Columbia Exhibit No.

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Annual Application of Columbia Gas of Ohio, Inc. for an Adjustment to Rider IRP and Rider DSM Rates.	))))	Case No. 16-2236-GA-RDR

PREPARED DIRECT TESTIMONY OF ERIC SLOWBE ON BEHALF OF COLUMBIA GAS OF OHIO, INC.

COLUMBIA GAS OF OHIO, INC.

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PREPARED DIRECT TESTIMONY OF ERIC SLOWBE

Q. Please state your name and business address.

A. My name is Eric Slowbe and my business address is 290 W. Nationwide Blvd., Columbus, Ohio 43215.

Q. By whom are you employed?

A. I am employed by Columbia Gas of Ohio, Inc. ("Columbia"). My current title is Principal Engineer.

Q. Please summarize your educational background and experience.

A. I have a Bachelor of Science degree in Industrial Engineering from the University of Toledo, in Toledo, Ohio, a Professional Engineering Certification from the State of Ohio, and am currently pursuing a Master of Business Administration at Southern New Hampshire University Online. In 2008, I began my career with Columbia as a Field Engineer. As a Field Engineer, I was responsible for tasks including design and management of gas pipe construction projects, winter operations planning, and emergency response support in addition to providing technical assistance for various company activities. In 2014 I accepted a position as a Principal Engineer with responsibilities for Ohio and Kentucky.

Q. What are your responsibilities as Principal Engineer?

A. As Principal Engineer my responsibilities include assisting in collection and analysis of data for regulatory filings, managing engineering training materials and learning requirements, internal process evaluation standardization and improvement, and providing a variety of technical support for various teams and initiatives within NiSource/Columbia. I facilitate updates and changes to company policies and procedures, and assist with quality and accuracy evaluations related to engineering activities.

Q. Have you previously testified before this Commission?

A. No, I have not.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to explain the management, engineering, and construction practices of Columbia as they relate to the various components of Rider IRP, included in this filing, for the 2016 calendar year. I will also discuss Columbia's performance with respect to its accelerated main replacement program and hazardous service line replacement program.

Q. Please summarize Rider IRP and its components included in this filing.

A. Rider IRP is an infrastructure tracker that captures cumulative plant investment over a specified period of time and provides for a return on and the return of all program costs. The program components that make up Columbia's IRP are: (1) the Accelerated Main Replacement Program ("AMRP"); and (2) the replacement of hazardous service lines; and (3) the Automated Meter Reading Device ("AMRD") program.

Q. Please describe the AMRP and replacement of hazardous service line programs.

A. Columbia's AMRP targets certain types of main for replacement over the course of approximately 25 years. The types of gas main included in the AMRP are unprotected bare steel, unprotected coated steel, wrought iron, and cast iron. These types of main ("Priority Pipe" or "Priority Main") typically have a greater probability to leak due to their material type, protection, age, and other characteristics. Also included in the AMRP is the replacement of all metallic service lines and associated appurtenances.

Columbia also has responsibility of 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.

Q. Please summarize the AMRP and hazardous service line performance portions of Rider IRP for 2016.

A. For the 2016 AMRP filing, Columbia has included costs for projects associated with the retirement of Priority Pipe totaling approximately $214.7 million. The total footage abandoned or retired from service for each type of main is as follows:

Bare Steel:	1,003,778 feet
Iron/Other:	52,923 feet
Pre-1955 Unprotected Coated Steel:	152,404 feet
Post-1954 Coated Steel:	76,817 feet
Plastic:	169,876 feet

Also, in 2016, Columbia replaced 5,617 hazardous customer service lines for a total cost of approximately $21.2 million.

Q. Has Columbia included the costs to replace segments of plastic and coated steel mains in this filing?

A. Columbia has included the costs of retiring these portions of non-priority pipe main in conjunction with its infrastructure replacement projects in this tracker. As part of the Joint Stipulation and Recommendation in Case No. 11-5515-GA-ALT approved by the Commission in its Opinion and Order dated November 26, 2012, Columbia clarified the scope of the AMRP to include interspersed non-priority main, first generation plastic main, and ineffectively coated steel main.

The Opinion and Order issued in 11-5515-GA-ALT provided for recovery of investment related to interspersed sections of nonpriority pipe contained within the bounds of priority pipe replacement projects where it is more economical to replace such pipe based on the pipe diameter and length of main. These replacement metrics are set forth in the Commission's Order dated November 26, 2012.

The Opinion and Order further allowed for the inclusion and recovery of investment related to the replacement of first generation plastic pipe or Aldyl-A plastic pipe when such pipe is associated with priority pipe in replacement projects not to exceed 5% of the total pipe replaced. For 2016, Columbia's retirement of first generation plastic pipe installed prior to 1982 associated with an AMRP totaled 45,518 feet of pipe which was 3.13% of the total retirement footage.

Columbia's AMRP was also clarified to expressly include ineffectively coated steel pipe installed before 1955 which was considered ineffectively coated without further testing. Columbia also tested segments of post-1954 coated steel pipe that were retired with replacement projects. Segments of post-1954

coated steel pipe that were determined to be ineffectively coated were included in the IRP. Columbia retired a total of 42,690 feet of post-1954 coated steel pipe that was found to be ineffectively coated.

Q. The Joint Stipulation and Recommendation in Case No. 11-5515-GA-ALT also included restrictions on certain types of projects related to system betterment and municipal improvement. What has Columbia done to ensure compliance with those requirements?

A. Columbia has put processes in place to ensure that the cost of projects such as system betterment designed for future growth and municipal improvement projects where Columbia was required to move its facilities were not included in the AMRP filing if they did not meet the requirements contained within the Joint Stipulation and Recommendation approved by the Commission in Case No. 11-5515-GA-ALT. One such process is the monthly review of all active job orders through a Pre-Closeout Report. With this report, a list of all active job orders are provided monthly to Columbia's field engineering leaders to review with their respective engineering team members. Key information that is provided includes the estimated footage of priority pipe that is expected to be retired, the project accounting code (indicates whether the job order is an AMRP project), and whether the project accounting code was entered correctly. This monthly review helps to ensure that AMRP related job orders are properly entered into our Work Management System. Additionally, Columbia has a comprehensive training module in its learning management system for new and existing engineering employees that provides clear instructions on what is included in the AMRP, and how to properly code projects for inclusion in its annual filing. In 2016, the Columbia Engineering Department reviewed and updated the AMRP projects included and excluded in the monthly reviews. These efforts help to reinforce the importance Columbia places on this program and helps to ensure compliance to the Joint Stipulation.

Q. How did Columbia determine which mains were to be replaced as part of its AMRP in 2016?

A. In 2016, Columbia utilized Optimain DS™ to help evaluate and rank pipe segments system-wide against a range of environmental conditions (e.g. population density, building class, surface cover type, etc.), risk factors (pipe segment leak history, pipe condition, pitting depth, depth of cover, etc.) and economic factors. Generally, we identified, ranked and selected projects based on the level of relative risk score that would be removed from the system per every thousand feet of pipe that would be abandoned with the project. We

also considered the level of relative risk score that would be removed from the system per every $100,000 dollars of capital spent. This evaluation and risk ranking of pipe segments was then reviewed by the engineering and operations departments to assess whether that data was consistent with what has been observed in the field. Additionally, Columbia worked collaboratively with local and state governments in areas where public improvement work was to occur. Columbia reviewed plans and identified areas of Priority Pipe within the scope of pending public improvement work. Columbia used both sets of information listed above to help determine which sections of main were the best candidates to select for replacement.

Q. Please describe Columbia's process for determining the resources to be used in conjunction with the AMRP projects.

A. The majority of all Columbia's capital work is performed by contractors under "blanket" contracts. Columbia extended and expanded the scope of our previously bid "blanket" construction contracts through December 31, 2016. This approach allows Columbia to maintain highly skilled contract resources and encourages these contractors to expand their businesses in Ohio. Local Columbia employees may perform work on some smaller projects when they are available. Columbia evaluates each project on a variety of criteria to determine who will perform the work.

Q. What percentage of contractors working on AMRP projects in 2016 consisted of Ohio labor?

A. As part of the Stipulation in Case No. 08-72-GA-AIR, et al., approved by the Commission on December 3, 2008, Columbia agreed to encourage its AMRP contractors to use their best efforts to retain Ohio labor to perform AMRP related services. In the Joint Stipulation and Recommendation in Case No. 09-0006-GA-UNC, filed on June 2, 2009, and approved by the Commission on June 24, 2009, Columbia agreed to continue to encourage its AMRP contractors to use Ohio labor, and to report on Ohio labor participation in the AMRP program. Columbia has added language to its bid packages stating a preference that Ohio labor be used whenever possible as long as the price and quality of work is not negatively impacted. For 2016, 85% of contractor labor workforce on AMRP projects was from Ohio.

Q. Do contractors typically replace Columbia's hazardous customer service lines?

A. Contractors do replace some hazardous service lines in a few locations, but the majority of hazardous service lines are replaced by local Columbia employees.

Q. Did the various components included in this filing produce any other significant benefits for customers in 2016?

A. Yes. Customer safety has been improved significantly due to the replacement of more than 5,617 hazardous service lines. With the retirement of 1,056,701 feet of Priority Pipe, Columbia was able to eliminate the chance of water entering these lines and freezing meters off in the winter. Incidents of water entering the lines reduced 26% between the 2014-2015 and 2015-2016 gas seasons. Additionally, Columbia was able to retire distribution mains where it has habitually had to go in and dig up to repair the mains. Overall, Columbia has continued to see a decrease in the number of new leaks found on distribution mains and services based on its three year leakage survey frequency. Columbia found 14,547 new leaks in 2016, or approximately 17.0% fewer leaks compared to 2013 when the same geographic areas were surveyed and 17,522 leaks were found.

Q. What are Columbia's construction plans for 2017?

A. Columbia expects to spend approximately $219.4 million on the various components of Rider IRP in 2017. Columbia currently estimates it will spend approximately $25 million on hazardous service lines, and $194.4 million on replacing infrastructure. Priority Pipe projects will be constructed throughout the year. Many of these projects have either not yet been identified or involve third party coordination the schedules for which cannot be confirmed at this time. These projects will address existing hazards and/or eliminate risky pipe in conjunction with public works projects. A current listing of Columbia's largest planned infrastructure projects are shown below.

Project Name	City	Estimated Cost
Queens Highway AMRP	Parma	$7,548,372
Drexel AMRP	Columbus	$6,700,000
Longfellow AMRP	Berea	$3,698,363
Professor & Union AMRP	Oberlin	$3,375,000
Moreland AMRP	Parma	$3,284,854
Findley Ave AMRP	Toronto	$3,034,500
Wolfe Avenue AMRP	Mansfield	$2,860,320
Maple St AMRP	Salem	$2,808,993
Killbuck AMRP	Killbuck	$2,689,810

Project Name	**City**	**Estimated Cost**
Risingsun AMRP	Risingsun	$2,668,398
104th AMRP	Toledo	$2,619,882
Main St AMRP	Tiffin	$2,592,873
Columbia St AMRP	Alliance	$2,408,414
Wall Street AMRP	Plymouth	$2,403,023
Second St AMRP	Carrollton	$2,324,440
William Ave AMRP	Yorkville	$2,286,827
Sandusky AMRP	Sandusky	$2,268,628
Elmore AMRP	Elmore	$2,148,412
Foresythe & 6th AMRP	Columbus	$2,134,000
Beech & Stanley AMRP	Columbus	$2,124,250
Preston Street AMRP	Centerburg	$2,123,471
Windsor & Park AMRP	Urbana	$2,035,000
Fort Street AMRP	Maumee	$1,991,308
Rose & Wilson AMRP	Springfield	$1,939,000
USR 23 and Olentangy River AMRP	Delaware	$1,900,000
Mulberry Street AMRP	Mt. Vernon	$1,875,152
Hamilton Ave AMRP	Steubenville	$1,851,000
Eastern Ave AMRP	New Lexington	$1,845,000
Broadway & Newton AMRP	Toledo	$1,821,708
Winona Blvd AMRP	Chillicothe	$1,752,000
Beechway AMRP	Toledo	$1,747,334
Front St. Ph 1 AMRP	Logan	$1,746,919
Derrer and Olive AMRP	Columbus	$1,741,929
Worthington & 9th PH 2 AMRP	Columbus	$1,736,903
Roanoke East AMRP	Toledo	$1,684,276
Vermilion West AMRP	Vermilion	$1,679,045
Emerald & Eldridge AMRP	Columbus	$1,640,000
Enderby & Edgehill AMRP	Parma	$1,594,647
Beechrock Ave AMRP	Zanesville	$1,549,500
Siebert & Bruck 2 AMRP	Columbus	$1,543,887
Scott & Jones AMRP	Columbus	$1,520,000
Adelbert Street AMRP	Elyria	$1,504,658
Poplar St. AMRP	Nelsonville	$1,494,000
Mound & High AMRP	Springfield	$1,492,000
Roanoke West AMRP	Toledo	$1,489,769
106th AMRP	Toledo	$1,460,829
Ridge Ave AMRP	Zanesville	$1,456,500

Project Name	**City**	**Estimated Cost**
Crogahan St AMRP	Fremont	$1,401,673
Taylor Boulevard AMRP	LaGrange	$1,388,000
Hilltop - Walsh & Helen AMRP	Columbus	$1,370,000
Alger AMRP	Alger	$1,354,061
Dominion & Zeller AMRP	Columbus	$1,352,837
Long & 22nd AMRP	Columbus	$1,345,000
Center Ridge Road AMRP	North Ridgeville	$1,332,921
Michigan Avenue AMRP	Mansfield	$1,324,239
Birchard Ph1 AMRP	Fremont	$1,317,283
Robinson Ave AMRP	Portsmouth	$1,312,000
Antietam AMRP	London	$1,282,000
Beechwood Blvd AMRP	Wintersville	$1,246,504
Andover and Berkshire AMRP	Upper Arlington	$1,240,150
Andover and Suffolk AMRP	Upper Arlington	$1,218,000
Mulberry St AMRP	Coshocton	$1,143,484
Denver & Stanberry AMRP	Bexley	$1,135,000
Monroe AMRP	Toledo	$1,091,849
Saco AMRP	Toledo	$1,082,694
City Park & Blenkner AMRP	Columbus	$1,050,000
Segur North AMRP	Toledo	$1,040,228
Lincoln Ave AMRP	Massilon	$1,023,736
Elm St AMRP	Columbiana	$1,018,806
Wyandotte & King AMRP	Upper Arlington	$990,948
Latonia Street AMRP	Ironton	$966,085
Beatty Ave AMRP	Cambridge	$960,500
Birchard Ph2 AMRP	Fremont	$938,848
City Park & Gates AMRP	Columbus	$925,197
Alley MP AMRP	Chillicothe	$908,500
Michigan & 6th Ph 2 AMRP	Columbus	$880,005
Worthington & 9th PH 1 AMRP	Columbus	$850,224
Longview Avenue AMRP	Mansfield	$830,419
Michigan & 6th Ph 1 AMRP	Columbus	$809,995
Delano Ave AMRP	Chillicothe	$733,000
Main St AMRP	Roseville	$688,000
Front St. Ph 2 AMRP	Logan	$525,000

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/ Joseph M. Clark
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Summary: Testimony of Eric Slowbe electronically filed by Cheryl A MacDonald on behalf of Columbia Gas of Ohio, Inc.