke ASRP Case*, Direct Testimony of OCC Witness Bruce Hayes at 12 (November 6, 2015).

replacements can be done on as-needed basis, without an accelerated program, and can be financed through a base rate proceeding.

Q20. WHAT IS THE PROBABILITY THAT A SERVICE LINE LEAK WILL RESULT IN AN INCIDENT?

A20. In the 2014 Duke ASRP Case, Staff determined that the odds of any single service line failing as a result of one of the three leak causes[37] that the Duke ASRP was designed to eliminate and causing a reportable incident anywhere in the country in a given year was more than 1 in 11.9 million.[38] It appears that of the 43,036 service lines that Columbia has replaced under the HCSL since 2011, 31,861 of them were replaced due to the same three leak causes as the Duke ASRP was designed to eliminate.[39] Therefore, the service line incident probability in the Duke ASRP Case is also applicable to this case.

Q21. DID COLUMBIA QUANTIFY THE INCREASE IN SAFETY THAT CUSTOMERS WILL RECEIVE AS A RESULT OF THE HCSL?

A21. No.

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[37] *Duke ASRP Order* at 24. The three leak causes are corrosion, material and welds, and natural forces.

[38] See *Duke ASRP Order* at 24.

[39] OCC Set 6, INT 106, http://www.occ.ohio.gov/gas/OCC_INT_Set_6-105_Attachment_A.XLSX (Attachment MH-6).

Q22. CAN THE RELIABILITY OF A CUSTOMER SERVICE LINE BE QUANTIFIED?

A22. Yes. One can measure or calculate the probability of a service disruption or outage. The reliability of the line can be defined as one minus the outage probability. For example, if the outage probability is four percent, the reliability would be 96 percent. The outage probability can be calculated using actual data on outages. For example, if gas distribution service was disrupted (with or without causing a safety issue) to five customers out of one million customers, that represents an outage probability of five in a million.

Q23. CAN THE INCREASE IN RELIABILITY OF A CUSTOMER SERVICE LINE DUE TO A SERVICE LINE REPLACEMENT OR REPAIR BE QUANTIFIED?

A23. Yes. Once the reliability is quantified, the increase in reliability is the difference in reliability before and after a service line replacement or repair.

Q24. DID COLUMBIA QUANTIFY THE INCREASE IN RELIABILITY THAT CUSTOMERS WILL RECEIVE AS A RESULT OF THE HCSL?

A24. No.

Q25. DO THE BENEFITS OF THE HCSL PROGRAM OUTWEIGH ITS COSTS?

A25. No. After reviewing the information regarding the costs and benefits that is available, it is my opinion that the benefits do not outweigh the costs. If the safety measures in the HCSL to improve Columbia's system safety can be thought of as adding measurable increments of safety, then in my opinion Columbia's proposed HCSL will not move the safety needle very much. Moreover, the marginal safety gain as a result of the HCSL should also be considered in light of its large price tag to customers --$125 million over five years. In my opinion, the HCLS's purported benefits do not outweigh its costs.

Q26. DID COLUMBIA CONDUCT A COST-BENEFIT ANALYSIS OF THE HCSL PROGRAM BEFORE FILING THE SETTLEMENT?

A26. No. Columbia admitted that it did not conduct a cost-benefit analysis for the HCSL in this proceeding.[40]

Q27. WHY IS IT IMPORTANT THAT THE BENEFITS OF THE HCSL DO NOT OUTWEIGH THE COSTS?

A27. Another way to determine whether an alternative rate plan is just and reasonable, and therefore in the public interest, is to consider the costs and benefits of the program.[41] For example, in the Duke ASRP Order, the PUCO observed that:

> "As a final matter, this Commission emphasizes the fact that R.C. 4929.05 provides that the local distribution company holds the burden of proof to meet the statutory requirements for an alternative rate plan. In this proceeding, by omitting an adequate

[40] See OCC INT 107 (Attachment MH-8).

[41] Duke ASRP Order at 34, 41, 45.

> cost-benefit analysis of the proposed ASRP with its application, Duke did not meet this burden."[42]

Here, Columbia admits that it did not even conduct a cost-benefit analysis of the HCSL. And as explained above, the cost of $125 million is not outweighed by the ability to mitigate such a small risk to service lines. Thus, approving the HCSL program, which is analogous to Duke's ASRP, would be a violation of the regulatory practice and principle of approving such alternative rate plans on the basis of a cost-benefit analysis. It would also harm customers and the public interest by forcing customers to pay a high cost for such a small benefit. That is, customer utility bills would be unjustly and unreasonably increased.

Q28. WHAT WOULD BE THE IMPACT OF EXCLUDING THE HCSL PROGRAM ON THE RATES PROPOSED IN THE STIPULATION?

A28. The proposed settlement specifies a monthly rate cap for residential customers for the years 2018-2022. The following chart shows the impact on the rate cap of removing the HCSL program from the Columbia IRP.

[42] *Duke ASRP Case* at 45.

Investment Year	**2018**	**2019**	**2020**	**2021**	**2022**
Rate Cap With					
HCSL	$11.35	$12.50	$13.70	$14.95	$16.20
Est. HCSL Charge	$2.79	$2.70	$2.61	$2.53	$2.45
Rate Cap Without					
HCSL	$8.56	$9.80	$11.09	$12.42	$13.75

Q29. DOES THE PROPOSED SETTLEMENT, AS A PACKAGE, HARM CUSTOMERS AND THE PUBLIC INTEREST?

A29. Yes, it does. Specifically, as explained above, any minimal benefits that the HCSL program provides to customers and the public interest are greatly outweighed by the costs. Columbia provided no evidence quantifying the benefits that customers can expect to receive in exchange for their $125 million paid to Columbia for this program. The evidence shows that the risk the HCSL is designed to mitigate is essentially non-existent. And, Columbia did not conduct, or include in its Application, a cost-benefit analysis. Approving a program with such little support and with large costs to consumers that far outweigh its advantages (in terms of risk mitigation), does not benefit customers or the public interest and is inconsistent with regulatory principles and practices.

Further, Columbia did not consider any other alternative methods or programs to mitigate the alleged risk that the HCSL is designed to mitigate. Columbia did not explain why the current PUCO pipeline safety requirements are not adequate to mitigate any alleged safety risk on its service lines. Columbia did not demonstrate why it needs accelerated cost collection from consumers through a rider in order to mitigate any alleged safety concerns with its service lines.

For all of these reasons, the HCSL proposal is not in the public interest and does not benefit customers.

Q30. DOES THE PROPOSED SETTLEMENT PACKAGE VIOLATE ANY REGULATORY PRINCIPLE OR PRACTICE?

A30. Yes. As explained above, the excessive costs of the HCSL will make it more difficult for the PUCO to ensure that Columbia's customers are able to obtain reasonably priced gas services, consistent with R.C. 4929.02(A)(1). Requesting approval of a program without considering alternatives or attempting to improve the program violates the regulatory principles explained in the Duke ASRP Order. In addition, approving a program that has costs which outweigh the benefits (and where the utility did not even conduct a cost-benefit analysis) violates the regulatory principles explained in the Duke ASRP Order.

Q31. IS THE PROPOSED STIPULATION A PRODUCT OF SERIOUS BARGAINING AMONG CAPABLE AND KNOWLEDGEABLE PARTIES?

A31. No, it is not. OCC witness Daniel J. Duann addresses this in his testimony.

V. CONCLUSION AND RECOMMENDATION

Q32. WHAT ARE YOUR CONCLUSIONS?

A32. Based on the information, evidence, and arguments presented above, I conclude that the Settlement does not meet the three-pronged test because it includes Columbia's HCSL program.

Q33. WHAT IS YOUR RECOMMENDATION?

A33. I recommend that the PUCO should reject the Settlement. If the PUCO approves the Settlement, it should modify it by eliminating all provisions concerning the HCSL program.

Q34. DOES THIS CONCLUDE YOUR TESTIMONY?

A34. Yes. However, I reserve the right to incorporate new information that may subsequently become available through outstanding discovery or otherwise.

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Direct Testimony of Mohammad Harunuzzaman, Ph.D. on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below this 28th day September 2017.

/s/ Kevin Moore
Kevin Moore
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List of Professional Publications

Papers on Nuclear Safety and Reliability

Nuclear Technology, "Optimization of Standby Safety System Maintenance Schedules in Nuclear Power Plants," 113, 354-367 (March 1996) (with T. Aldemir).

Transactions of the American Nuclear Society, "Optimal Preventive Maintenance of a Nuclear Power Plant Subsystem Using Dynamic Programming," 57, 99-100 (November 1988) (with T. Aldemir).

American Nuclear Society, "Sensitivity of Optimal Maintenance Cost to Reliability Constraints, PSA '96: Probabilistic Safety Assessment," II, 1632-1635 (September 1996) (with T. Aldemir).

Reports and Publications on Public Utility Regulation

The National Regulatory Research Institute, The State of Regulation, An Examination of the Four Utility Sectors, 2001 (with K. Costello, et al.).

The National Regulatory Research Institute, Consumer Benefits from Gas Choice: Empirical Findings from the First Programs, 2000 (with K. Costello).

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The National Regulatory Research Institute, Pipeline Capacity Turnback: Problems and Options, 1997 (with A. M. Rahman).

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The National Regulatory Research Institute, State Commission Regulation of Self-Dealing Power Transactions, 1996 (with K. Costello).

The National Regulatory Research Institute, Integrated Resource Planning for Local Gas Distribution Companies: A Critical Review of Regulatory Policy Issues, 1994 (with M. Islam).

The National Regulatory Research Institute, Regulatory Practices and Innovative Generation Technologies: Problems and Rate-making Approaches, 1994 (with K. Costello, et al.)

The National Regulatory Research Institute, Regulatory Treatment of Electric Utility Clean Air Act Compliance Strategies, Costs and Emission Allowances, 1993 (with K. Rose, A. S. Taylor).

The National Regulatory Research Institute, Public Utility Commission Implementation of the Clean Air Act's Allowance Trading Program, 1992 (with K. Rose, et al.).

The National Regulatory Research Institute, Incentive Regulation for Local Gas Distribution Companies under changing Industry Structure, 1991, (with D. Duann, K. Costello, and S-B Cho.)

The National Regulatory Research Institute, Gas Storage: Strategy, Regulation, and Some Competitive Implications, 1990 (with D. J. Duann, P. A. Nagler and G. Iyyuni).

PUCO Case No. 16-2422-GA-ALT
Staff Data Request Set 1 No. 4
Respondent: Donald P. Ayers

COLUMBIA GAS OF OHIO, INC.
RESPONSE TO STAFF'S DATA REQUESTS
DATED APRIL 12, 2017

Data Request No. 4:

Please provide staff with the following:

Pertaining to Don Ayers' testimony regarding Hazardous Customer Service Lines (HCSL), page3:

a. Please provide the number of HCSL lines that have been replaced by year from 2008 – 2016

b. Please provide the replacement cost per line per year from 2008 – 2016. Please include supporting work papers and a detailed explanation of the calculation.

Response:

Please find the number of HCSL lines replaced and the replacement cost per line by year in the table below.

Year	Number of HCSL Lines	Cost per Line
2008	8,047	$1,200
2009	9,955	$2,314
2010	9,879	$2,218
2011	8,577	$2,899
2012	7,997	$2,804
2013	7,568	$2,804
2014	6,587	$3,276
2015	6,030	$3,414
2016	5,617	$3,774

The cost per line replaced was calculated by dividing the annual investment in hazardous customer service line replacements by the number of lines replaced. Please find the workpaper (Staff DR Set 1 No. 4 - HSCL Cost per Line.xlsx) used to calculate the cost per line attached.

Hazardous Customer Service Lines
Cost per Line

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Service Lines Replaced	8,047	9,955	9,879	8,577	7,997	7,568	6,587	6,030	5,617
Total Annual Investment	$ 9,658,514	$ 23,031,528	$ 21,907,660	$ 24,861,956	$ 22,420,702	$ 21,222,240	$ 21,577,045	$ 20,584,848	$ 21,197,546
Cost per Line	$ 1,200	$ 2,314	$ 2,218	$ 2,899	$ 2,804	$ 2,804	$ 3,276	$ 3,414	$ 3,774

*Service lines replaced and annual investment information was obtained from annual Rider IRP filings.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 6 No. 130
Respondent: Diana M. Beil

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED SEPTEMBER 11, 2017**

INT-130.

Identify how Columbia calculated its projected expenditure of $25 million per year for the HCSL program as proposed in the Stipulation.

RESPONSE:

Columbia projects the annual $25 million spend for the HCSL program based on past experience. For total costs per year, see Staff DR No. 4 at Staff DR Set 1 No. 4 - HSCL Cost per Line.xlsx. Unlike the AMRP, the HCSL program spend is not based on planned work. Columbia repairs or replaces customer service lines when a Hazardous Customer Service Line Leak, as defined by Columbia's tariff, is identified.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 6 No. 123
Respondent: Melissa L. Thompson

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED SEPTEMBER 11, 2017**

INT-123.

Identify all other methods or programs to mitigate the alleged risk that the HCSL is designed to mitigate that Columbia considered before proposing to continue the HCSL.

RESPONSE:

Columbia did not consider other methods or programs to address the risk of hazardous customer service lines prior to filing its application in this docket.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 2 No. 36
Respondent: Donald P. Ayers

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED JUNE 2, 2017**

INT-36.

In reference to the Direct Testimony of Donald Ayers, page 2, lines 34-40, please define the phrase "probable hazard."

RESPONSE:

Columbia does not have a formal definition for "probable hazard"; however, Columbia's technicians in the field have the ability to determine, based on their expertise, what conditions would constitute probable hazards.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 6 No. 106
Respondent: Donald P. Ayers

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED SEPTEMBER 11, 2017**

INT-106.

In reference to the HCSL program as proposed in the Stipulation, for each HCSL line that has been replaced from 2008 to 2016, identify:

a) The material type of each line;
b) The reason that each line was replaced;
c) The leak grade (i.e., first, second, or third degree) of each line that was replaced;
d) The leak cause of each leaking line that was replaced;
e) The amount of non-leaking lines that were replaced;
f) The amount of leaking lines that were replaced;
g) The amount of abandon lines that were replaced.

RESPONSE:

Columbia has consistently tracked this information since 2011, therefore Columbia has provided data from 2011 through 2016.

a) See OCC Set 6 INT-105 Attachment A.xlsx, Columns F & G
b) See OCC Set 6 INT-105 Attachment A.xlsx, Column E
c) See OCC Set 6 INT-105 Attachment A.xlsx, Column D
d) See OCC Set 6 INT-105 Attachment A.xlsx, Column E
e) There were 8,741 services that did not have a DPI associated with them.
f) There were 34,295 services that did have a DPI associated with them.
g) Columbia does not replace abandoned service lines in the Hazardous Customer Service Line Program.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 6 No. 118
Respondent: Donald P. Ayers

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED SEPTEMBER 11, 2017**

INT-118.

Define the term "Distribution Property Investigation" as it relates to repairing or replacing service lines under the IRP?

RESPONSE:

Where Columbia has used the term "Distribution Property Investigation" in prior discovery responses, the term should be "Distribution Plant Inspection." "Distribution Plant Inspection" refers to the investigation, classification and further action processes that are related to monitoring and repairing leaking mains and service lines.

PUCO Case No. 16-2422-GA-ALT
OCC Interrogatories Set 6 No. 107
Respondent: Melissa L. Thompson

**COLUMBIA GAS OF OHIO, INC.
RESPONSE TO THE OFFICE OF THE OHIO
CONSUMERS' COUNSEL'S INTERROGATORIES
DATED SEPTEMBER 11, 2017**

INT-107.

Before filing the Stipulation, did Columbia conduct a cost-benefit analysis of continuing the HCSL program as proposed?

RESPONSE:

Though Columbia did not conduct a cost-benefit analysis of the Hazardous Customer Service Line ("HCSL") Program before filing the Stipulation, continuing the HCSL Program benefits ratepayers by allowing Columbia to repair hazardous service lines without the full expense being borne by the property owner.

BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

OBJECTIONS TO COLUMBIA'S APPLICATION AND THE PUCO STAFF'S REPORT OF INVESTIGATION BY THE OFFICE OF THE OHIO CONSUMERS' COUNSEL

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BEFORE THE
PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

OBJECTIONS TO
COLUMBIA'S APPLICATION AND
THE PUCO STAFF'S REPORT OF INVESTIGATION
BY
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL

I. INTRODUCTION

This case involves the request of Columbia Gas of Ohio, Inc. ("Columbia" or "Utility") to extend its pipeline replacement program for another five-year period, and increase a monthly charge to consumers from $10.20 (in 2017) to approximately $16.70 (in 2022).[1] The Office of the Ohio Consumers' Counsel ("OCC")[2] submits these objections to Columbia's Application (filed on February 27, 2017) and the Public Utilities Commission of Ohio's ("PUCO") Staff Report of Investigation ("Staff Report"), as filed in this case on July 10, 2017.[3]

OCC asks the PUCO to adopt these objections to Columbia's Application and the Staff Report when deciding how much Columbia's customers should pay for gas distribution service. OCC's Objections pertain to rates and issues under the Utility's Application and the Staff Report that are not just and reasonable. These objections meet the specificity requirement of Ohio Admin. Code 4901-1-28.

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[1] Application at 11.

[2] Under R.C. Chapter 4911, the OCC is the statewide representative for all of Duke's 382,000 residential electric utility customers.

[3] See R.C. 4909.19 and Ohio Admin. Code 4901-1-28(B).

Lack of an objection to any aspect of the Staff Report or Application should not preclude OCC from filing further pleadings or comments in this docket. Nor should it limit OCC's cross-examination or introduction of evidence or argument on any issue contained in the Staff Report in the event the PUCO Staff reverses, modifies, or withdraws its position on the issue. OCC reserves the right to amend and/or to supplement its objections in the event that the PUCO Staff reverses, modifies, or withdraws its position on any issue contained in the Staff Report. OCC also reserves the right to file expert testimony, produce fact witnesses, and introduce additional evidence in the event the PUCO schedules an evidentiary hearing.

II. OBJECTIONS TO COLUMBIA'S APPLICATION AND THE PUCO STAFF REPORT

OBJECTION 1: OCC objects to the Staff's failure to recommend that a prudency audit and/or independent review of the efficiency and effectiveness of Columbia's Infrastructure Replacement Program ("IRP") be conducted before proposing that the program be renewed, with customers paying even more money.

The Utility asks its customers to pay an estimated additional $1.3 billion over the next five years to renew the program; however, there has been no demonstration by Columbia that the customer benefits will outweigh or even be commensurate with this large investment. The intent of the IRP is to improve the safety of the Utility's distribution infrastructure by upgrading bare steel and cast iron pipelines that are prone to corrosion and leaking.[4] However, in the program's most recent years, the leak rates have not improved by any significant

[4] Application at 2, 6-7.

amount.[5] In addition, the costs to implement the program have steadily increased.[6]

Because actual leak rates on the Utility's distribution system are not improving and the costs to implement the program are increasing, an independent audit should be performed to ensure that safety of the infrastructure is improving as intended. Specifically, such an audit will aid the PUCO in determining whether the program is efficiently and effectively reducing leaks, improving safety, and minimizing costs per mile and costs per leak avoided. The results of the audit should also assist the PUCO in determining whether the rates consumers are paying under this program are just and reasonable.

OBJECTION 2: OCC objects to Columbia's request to increase the Rider IRP customer charge cap (to $1.30 per month each year from 2018 to 2022). (Application at 11).

Columbia has not provided evidence that shows that increasing the annual rate cap that customers fund from $1.00 to $1.30 per year (which can potentially increase the monthly charge by $6.50 over the five-year period) is necessary, just, reasonable, or in the public interest. The analysis and assumptions that Columbia relied on to justify its proposed rate cap increases were found by the Staff to be faulty and unreliable.[7] Columbia's estimates of the amount of total pipe that needs to be replaced and the costs per mile to replace the pipe are overstated.[8] Further, the rate of return used in determining the rate cap is excessive and unjust

[5] See OCC INT set 2 No. 2 Att. A. Leaks declined from a high of 4462 in 2009 to 3796 in 2010, with a low of 3465 in 2014, but main leaks cleared in 2015 and 2016 was above 3700 and leaks cleared per mile increased. Attachment 1.

[6] See Columbia Direct Testimony of Diana Beil at 6-7, Attach. DMB-1 and Donald Ayers at 5-9.

[7] See Staff Report at 9-12 (Staff states that Columbia's analysis supporting the estimated capital investment that Columbia states it will need to install new pipeline is unreliable. The Staff Report also states that Columbia's analysis of historical costs to support the proposed increase to the annual IRP rate cap relies on an errant assumption).

[8] See Staff Report at 9-12.

and unreasonable. In addition, Columbia has not shown that it needs a rate cap increase. It has not exceeded or even reached the specified rate cap in any of the nine years of the rider's existence.[9] Columbia's requested IRP rate cap increase should not be approved before and without a prudency audit of the current IRP, as discussed in OCC Objection 1.

OBJECTION 3: OCC objects to the Staff 's recommendation to allow the Rider IRP rate cap increase of $1.00 per year from 2018 to 2020 and $1.10 per year from 2021 to 2022. (Staff Report at 12).

The PUCO Staff has not provided sufficient evidence that shows that a $1.00 or $1.10 increase in the rate cap is necessary, just, reasonable, or in the public interest. The analysis that PUCO Staff has relied on in sponsoring its rate cap increase is unsubstantiated. The Staff's estimates of the amount of total pipe that needs to be replaced and the costs per mile to replace the pipe are overstated. In addition, the rate of return used in determining the rate cap is excessive, unjust and unreasonable. Further, Columbia has not shown that it needs a rate cap increase. It has not exceeded or even reached its rate cap in any of the nine years of the program.[10] Therefore, the Staff's recommended IRP rate cap increase should not be approved before and without a prudency audit of the current IRP, as discussed in OCC Objection 1.

OBJECTION 4: OCC objects to Columbia's request to charge consumers $125 million over five years for an accelerated service line replacement program that Columbia calls the "Hazardous Customer Service Line" ("HCSL") program. (Application at 6-7). The PUCO just

[9] See Direct Testimony of Melissa Thompson at 4.

[10] See Direct Testimony of Melissa Thompson at 4.

last year denied a similar program that Duke Energy Ohio, Inc. proposed.[11] The PUCO should, consistent with its decision in the Duke ASRP case, not allow Columbia to continue the HCSL.

The Utility's request is unreasonable and unlawful because the evidence does not support the continued approval of the HCSL program. Columbia failed to provide sufficient evidence to show that the program provides benefits to public safety that are commensurate with its substantial costs ($125 million). Columbia failed to prove that it considered alternative methods or programs to mitigate the alleged risk. Columbia failed to provide any evidence regarding the level of risk to the system and/or public, addressing the likelihood of harm as well as the associated potential harm. Finally, Columbia failed to explain why the PUCO's pipeline safety regulations, codified in O.A.C. 4901:1-16-04, if followed, are not sufficient to resolve any alleged risk currently posed by customer service lines on Columbia's distribution system.

OBJECTION 5: OCC objects to the Staff's failure to deny or even address Columbia's request to charge consumers an additional $125 million over five years for an accelerated service line replacement program (HCSL program), for the reasons discussed in Objection 4.

OBJECTION 6: OCC objects to the Staff 's failure to direct Columbia to report more thoroughly on the performance metrics of the IRP (which customers pay for) over the next five years.

Specifically, the Staff Report should have directed Columbia to collect, at a minimum, the following information: (1) leak history associated with mains replaced (i.e., for each Job Order number under each Project ID for each year of the program from 2018 forward, the five-year history of leaks (by grade and year) on the mains that were replaced or retired under that job

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[11] *In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Alternative Rate Plan Pursuant to R.C. 4929.05 for an Accelerated Service Line Replacement Program*, Case No. 14-1622-GA-ALT, Opinion and Order (Oct. 26, 2016) ("Duke ASRP case").

order); (2) leak history after replacement (i.e., for each Job Order under each Project ID in each year of the program from 2018 forward, the subsequent leaks (by grade and year) on the mains that were replaced or retired under that job order); (3) cost effectiveness (i.e., for each Job Order under each Project ID in each year, the total cost of the job order, once complete, divided by the five-year average number of leaks on the mains that were replaced or retired under that job order); (4) variance explanations (i.e., for each Job Order under each Project ID in each year for which the cost per leak addressed (the ratio in the cost effectiveness report described above) is higher than a threshold number (e.g., $1,000,000 per average leak), provide an explanation of what factors might have led to the high cost or low leak rate involved).

Without such performance metrics, it is not possible to determine whether the IRP is being implemented in a just and reasonable way.

OBJECTION 7: OCC objects to the amount and calculation of Operation and Maintenance expense ("O&M") savings that Columbia guarantees will be credited to consumers. (Application at 10). The O&M savings, which are supposed to be passed back to customers, should be much higher than the $1.25 million that Columbia proposed, given the enormous amount of money that is being spent, with customers paying a return on and of such huge investment.

At this time, Columbia guarantees to pass back a paltry $1.25 million to customers in future Rider adjustment cases. If Columbia's actual savings exceed the $1.25 million, then the actual O&M savings will be credited to customers. But, since the inception of the IRP program to date, the O&M savings from the program have not been greater than the minimum $1.25 million. As pointed out by Staff, other Ohio gas utilities with IRP programs very similar to Columbia's program, have produced much greater savings.[12] OCC agrees with Staff that if Columbia's IRP program has been successful in reducing the number of leaks, as the Utility indicated,[13] the annual O&M savings should have increased considerably. OCC objects to the Utility's proposal to continue to pass through a minimal amount of savings to customers when the program has cost customers hundreds of millions of dollars.

OBJECTION 8: OCC objects to Columbia's request to collect its IRP costs from customers with a return on rate base (profits) of 10.95 percent (i.e., an 8.12 percent rate of return plus a tax gross-up factor). (Application, Exhibit A at 9).

In its Application and supporting testimonies, Columbia has not carried its burden of proof to show that charging customers for a rate of return of 10.95 percent on rate base is just and reasonable at this time. Columbia has not provided any documentation that supports this proposed rate of return. This proposed rate of return of 10.95% is apparently derived from the rate of return approved in the 2008 Columbia alternative regulation rate case.[14] Moreover, under the proposed IRP rider, shareholders of Columbia have limited risk that does not justify the requested high return. Columbia needs to explain why it is just and reasonable for customers to fund this high rate of return (approved in 2008) for the next five years (from 2018 through 2022), given the significant decline in the cost of capital over the last ten years. Columbia has not done so in its Application.

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[12] Staff Report at 9.

[13] *Id.* at 9, citing Columbia's response to OCC INT's 2-24, 26, and 28 (June 23, 2017).

[14] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges,* Case No. 08-0073-GA-ALT, et al. Opinion and Order (Dec. 3, 2008).

OBJECTION 9: OCC objects to the Staff Report's failure to adjust the rate of return of 10.95 percent proposed by Columbia. The Staff should have recommended a lower rate of return, which would mean lower utility bills for consumers.

This proposed rate of return of 10.95 percent by Columbia is unreasonable, and would significantly increases the costs of the IRP programs borne by Columbia's customers. This 10.95 percent rate of return was approved by the PUCO in a 2008 alternative regulation rate case.[15] It was based largely on the prevailing financial market and economic conditions ten years ago. It far exceeds the average rate of return authorized for gas utilities in recent years. It should be adjusted downward based current financial market and economic conditions as well as the business and financial risks facing Columbia at this time.

OBJECTION 10: OCC objects to Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce the Maintenance of Mains expenses (Account 887) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's main lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[16] However, over the life of the program, the annual maintenance of main lines expenses has increased not decreased. This shows that the IRP is not effective at reducing main lines expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

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[15] See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation and for a Change in its Rates and Charges,* Case No. 08-0073-GA-ALT, Opinion and Order (Dec. 3, 2008).

[16] Direct Testimony of Diana Beil at 3-4, Case No. 16-2422-GA-ALT.

OBJECTION 11: OCC Objects to the Staff's failure to challenge Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce Maintenance of Mains expenses (Account 887) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's main lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[17] However, over the life of the program, the annual maintenance of main lines expenses has increased, not decreased. The Staff should have required Columbia to explain why the IRP has not been effective at reducing main line expenses, and why such expenses are increasing and not decreasing. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

OBJECTION 12: OCC Objects to Columbia's request to continue the IRP even though the IRP has failed to reduce Maintenance of Services expenses (Account 892) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's service lines by replacing older unprotected metallic lines with new plastic or protected steel lines.[18] However, over the life of the program, the annual maintenance of service lines expenses has increased, not decreased. This shows that the IRP is not effective at reducing service line expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

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[17] Direct Testimony of Diana Beil at 3-4, Case No. 16-2422-GA-ALT.

[18] Direct Testimony of Diana Beil at 3-4. Case No. 16-2422-GA-ALT.

OBJECTION 13: OCC Objects to the Staff's failure to challenge Columbia's request to continue the IRP because, despite the significant spending through the IRP, Columbia has failed to reduce Maintenance of Services expenses (Account 892) over the nine-year life of the program.

One of the objectives of the IRP was to reduce the amount of maintenance costs for Columbia's service lines by replacing older unprotected metallic lines with new plastic or protected steel lines. However, over the life of the program, the annual maintenance of service lines expenses has increased, not decreased. This shows that the IRP is not effective at reducing service line expenses. This is important to consumers because reduced main line expenses should be part of the annual savings passed back to consumers.

OBJECTION 14: OCC objects to Columbia's failure to reduce or, in the alternative, justify the amount of non-priority pipe that it is proposing to replace under the IRP. (Application at 8). The amount of non-priority pipe that Columbia is replacing appears to be excessive and may be contributing to the need to collect dramatic and unnecessary increases in IRP costs from customers. Replacing too much non-priority pipe is contributing to consumers having to pay unjust and unreasonable rates under Rider IRP. It may also be contributing to the need to increase the caps for IRP spending.

OBJECTION 15: OCC objects to the Staff 's failure to recommend that Columbia should reduce or, in the alternative, justify the amount of non-priority pipe that it is proposing to replace under the IRP. (Application at 8). The amount of non-priority pipe that Columbia is replacing appears to be excessive and may be contributing to the need to collect dramatic and unnecessary increases in IRP costs from customers. Replacing too much non-priority pipe is contributing to consumers having to pay unjust and unreasonable rates under Rider IRP. It may also be contributing to the need to increase the caps for IRP spending.

III. CONCLUSION

In conclusion, OCC objects to the above-mentioned provisions of Columbia's application and the PUCO's Staff Report because they are not just and reasonable. OCC asks the PUCO to adopt these objections to Columbia's Application and the Staff Report when deciding how much Columbia's customers should pay for gas distribution service.

Respectfully submitted,

BRUCE WESTON (0016973)
OHIO CONSUMERS' COUNSEL

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CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Objections* was served by electronic transmission upon the parties below this 14th day of August 2017.

/s/ Kevin F. Moore
Kevin F. Moore
Assistant Consumers' Counsel

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STAFF Ex. 1

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Ohio | Public Utilities Commission

Asim Z. Haque, Chairman

Commissioners

Lynn Slaby
M. Beth Trombold
Thomas W. Johnson
Lawrence K. Friedeman

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PUCO

March 24, 2017

Mr. Eric B. Gallon
Porter Wright Morris & Arthur LLP
41 South High Street
Columbus, OH 43215

Re: Case No. 16-2422-GA-ALT

Dear Mr. Gallon:

In compliance with Commission Rule 4901:1-19-07 (A)(1), this letter is to inform you that the application filed by Columbia Gas of Ohio, Inc. on February 27, 2017 in the above referenced case is in compliance with Rule 4901:1-19-06 which establishes the filing requirements for alternative rate plan applications filed pursuant to section 4929.05 of the Ohio Revised Code.

Sincerely,

Patrick Donlon, Director
Rates and Analysis Department

Cc: Stephen B. Seiple, Asst, General Counsel, Columbia Gas of Ohio, Inc.
Joseph M. Clark, Sr. Counsel, Columbia Gas of Ohio, Inc.

STAFF Ex. 2

FILE

A Report by the Staff of the Public Utilities Commission of Ohio

Columbia Gas of Ohio, Inc.
Case Number 16-2422-GA-ALT

July 10, 2017

Ohio | Public Utilities Commission

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation.	)))	Case No. 16-2422-GA-ALT

Asim Z. Haque, Chairman
M. Beth Trombold, Commissioner
Thomas W. Johnson, Commissioner
Lawrence K. Friedeman, Commissioner
Daniel R. Conway, Commissioner

To the Honorable Commission:

In accordance with the provisions of Ohio Adm. Code 4901:1-19-07, the Commission's Staff submits its investigation findings and recommendations within the Staff Report.

The Staff Report was prepared by the Commission's Rates & Analysis Department. The Staff Report is intended to present for the Commission's consideration, the results of the Staff's investigation. It does not purport to reflect the views of the Commission nor should any party to the above captioned proceeding consider the Commission as bound in any manner by the representations or recommendations set forth therein. The Staff Report, however, is legally cognizable evidence upon which the Commission may rely in reaching a decision in this matter. (See *Lindsey v. Pub. Util. Comm.*, 111 Ohio St. 6 (1924)).

Respectfully submitted,

Patrick Donlon
Director
Rates & Analysis Department

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Columbia Gas of Ohio, Inc.
Case No. 16-2422-GA-ALT

Introduction

In accordance with R.C. 4929.05, 4929.051(B), and 4929.11, on February 27, 2017, Columbia Gas of Ohio, Inc. (Columbia or Company) filed an application (Application) in the above captioned case seeking approval by the Public Utilities Commission of Ohio (Commission) of an alternative rate plan to continue its natural gas Infrastructure Replacement Program (IRP or Program) and IRP Rider for a five-year period, covering investment years 2018 through 2022. The Company proposes to keep the scope, structure, and timeframes of the IRP the same as the IRP the Commission approved in Case No. 11-5515-GA-ALT (11-5515 case), the case where the IRP Program was most recently reauthorized. The only change that the Company recommends is an increase to the residential rate caps that were adopted in that case. Columbia proposes that the $1.00 cap on annual increases to Rider IRP for the Small General Service (SGS) class of customers (includes residential and smaller commercial customers) be increased to $1.30. The Staff of the Public Utilities Commission of Ohio (Staff) has completed its investigation of Columbia's Application and makes the conclusions and recommendations set forth below.

Background

Columbia is an Ohio corporation engaged in the business of providing natural gas service to approximately 1.4 million customers in 60 of Ohio's 88 counties. As such, Columbia is a public utility as defined by R.C. 4905.02 and 4905.03 and is subject to the Commission's jurisdiction. Columbia filed its Application in this case pursuant to R.C. 4929.05, 4929.051(B), and 4929.11. R.C. 4929.05 specifically governs approval of alternative rate plans for natural gas companies. This section provides that the Commission shall approve an alternative rate plan if the applying natural gas company sufficiently demonstrates, and the Commission finds, that the natural gas company: (1) is in compliance with R.C. 4905.35, prohibiting discriminatory or preferential treatment in the provision of its services, (2) is currently and is expected to continue to be in substantial compliance with R.C. 4929.02 setting forth the State's policy relating to natural gas goods and services, and (3) has proposed an alternative rate plan that is just and reasonable.[1] The natural gas company has the burden of proof to show that its proposed alternative rate plan meets all of the preceding requirements.[2] In addition, a natural gas company's application for an alternative rate plan filed pursuant to R.C. 4929.05 must comply with applicable Commission rules governing approval and implementation of alternative rate plans, most notably Ohio Adm. Code 4901:1-19-01, 4901:1-19-06, and 4901:1-19-07.

Columbia's IRP was first authorized by a Commission Opinion and Order issued on October 15, 2008 in Case No. 08-072-GA-AIR, *et al* (2008 Rate Case Order), the Company's most recent base rate case. Columbia's IRP initially called for replacement of 4,050 miles of bare steel, cast iron, and wrought iron (BS/CI) pipelines in its distribution system over a 25-year period (commencing in 2008) via the Accelerated Mains Replacement Program (AMRP). In addition, Columbia

1 R.C. 4929.05(A).
2 R.C. 4929.05(B).

estimated that it would replace approximately 360,000 steel service lines under the AMRP. The 2008 Rate Case Order also authorized Columbia to recover costs incurred under its Riser Replacement Program (RRP) to replace approximately 320,000 natural gas risers that had been deemed "prone to fail" and approved for replacement over a three-year period in a Commission Opinion and Order issued in Case Nos. 07-478-GA-UNC and 07-237-GA-AAM. The RRP also included recovery of Columbia's costs to replace and assume ownership and ongoing responsibility for all customer-owned service lines when such lines were separated from service in order to repair leaks. The Commission further authorized Columbia to recover the costs of installing automated meter reading devices (AMRD) on all residential and commercial meters in its system over five years (commencing in 2009) under the Company's AMRD Program.

The 2008 Rate Case Order provided that costs for all three programs (AMRP, RRP, and AMRD) would be recovered via Rider IRP and established a process for annual review of Columbia applications to increase Rider IRP. This process called for Columbia to file a pre-filing notice containing financial schedules with a combination of actual and estimated data by November 30 each year followed by an application submitted by February 28 of the succeeding year. The updated application was to contain updated final schedules supporting rates to go into effect on May 1 of that year. The process provided opportunities for Staff and intervening parties to review and comment on the Company's applications. The 2008 Rate Case Order authorized the IRP for an initial five-year period, 2008 through 2012, and established a cap on annual IRP Rider increases. For the first recovery year of the program in 2009, IRP Rider rates could not exceed $1.10 per customer per month for the SGS class of customers. In 2010, the total rate was capped at $2.20 per SGS customer per month and increases for years 2011-2013 were capped at an additional $1.00 per SGS customer per month each year.

On May 8, 2012 in Case No. 11-5515-GA-ALT, Columbia filed an application for authority to continue its IRP for another five-year period, 2013 through 2017. On November 28, 2012, the Commission reauthorized the IRP for the 2013-2017 period through approval of a Stipulation and Recommendation (2012 Stipulation) filed by the majority of the parties in the case. The approved 2012 Stipulation also provided that the process for filing, review, and approval of annual IRP applications would remain the same as previously approved in the 2008 Rate Case Order and established new caps on annual increases to Rider IRP. The new caps for the 2013-2017 period (to be recovered in years 2014 through 2018) were set at $6.20 in 2013 and set to rise $1.00 per year to $10.20 in 2017. The 2012 Stipulation also provided for several changes to the scope of the AMRP segment of the IRP as well as other modifications and agreements, including the following:[3]

- The parties agreed that the scope of the 25-year AMRP component of the IRP was primarily for the replacement of approximately 4,100 miles of BS/CI pipe and that, by December 31, 2017, Columbia is expected to have replaced approximately 1,640 miles of BS/CI pipe.[4]

3 The summary is provided for convenience and is not intended to supplant or alter the Stipulation as approved by the Commission in Case No. 11-5515-GA-ALT.

4 4,100 miles of BS/CI pipe divided by the 25 years of the AMRP equals 164 miles per year. By the end of 2017, the AMRP will have been in existence for 10 years. Consequently, 164 miles per year multiplied by 10 years results in 1,640 miles.

If Columbia does not meet the 1,640 miles goal, then the costs to replace the shortfall cannot be recovered through Rider IRP.

- The scope of the AMRP was modified to expressly include interspersed sections of non-priority pipe (i.e., any pipe that is not BS/CI, wrought iron, or unprotected coated steel pipe which was collectively termed "priority pipe") when, in the course of a BS/CI replacement project, it is more economical to replace such pipe than it is to tie into the interspersed sections up to certain limits. The limits were set at 435 feet of interspersed 2-inch diameter pipe, 365 feet of 4-inch pipe, 250 feet of 6-inch pipe, and 205 feet of 8-inch pipe.

- The scope of the AMRP was modified to expressly include first generation plastic pipe (known as "Aldyl-A" plastic pipe) when such pipe was associated with priority pipe replacement projects up to a limit of 5% of the total AMRP footage replaced in the same year.

- The scope of the AMRP was modified to expressly include steel pipe installed and field-coated before 1955 (termed "ineffectively coated" steel pipe) and treat it as bare steel pipe. For field-coated pipe that was installed after 1955, Columbia was to conduct electric conductivity tests and replace any pipe found to be ineffectively coated in accordance with the Program. The cost of the tests will be recovered via the IRP Rider when pipe segments are determined to be ineffectively coated and replaced. Costs for testing pipe segments that are determined to be effectively coated will not be recovered under the Program.

- Costs for system improvements will be recovered in the IRP Rider only if the improvements serve the same role as the priority pipe replaced and cost no more to replace than similarly sized priority pipe.

- The cost of moving inside meters to outside locations were to be capitalized and recovered via the IRP Rider when such meters were connected to priority pipe that is replaced under the Program and the Company increases the operating pressure of the replaced service lines connected to the meters to regulated pressure (i.e., greater than 1 psig) within two years of the replacement.

- Costs associated with governmental relocation projects can be included in Rider IRP only if plastic pipe associated with the relocation is less than or equal to 25% of the total footage relocated.

- The operations and maintenance (O&M) savings mechanism was modified to compare annual expenses incurred for leak inspection, leak repair, general/other, and one-half of supervision and engineering activities against baseline values for the same activities for the 12 months ended on September 30, 2008. Only activities showing savings were included in the IRP revenue requirement calculation. In addition, the greater of the actual savings realized or $750,000 for 2012 expenditures, $1.0 million for 2013 expenditures, and $1.25 million for expenditures in 2014-2016 was to be included in the annual revenue requirement calculations.

- Columbia agreed to complete AMRD installations by December 31, 2013 and that costs of installing any AMRDs after December 31, 2013 would not be recovered in the IRP Rider.

- Columbia agreed to continue to fund a customer assistance fund that had been approved in the 2008 Rate Case Order and was originally scheduled to terminate after the 2012-2013 heating season through the 2017-2018 heating season. Columbia agreed to provide $512,500 per heating season for a total five-year contribution of $2,562,500. The fund was to be operated in conjunction with the Ohio Development Services Agency and its associated network agencies to provide customer assistance through the Emergency Home Energy Assistance Program.

In this case, Columbia filed notice of its intent to file an application for approval to continue the IRP on December 27, 2016, and filed its Application on February 27, 2017. Pursuant to Ohio Adm. Code 4901:1-19-07(A)(1), on March 24, 2017 the Director of the Public Utilities Commission of Ohio's (PUCO) Rates & Analysis Department filed a letter in the case indicating that Columbia's Application complies with the Commission's alternative rate plan filing rules. On April 6, 2017, an Attorney Examiner assigned to this case issued an Entry establishing the following procedural schedule:

- April 19, 2017 – Deadline for filing of motions to intervene

- July 10, 2017 – Deadline for filing of the Staff Report

- August 9, 2017 – Deadline for filing objections to the Staff Report or Columbia's Application

On April 6, 2017, the Attorney Examiner granted motions to intervene in the case by the Office of the Ohio Consumers' Counsel (OCC), Ohio Partners for Affordable Energy (OPAE), and Industrial Energy Users-Ohio (IEU-Ohio).

Columbia's IRP Progress

Columbia reports in its Application that by the end of the current IRP authorization period ending on December 31, 2017 it plans to have replaced 1,640 miles of priority pipe[5] and 200,000 associated service lines. In addition, it reports that, through 2016, it has repaired or replaced a total of 256,989 customer service lines under the IRP. Columbia also reports that it completed replacement of all prone-to-fail risers in its system in June 2011and completed its AMRD Program at the end of 2013. The Company notes that it will continue to include ongoing costs for the risers and AMRD Programs in future IRP applications until the costs of the Programs are included in the Company's base rates during its next base rate case.

Columbia's Application and Proposed Changes to the IRP

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[5] In Footnote 48 on page 7 of the Application, Columbia states that the reported 1,640 miles of priority pipe includes 155 miles of unprotected steel. Staff does not concede that including unprotected steel would count towards the 1,640 miles to be replaced as described in Section 4 (page 3) of the approved Stipulation in Case No. 11-5515-GA-ALT. This issue can be resolved when Columbia files its next annual IRP recovery application.

In its Application, Columbia requests that the Commission reauthorize its IRP for another five-year period, covering investment years 2018 through 2022 (recovery years 2019-2023). The Company maintains that its IRP meets all of the legislative requirements for approval of alternative rate plans set forth in the Revised Code, and that its Application and supporting documents comply with the Commission's rules governing applications for alternative rate plans. Further, Columbia requests that the Commission approve the IRP with the same terms, conditions, procedures, and processes that the Commission adopted in Case No. 11-5515-GA-ALT with a change the cap on annual Rider IRP rate increases. Columbia requests that the current cap of $1.00 per SGS customer per month on annual IRP Rider increases be increased to $1.30 per SGS customer per month.

Columbia supports the proposed five-year IRP renewal period by pointing out that the Commission authorized the IRP for an initial five-year period in Case No. 08-072-GA-AIR and subsequently reauthorized the Program for a second five-year period in Case No. 11-5515-GA-ALT. The Company maintains that the IRP is meeting its objective of replacing BS/CI and other priority pipe on an accelerated basis (over 25 years) and that the IRP complies with the legislative requirements for approval of alternative rate plans.

The Company supports its contention that the IRP comports with the legislative requirements governing approval of alternative rate plans by addressing each statutory provision related to approval of alternative rate plans. In regards to R.C. 4905.35 (prohibiting discriminatory or preferential treatment in the provision of public utility and bundled services), Columbia states that its public utility services are offered and provided to all similarly situated persons and customers on a comparable and nondiscriminatory basis and it provided a copy of its Standards of Conduct (current Tariff Sheet No. 22, Section VII) as verification. The Company also states that it presently does not offer any unregulated services that are bundled with its regulated utility services. Regarding current and ongoing substantial compliance with the State policies enumerated in R.C. 4929.02, Columbia maintains that its Gas Transportation Service Program and CHOICE Program both offer unbundled and comparable natural gas goods and services that permit customers to choose the supplier, price, terms, and conditions that meet their needs. In keeping with the State polices, the Company states that these programs promote diversity of natural gas supplies and suppliers by giving customers effective control over the selection of supplies and suppliers. Columbia further maintains that extending Rider IRP will continue to advance the State's policies by enabling it to continue to timely recover investments for replacing aging infrastructure on an accelerated basis towards continued provision of adequate, reliable, and reasonably natural gas goods and services. In addition, the Company states that it has worked proactively with stakeholders in Ohio to implement unbundled and ancillary service offerings that provide customers options towards meeting their natural gas needs, including programs such as the Standard Service Offer (SSO) and Standard Choice Offer (SCO) auction process for procurement of natural gas commodity supplies. Regarding the requirements in R.C. 4929.05(A)(3) that alternative rate plans must be just and reasonable, Columbia maintains that reauthorization of the IRP will enable it to continue to improve the safety and reliability of its system and improve customer satisfaction and convenience. It further suggests that the annual rate review provided in the IRP process will ensure that the IRP Rider rate will remain just and reasonable. The Company also suggests that, since customers are currently paying approximately 30% less for natural gas service (on a total bill basis) than they were at the end of its last base rate case (in 2008), now is the optimal time to invest in infrastructure.

Columbia points to success of the IRP in meeting its goals in support of reauthorizing the Program under the same processes, terms, conditions, and agreements that were adopted in Case No. 11-5515-GA-ALT. In support of its proposed change to the Program to increase the rate cap on annual Rider IRP increases, the Company states that it has experienced an average annual increase in the AMRP component of the IRP of 6.47%. Columbia maintains that when this annual percentage increase is used to estimate the capital necessary to install an additional 820 miles of priority pipe over the five-year IRP renewal period (164 miles per year), then the requested cap increase is proven necessary. Columbia proposes that the annual cap on Rider IRP be increased from the currently approved $1.00 per SGS customer per month to $1.30 per SGS customer per month. This proposed increase would raise the IRP monthly charge for SGS customers from the currently approved $10.20 per SGS customer per month for costs incurred in 2017 to 11.50 per SGS customer per month for costs incurred in 2018. Annual increases for costs incurred in 2019 through 2022 would then increase by $1.30 per SGS customer per month yielding proposed monthly charges for the SGS class of $12.80 in 2019, $14.10 in 2020, $15.40 in 2021, and $16.70 in 2022.

Columbia claims that it has experienced and expects to continue to experience significant annual cost increases for replacing mains and service lines under the AMRP. It further claims that these historical costs increases will require additional capital investments and increases to the annual IRP Rider cap. The Company bolsters these claims with the testimony of Donald Ayers, the Company's Director of Construction, and Diana M. Beil, the Company's Regulatory Programs Manager.[6] Mr. Ayers points to annual increases in per mile costs for pipeline replacement restoration, directional boring, and video locating of sewer lines as examples of increasing cost trends that will require increased capital investments and future increases the Rider IRP rate cap. He states his opinion that pipeline replacement costs are likely to continue to trend upward. In addition, he notes that Columbia's current contracts with its blanket construction contractors will expire at the end of 2020 and must be renegotiated for new prices to take effect in 2021. He suggests that both the increasing trend in pipeline replacement costs and new blanket construction contracts with contractors will continue to drive IRP costs upward during the 2018-2022 renewal period. Ms. Beil examines Columbia's historical year-to-year per mile cost changes to determine an average annual increase in AMRP costs of 15.57% from the beginning of the Program through 2016 and 6.47% for the 2013 through 2016 period. Ms. Beil states that Columbia believes that the 2013-2016 period is more representative of what is more likely to happen during the 2018-2022 renewal period because this period eliminates abnormal changes in the Program's early years, represents years when the Program was more mature and stable, and includes the most recent contract renegotiation with the Company's blanket construction contractors, which took effect in 2016. Therefore, the average 6.47% annual cost increase from the 2013-2016 period was used to estimate the capital necessary to install 820 miles of priority pipe during the renewal period and develop the Company's proposed maximum IRP Rider rates.

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6 See *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of an Alternative Form of Regulation*, Case No. 16-2422-GA-ALT, Prepared Direct Testimony of Donald Ayers, Prepared Direct Testimony of Diana M. Beil (Feb. 27, 2017).

Staff's Investigation

Staff investigated Columbia's proposal to renew the IRP for another five-year period as approved by the Commission in Case No. 11-5515-GA-ALT and its proposal to increase the annual IRP Rider cap by reviewing the Company's Application and supporting testimony, issuing data requests, conducting follow-up meetings with Columbia personnel responsible for implementing the IRP, and issuing follow-up information requests when necessary. Based on this investigation, Staff makes the conclusions and recommendations by topic area set forth below.

Staff's Conclusions and Recommendations by Topic Area

IRP Term

Columbia is requesting that the Commission authorize the IRP for a new five-year term covering investment years 2018-2022. The Company states that the IRP is on track to complete replacement of BS/CI and other priority pipe within its system by the end of 2033. Staff agrees with the Company's assessment. The Commission initially authorized the IRP for a five-year period in Case No. 08-072-GA-AIR *et al* and subsequently reauthorized the Program for another five-year period in Case No. 11-5515-GA-ALT. In Staff's opinion, the five-year cycle for IRP renewal provides an appropriate time frame to enable Columbia to engage in long-term planning and control costs through securing long-term contracts with its construction contractors while still affording opportunities for mid-course reviews and modifications. Therefore, Staff recommends that the Commission reauthorize the IRP for the 2018 through 2022 period.

Legislative Compliance and Commission Rule Requirements for Approval of an Alternative Rate Plan

Columbia recommends that the Commission find that its plan to continue the IRP for another five years complies with the legislative requirements for approving alternative rate plans and that its Application and supporting documents in this case comply with applicable Commission rules governing alternative rate plan applications. Regarding the Application's compliance with the Commission's rules governing alternative rate plan applications, Staff agrees that it does. In a letter filed in this case on March 24, 2017, the Director of the PUCO's Rates & Analysis Department stated Staff's opinion that Columbia's Application comports with applicable Commission rules for alternative rate plans. Staff also agrees that Columbia and the IRP are in compliance with R.C. 4905.35, prohibiting discriminatory or preferential treatment in the provision of its services. Staff found no evidence that Columbia unduly discriminates or provides or intends to provide preferential treatment in administration of its IRP. Similarly, in Staff's opinion, Columbia's current IRP is in compliance with the State policies established in R.C. 4929.02. However, as discussed in more detail below, it is Staff's position that Columbia's proposal to increase the annual IRP Rider rate cap to $1.30 per SGS customer per month and plan to maintain the current methodology for determining O&M savings used in the annual IRP revenue requirement calculation do not comply with the provision in R.C. 4929.02(A)(1) regarding reasonably priced natural gas services or R.C. 4929.05(A)(3) requiring that alternative rate plans be just and reasonable.

Staff recommends that the Commission find that Columbia's Application is in Compliance with the Commission rules governing alternative rate plan applications and that Columbia and the current IRP is in compliance with R.C. 4905.35, prohibiting discriminatory or preferential treatment. In addition, with adoption of the modifications recommended below concerning the IRP Rider rate cap and methodology for determining O&M savings, Staff would then recommend that the Commission find that Columbia's IRP proposal in this case is in compliance with R.C. 4929.02 and 4929.05(A)(3).

Keeping the IRP Terms, Conditions, Procedures, and Agreements the Same as Approved in Case No. 11-5515-GA-ALT

Except for changing the IRP Rider rate cap, Columbia proposes that the Commission reauthorize the IRP under the same terms, conditions, procedures, and agreements that were approved with adoption of the 2012 Stipulation in Case No. 11-5515-GA-ALT. Staff largely agrees with continuing the Company's previously authorized IRP with some exceptions. Staff does not agree with continuing the methodology for determining the O&M savings or the minimum O&M savings provided in the 2012 Stipulation.

The additions to the IRP scope and corresponding limitations on the new additions agreed to in the 2012 Stipulation have enhanced safety while not adding significantly to the Program's costs. Columbia reports that it is on pace to complete replacing the BS/CI and related priority pipe within the Program's original 25-year period and that its annual Program rate increases have consistently come in under the annual rate caps. In addition, the Program's process for annual review of each year's IRP investments and resulting rates works well and provides for effective oversight. Also, Columbia's commitment to continue to provide funds to a fund established to aid low income customers when other sources of aid have been exhausted provides important benefits to customers. Therefore, Staff supports the Commission's reauthorization of the IRP for a new five-year period under most of the same terms, conditions, procedures, and agreements that were adopted in the 2012 Stipulation.

Staff does not support keeping the same methodology for determining the O&M savings that will be passed back to customers through reductions to the annual IRP revenue requirement or Columbia's proposal to keep the minimum O&M savings at $1.25 million per year. The current methodology and minimum savings run counter to the Commission's expectations for O&M savings produced by mature accelerated mains replacement programs and are insufficient when compared to other similar replacement programs.

Columbia has costs for activities such as leak-surveillance, leak-repair, and related supervision and engineering built into customers' base rates that were last set in 2008. These costs are reduced as formerly leaking and at-risk BS/CI pipelines are replaced with new non-leaking plastic and protected steel pipe under the IRP. These "O&M savings" are passed back to customers in the form of a reduction to the annual IRP revenue requirement since base rates are not lowered to reflect the avoided costs that are still being collected from customers. As described above, the approved 2012 Stipulation provided that Columbia will compare its actual annual expenses incurred for leak inspection, leak repair, general/other, and one-half of supervision and engineering activities against baseline values for the same activities set in 2008. The Company then includes the better of its actual savings realized or an agreed upon minimum of $1.25 million as a reduction to the annual IRP revenue requirement.

The current O&M savings process did not produce actual O&M savings amounts greater than the guaranteed minimum amount of savings thus far for the 2013-2017 period covered in the 2012 Stipulation. The minimum savings amount is insufficient compared to other similar pipeline replacement programs. Columbia and all of the gas utilities with accelerated replacement programs have consistently argued that O&M savings should increase as their programs mature and more miles of BS/CI are replaced as long as base rates are not reset. This argument is intuitive and has been demonstrated in other utilities' replacement programs. For example, Dominion East Ohio Gas (Dominion) has a program very similar in scope as Columbia's AMRP that is on the same time schedule. Dominion uses a similar methodology to compute the O&M savings reductions to its annual revenue requirement calculations, but Dominion averaged more than $3.2 million in savings per year for the 2013-2016 time period compared to Columbia's current and proposed $1.25 million per year. Similarly, in the first five years of its accelerated replacement program, Duke (which had a much smaller program) averaged more than $1.7 million in savings per year.

Columbia's AMRP has been successful in reducing the number of leaks reported on Columbia's system. For example, in a response to OCC interrogatories in this case,[7] Columbia reported that it had a total of 4,871 leaks in 2012 for all leak types (Grades 1, 2, and 3) versus 3,859 in 2016. Fewer leaks to monitor and fewer leaks to repair should result in increased O&M savings. Yet, at the end of the proposed IRP renewal period in 2022 Columbia will have completed 15 years of its original 25-year program (60 % complete), but its annual O&M savings will still not have attained the levels that Duke achieved in its first five years (when it was approximately 33% complete). Staff recommends that the Commission direct Columbia to work with Staff and interested parties to ascertain the reasons why Columbia is not achieving O&M savings results comparable to other utilities and to recommend a new methodology prior to January 1, 2018, which is the first day of the proposed IRP renewal period.

Columbia's Proposal to Increase the Rider IRP Rate Cap

Staff also does not agree with Columbia's proposal to increase the annual Rider IRP rate cap. In Staff's opinion, the available evidence does not support such a large cap increase (i.e., from $1.00 per SGS customer per month to $1.30 per SGS customer per month, which is a 30% increase) for a number of reasons. The first, and perhaps most salient, reason is that, despite all of the historical cost increase that Columbia points to as support for raising the IRP Rider rate cap, such increases have not caused Columbia to exceed the current rate cap. In fact, Columbia has never even reached its allowed rate cap in any year of the IRP. Staff agrees with Columbia that the 2013-2016 historical time period is likely the most representative period for estimating what might happen to IRP costs through the proposed renewal period, but even during this period Columbia averaged $0.44 per year below the applicable annual rate caps. In the most recent IRP filing in 2016, the Company's IRP Rider rate was $0.24 below the allowed $9.20 per month rate for SGS customers despite the facts that the Company installed approximately seven more miles of pipe than the

7 Columbia responses to OCC Interrogatories Set 2, Nos. 24, 26, and 28 (June 23, 2017).

average for the 2013-2016 period and increased contractor prices that had been negotiated in 2015 were in effect for all of 2016.

Because Columbia's IRP Rider rate in 2016 was $0.24 below the cap and the current proposal would increase the cap by $0.30, the practical effect of Columbia's proposal over a two-year period, 2016-2018, is an annual cap increase of $0.54. Monthly Rider IRP rates for the SGS class would have to increase from $8.96 in 2016, to $10.20 in 2017, and all the way to $11.50 in 2018. Historically, such increases have not been seen in the IRP. In fact, as noted above, Columbia has never reached the allowed cap in any year.

Staff also reviewed the Company's analysis supporting the estimated capital investment that it states that it will need to install 164 miles of BS/CI pipelines per year during the renewal period. One concern with this analysis is that, by necessity, the Company relied on a number of interconnected assumptions to arrive at its projections. These assumptions were largely derived by averaging historical year-to-year changes in various inputs to the annual IRP revenue requirement calculation such as the miles of pipe retired, costs to remove existing pipe, property taxes, etc. The Company also used internal estimates for items such as future customer counts. A problem with this approach is that there are wide year-to-year swings in the various IRP cost components. In one year the Company may replace more miles than another year. Similarly, it may retire considerably more existing pipe in one year versus another. In addition, wide variations in IRP cost drivers can exist for cost items such as the ratio of hard-surface to soft-surface restorations, rural versus urban replacements, number of service lines replaced, etc. Such year-to-year swings in the variables that drive per mile replacement costs render historical averages of costs largely unreliable, especially over a short time span. Staff agrees that the 2013-2016 time period is likely more reflective of what may happen with IRP costs during the renewal period, but the period is simply too short for the historical swings to normalize such that trends could be more reliable.

Another problem is that the Company's analysis of historical costs to support the proposed increase to the annual IRP rate cap relies on an errant assumption. To calculate the historical per mile costs for replacements, the Company divided its actual annual pipeline additions costs by the miles of BS/CI pipe replaced the same year and averaged the results. This approach, however, inflates the costs per mile when compared to what Columbia actually experienced. Staff modified Columbia's calculations to divide the Company's actual annual plant additions costs by the actual total miles of pipe replaced that year. In the 2013-2016 period, in addition to BS/CI pipe, Columbia also replaced plastic, pre- and post-1955 field-coated, and Aldyl-A plastic pipe. When the Company's actual costs for pipeline additions costs are divided by the actual total miles replaced, the actual per mile costs that Columbia experienced during the 2013-2016 costs go down noticeably. Staff also modified Columbia's calculation to increase the miles that will be replaced each year during the renewal period. Staff determined a ratio of other pipe replaced to BS/CI pipe replaced in the 2013-2016 period and added this amount to the 164 miles that Columbia estimated that it would annually replace during the IRP renewal period. Staff estimated that the Company will add a total of approximately 211 miles of pipe per year during the renewal period. Staff's adjustments to Columbia's formula lowered the estimated capital investments that Columbia will need to make and lowered the resulting annual IRP Rider rate caps that will be necessary from Columbia's proposed $1.30 per month to $1.22 per month. However, this process still suffers from the same reliance on unreliable assumptions as Columbia's original analysis.

Staff agrees with Columbia that it is likely to continue to experience increasing costs for many pipeline replacement activities during the IRP renewal period and that such increases will drive up per mile replacement costs. However, while the Company's per mile replacement costs are likely to go up, the miles replaced each year should go down noticeably. In order to replace the approximately 4,100 miles of BS/CI pipelines that was in its system at the start of the IRP in 2008, Columbia needs to replace, on average, 164 miles of BS/CI pipe per year over the Program's 25 years. However, during the 2013-2016 period, the Company actually replaced an average of 196 miles of BS/CI pipe and 269 total miles of pipe (i.e., BS/CI plus other eligible pipe types). The Company states in its Application that it will have completed 1,640 miles of priority pipe replacement by the end of 2017. This means that, after ten years, the Company is on target to complete the IRP within the original 25-year period (164 miles per year times ten years equals 1,640 miles). The Company fell behind the 164 average miles per year pace in some of the early years of the Program, but it made up for this shortfall by replacing extra miles during the 2013-2016 period. Now that it has caught up, however, it should not have to replace as many miles annually during the renewal period. As noted above, Staff estimates that the Company will only replace on average approximately 211 total miles per year in order to stay on the annual 164 miles BS/CI replacement pace. Fewer miles replaced per year should lower the future capital investments that Columbia will need to make during the IRP renewal period, thus lessening the need to increase the Rider IRP cap.

For all of the foregoing reasons, Staff recommends that the Commission find that Columbia's proposal to raise the IRP rate cap from the current $1.00 per SGS customer per month to $1.30 per SGS customer per month is not supported by the evidence and is not just and reasonable. In Staff's opinion, setting the IRP Rider rate cap too high will upset the balance between enhanced safety and customer rate increases that the Commission adopted when it originally approved the IRP and lessen Columbia's incentives for IRP cost-containment. When the Commission originally approved the IRP, it determined that customer and public safety would be enhanced through accelerated replacement of aging BS/CI pipelines, but it also recognized that the accelerated replacement would lead to accelerated cost recovery through annual increases in customer rates. The Commission determined that the appropriate balance between safety gained from accelerated pipeline replacement and customer rate increases was a 25-year replacement period for the IRP. Setting the cap on annual Rider IRP increases too high could provide Columbia enough capital to finish the IRP sooner than 25 years, thus upsetting the Commission's balance between enhanced safety and customer rate increases. It may also lead to a situation where current customers would be subsidizing future customers by paying too much for IRP costs today for benefits that will also accrue to future customers. Similarly, setting the IRP Rider rate cap too high will lessen Columbia's incentives for cost containment. Columbia has done a good job in controlling IRP costs. As noted above, the Company has never reached the annual rate cap, which provides a good indication that it has instituted sound cost control measures. However, if the IRP Rider rate cap is set higher than it needs to be, then Columbia has less incentive to control costs, especially when it renegotiates its blanket construction contracts with contractors for IRP replacement's in 2021 and 2022.

Having recommended that the Commission find that Columbia's proposed cap on annual Rider IRP increases is too high and not supported by the evidence, the next logical step is determining what the cap should be. In Staff's opinion, the appropriate rate cap for the renewal period should balance the facts that the current $1.00 per month increase has been sufficient to enable Columbia to stay on target for completing IRP replacements within its original 25-year period and it should be replacing fewer miles per year during the renewal period against the facts that the Company has faced and will likely continue to face cost increases for many pipeline replacement activities. Staff recommends that the Commission maintain the current $1.00 per SGS customer per month cap for the first three years of the renewal period (2108-2020) and increase it to $1.10 per SGS per customer per month for 2021 and 2022. Staff recommends that the Commission authorize the following maximum SGS customer rates for the IRP renewal period:

	2018	2019	2020	2021	2022
Maximum SGS Customer IRP Rider Rate per Month	$11.20	$12.20	$13.20	$14.30	$15.40

In Staff's opinion, these rates will enable Columbia to stay on track towards completing the IRP within its original 25-year period while recognizing that the Company is likely to continue to experience annual cost increases for pipeline replacement activities, especially when new blanket construction contracts take effect in 2021.

Lastly, Staff recommends that the Commission give no weight to Columbia's suggestion that, since customers are currently paying approximately 30% less for natural gas service (on a total bill basis) than they were at the end of its last base rate case (in 2008), now is the optimal time to invest in infrastructure. In Staff's opinion, Columbia's recommendations regarding renewing the IRP and increasing the IRP rider rate cap should stand or fall on their own merits.

Conclusion

Based on the investigation described above, Staff recommends that the Commission approve Columbia's Application as modified by Staff's conclusions and recommendations made herein.