BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. G-9, SUB 743

In the Matter of Application of Piedmont Natural Gas Company, Inc., for an Adjustment of Rates, Charges, and Tariffs Applicable to Service in North Carolina, Continuation of its IMR Mechanism, Adoption of an EDIT Rider, and Other Relief	TESTIMONY OF NEHA PATEL PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION

PIEDMONT NATURAL GAS COMPANY, INC.
DOCKET NO. G-9, SUB 743

TESTIMONY OF NEHA PATEL
ON BEHALF OF THE PUBLIC STAFF –
NORTH CAROLINA UTILITIES COMMISSION

JULY 19, 2019

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

A. My name is Neha Patel. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a Public Utilities Engineer with the Natural Gas Division of the Public Staff – North Carolina Utilities Commission (Public Staff).

Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.

A. My qualifications and duties are included in Appendix A.

Q. WHAT IS THE NATURE OF THE APPLICATION IN THIS RATE CASE?

A. Piedmont Natural Gas Company, Inc. (Piedmont or the Company), filed an application with the Commission on April 1, 2019, in this docket seeking authority to increase rates for natural gas utility service in all of its service areas in North Carolina and for other relief.

Q. BRIEFLY EXPLAIN THE SCOPE OF YOUR INVESTIGATION REGARDING THIS RATE INCREASE APPLICATION.

A. My areas of investigation in this case have been: (1) performing an Allocated Cost of Service Study (ACOSS), (2) adjusting the Cost of Gas to the going level basis, (3) review of the Margin Decoupling Tracker (MDT) as discussed by Company witnesses Couzens and Yardley, and (4) recommending an appropriate rate design.

I performed a billing analysis to determine the level of revenues produced at present and proposed rates utilizing the data updated through May 31, 2019, and developed a recommended rate design to recover the revenue requirement set forth in the pre-filed testimony of Public Staff witness Jayasheela.

ALLOCATED COST OF SERVICE STUDIES

Q. HAVE YOU PERFORMED AN ALLOCATED COST OF SERVICE STUDY TO SUPPORT YOUR RATE DESIGN?

A. Yes. I utilized the Public Staff's recommended levels for volumes, customer numbers, revenues, expenses, and investments and prepared a fully allocated ACOSS under Piedmont's existing rates with pro forma adjustments (end of period) and arrived at several allocation factors. This study assigns each class specific costs based on Company records to determine the proper cost to serve the

respective customer classes taking into account Company expenses, operating revenues, and net investments. This allocated cost of service study is only a ratemaking guide and not the only factor to be used in designing utility rates.

Q. WHAT COST OF SERVICE METHODOLOGY DID YOU USE?

A. I used the Peak and Average or "Seaboard" Method, which properly allocates fixed costs between annual use and peak day utilization. This method was determined by the Commission to be the "best cost-of service study method available" in its Order Granting Partial Rate Increase issued October 30, 1998, in Docket No. G-5, Sub 386. (PSNC Sub 386 Rate Order)[1]

Q. WHAT GENERAL COSTING PRINCIPLE DID YOU USE IN YOUR ACOSS?

A. The two main costing principles utilized in developing an ACOSS are System Utilization and Cost Causation. The Public Staff has historically supported the System Utilization principle because the allocation of demand and storage charges accurately depicts the utilization of these services associated with the costs. The Cost Causation principle, on the other hand, makes an assumption that

[1] The Commission's decision was appealed to the North Carolina Supreme Court which affirmed the Commission in State ex rel. Utils. Comm'n v. Carolina Util. Customers Ass'n, 351 N.C. 223, 524 S.E.2d 10 (2000).

costs are caused by certain classes of customers, regardless of whether they actually use the services in question. The Commission upheld the use of the System Utilization principle in the PSNC Sub 386 Order.

Q. HOW DID YOU ALLOCATE SERVICES AND MAINS?

A. I calculated the customer and demand components by employing the Zero-intercept method, which uses a regression analysis to calculate the unit cost per foot that a theoretical zero-inch diameter pipe would cost to install. Customers would pay these costs regardless of whether they received any gas through the pipe. This constant is then multiplied by the total length of mains or services to calculate a customer cost component. The demand cost component is the dollar amount for the particular account less the customer cost component. Based on my calculations, the customer component for the distribution mains account was 43.37% and the customer component for the services mains account was 46.82%.

Q. WHAT IS THE RESULT OF YOUR ACOSS?

A. Patel Exhibit I is a summary of my ACOSS under the existing rates. Patel Exhibit II is a summary of my ACOSS under the Public Staff's recommended rates.

COST OF GAS

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSED LEVEL OF COST OF GAS?

A. The Public Staff's calculation of the commodity cost of gas differs from the Company's level by a very small amount. The Public Staff's updated volumes are 75,113,869 dekatherms (dts) for sales and 2,608,533 dts for Company Use and Lost and Unaccounted Gas. This number differs from the Company's number by about 4,829 dts. Therefore, the Public Staff's recommended commodity cost of gas is $215,113,340 versus the Company's level of $215,168,222. The Public Staff accepts Piedmont's fixed gas cost as our calculation is very similar to that of the Company.

MARGIN DECOUPLING TRACKER (MDT) MECHANISM

Q. PLEASE EXPLAIN ANY ADJUSTMENTS REGARDING THE MDT MECHANISM.

A. In this proceeding, the Company filed MDT adjustments to the Residential, Small General and Medium General Service rate schedules. The Public Staff calculated the normalized usage for heat sensitive customers on a monthly basis and determined that there is not a significant difference between the Public Staff's MDT revenue adjustments and the Company's adjustments and the "R" factors

using data through May 31, 2019. As stated in Piedmont witness Couzens' testimony, there is a total Residential pro forma revenue increase and decreases in total Small and Medium General pro forma revenues.

RATE DESIGN

Q. HOW DO YOU RECOMMEND THE COMPANY RECOVER THE PUBLIC STAFF'S RECOMMENDED REVENUE REQUIREMENT?

A. The Public Staff is recommending an increase of $63,031,608 as set forth in the pre-filed testimony of Public Staff witness Jayasheela. A number of factors may be considered in designing rates to allow the Company to recover the annual levels of revenue. These factors include value and type of service, quantity of use, time of use, manner of service, competitive conditions relating to the acquisition of new customers, historical rate design, the Company's revenue stability, economic policy, administrative ease, and ACOSS.

Value of service is an important consideration because it recognizes that the price paid for natural gas service cannot be significantly greater than a satisfactory alternative. The fact that natural gas is cleaner burning (i.e., produces less emissions) and easier to use also affects its value for some customers. Consideration of value of service is the reason rates for some rate classes are designed to

allow for negotiations based on alternative fuel pricing and transportation of gas procured by end-users.

The type of service, quantity used, time of use, and manner of service are evaluated by reviewing customer characteristics. Different types of customers have different needs. For example, heat-sensitive residential and commercial customers need more security of service during peak (cold) winter days than do non-heat sensitive customers, and they pay for this enhanced service by contributing more margin in the form of higher rates. Within the industrial class, some customers require a firm (guaranteed) gas supply in their manufacturing process, whereas others use gas only as boiler fuel. Some may choose to have an alternate fuel available, and some may not. Rate design should reflect all these differences among customers.

Rates should be attractive to new customers. Some industrial customers are energy intensive and are very conscious of their choice of fuels. Residential and small commercial customers are also concerned with their long-term commitment to their energy choice. Rates should be set in a manner that appeals to all classes of customers so as to ensure both the financial health of the utility and the welfare of its customers.

Historical rate design is also considered both in evaluating the results of past rate design and in anticipating the response to the recommended rate design.

In reviewing the revenue stability of the Company, I considered whether rates would enable it to attract new customers and keep its current customers. Dramatic changes in rate design can result in unpredictable revenue shifts and should generally be avoided.

Economic policy includes rate design that encourages economic growth in the Company's territory for all rate classes. Proper rate design can facilitate growth by enabling the Company to add new load in a cost-effective manner.

Administrative ease involves the reasonable classification of customers into various groups or classes where they share similarities. If customers are separated into too many rate categories, the utility incurs excessive administrative costs that provide little benefit to customers.

Finally, rates of return resulting from an ACOSS are considered in determining rate design and are used as a guide in determining the direction of rate changes for the various customer classes.

EFFECT OF RATE CHANGES

Q. WHAT EFFECT WILL YOUR RECOMMENDED RATES HAVE ON EXISTING BILLING RATES?

A. Patel Exhibit No. III shows the effect of my recommended margin change for each rate schedule and the associated rate change from the implementation of the flowback of Excess Deferred Income Taxes (EDIT) for Year 1 (Nov'19 - Oct'20) and Year 2 (Nov'20 - Oct'21). Residential customers will experience an average bill decrease of $1.32 per month or 15.84% in Year 1. Most other rate classes will see similar decreases in Year 1.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

QUALIFICATIONS AND EXPERIENCE

NEHA PATEL

I graduated from University Of Mumbai in 1995 with a Degree of Bachelor of Science in Electronic Engineering. I began working as a Utilities Engineer with the Natural Gas Division of the Public Staff in February of 2014.

My most current work experience with the Natural Gas Division includes the following topics:

1. Purchase Gas Cost Adjustment Procedures;
2. Tariff Filings;
3. Customer Utilization Trackers;
4. Margin Decoupling Trackers;
5. Special Contract Review and Analysis;
6. Integrity Management Riders;
7. Integrity Management Trackers;
8. Weather Normalization Adjustments;
9. Franchise Exchange Filings;
10. Annual Review of Gas Costs;
11. Cost Of Service Studies;
12. Peak Day Demand and Capacity Calculations; and
13. Fuel and Electric Usage Trackers.

PUBLIC STAFF
SUMMARY OF ALLOCATED COST OF SERVICE STUDY UNDER EXISTING RATES

Piedmont Natural Gas Company, Inc.
Docket Number G-9, Sub 743

LINE NO.	SUMMARY DESCRIPTION	UNIT	TOTAL COMPANY	RESIDENTIAL RATE 101/105	SMALL GENERAL RATE 102/142	MEDIUM GENERAL RATE 152	LARGE GENERAL SALES RATE 103 /113	INTERRUPTIBLE SALES RATE 104 /114	MILITARY INSTALL. RATE 10 /T10	POWER GENERATION	MUNIS & SPECIAL CONTRACTS
1	**Operating Revenues:**										
2	Gas Sales and Transportation	$	895,230,721	464,903,596	223,265,460	33,887,531	48,056,202	26,874,751	2,270,290	83,780,875	12,192,015
3	Other Operating Revenues	$	4,418,444	3,820,103	534,781	55,199	5,221	419	371	1	2,349
4	**Total Operating Revenues**	$	899,649,165	468,723,699	223,800,241	33,942,730	48,061,423	26,875,170	2,270,661	83,780,876	12,194,364
5	**Operating Expenses & Taxes:**										
6	Cost of Gas	$	335,375,076	155,785,981	101,582,604	17,385,691	26,073,395	13,311,413	1,138,437	15,261,813	4,835,742
7	Operation and Maintenance Expenses	$	199,712,704	92,953,521	79,832,444	2,903,834	6,420,300	2,211,537	402,905	12,274,920	2,464,569
8	Depreciation Expense	$	133,296,085	60,619,000	24,588,265	2,638,663	8,920,436	2,905,521	665,476	28,134,591	4,207,427
9	General Taxes	$	31,402,703	13,710,709	7,304,634	598,025	1,962,322	650,224	140,934	5,995,876	907,911
10	Federal Income Tax	$	26,060,707	19,101,730	1,298,306	1,368,639	598,127	1,025,317	(11,856)	2,854,247	(40,077)
11	State Income Tax	$	3,182,017	2,332,325	158,523	167,111	73,031	125,191	(1,448)	348,504	(4,893)
12	Amortization of EDIT	$	(3,128,110)	(1,347,363)	(590,748)	(63,480)	(220,758)	(72,049)	(16,121)	(698,006)	(104,294)
13	Amortization of Investment Tax	$	(79,424)	(34,210)	(14,999)	(1,612)	(5,605)	(1,829)	(409)	(17,723)	(2,648)
14	**Total Operating Expenses & Taxes**	$	725,821,758	343,121,693	214,159,029	24,996,872	43,821,248	20,155,324	2,317,917	64,154,222	12,263,738
15	Interest On Customer Deposits	$	(796,448)	(512,801)	(246,268)	(37,379)	0	0	0	0	0
16	Amort. of Debt Redemtion Premium	$	0	0	0	0	0	0	0	0	0
17	**Net Operating Income for Return**	$	173,827,407	125,602,007	9,641,212	8,945,858	4,240,176	6,719,845	(47,257)	19,626,654	(69,374)
18	**Rate Base:**										
19	Utility Plant	$	5,425,034,069	2,339,980,950	1,025,959,213	110,246,310	383,393,583	125,128,516	27,997,791	1,212,235,715	181,128,352
20	Accumulated Depreciation	$	(1,507,447,063)	(761,653,908)	(274,279,724)	(31,434,484)	(96,879,812)	(30,678,468)	(6,995,429)	(255,777,905)	(43,675,868)
21	**Net Plant in Service**	$	3,925,178,794	1,578,327,043	751,679,489	78,811,826	286,513,771	94,450,047	21,002,362	956,457,810	137,452,484
22	Allowance for Working Capital	$	188,279,764	71,031,843	30,977,101	4,426,367	14,308,588	7,471,693	858,428	52,414,130	5,493,973
23	Excess Accumulated Deferred Income Taxes	$	(826,960,713)	(358,936,166)	(170,943,630)	(17,923,038)	(65,157,697)	(21,479,413)	(4,776,264)	(75,700,403)	(31,258,837)
24	**Total Rate Base**	$	3,362,624,738	1,290,422,719	611,712,960	65,315,156	235,664,662	80,442,327	17,084,526	933,171,537	111,687,620
25	**Rate of Return**		**5.17%**	**9.73%**	**1.58%**	**13.70%**	**1.80%**	**8.35%**	**-0.28%**	**2.10%**	**-0.06%**

PUBLIC STAFF
SUMMARY OF ALLOCATED COST OF SERVICE STUDY UNDER PROPOSED RATES

Piedmont Natural Gas Company, Inc.
Docket Number G-9, Sub 743

LINE NO.	SUMMARY DESCRIPTION	UNIT	TOTAL COMPANY	RESIDENTIAL RATE 101/105	SMALL GENERAL RATE 102/142	MEDIUM GENERAL RATE 152	LARGE GENERAL SALES RATE 103 /113	INTERRUPTIBLE SALES RATE 104 /114	MILITARY INSTALL. RATE 10 /T10	POWER GENERATION	MUNIS & SPECIAL CONTRACTS
1	**Operating Revenues:**										
2	Gas Sales and Transportation	$	956,881,989	504,577,319	243,508,024	35,609,646	50,697,819	26,772,177	2,398,342	83,780,875	9,537,786
3	Other Operating Revenues	$	4,418,444	3,820,103	534,781	55,199	5,221	419	371	1	2,349
4	**Total Operating Revenues**	$	961,300,433	508,397,423	244,042,805	35,664,845	50,703,040	26,772,596	2,398,712	83,780,876	9,540,135
5	**Operating Expenses & Taxes:**										
6	Cost of Gas	$	335,375,076	155,785,981	101,582,604	17,385,691	26,073,395	13,311,413	1,138,437	15,261,813	4,835,742
7	Operation and Maintenance Expenses	$	199,712,704	92,953,521	79,832,444	2,903,834	6,420,300	2,211,537	402,905	12,274,920	2,464,569
8	Depreciation Expense	$	133,296,085	60,619,000	24,588,265	2,638,663	8,920,436	2,905,521	665,476	28,134,591	4,207,427
9	General Taxes	$	31,402,703	13,710,709	7,304,634	598,025	1,962,322	650,224	140,934	5,995,876	907,911
10	Federal Income Tax	$	26,060,707	18,545,528	3,030,115	1,215,778	721,840	770,340	3,887	2,173,247	(298,209)
11	State Income Tax	$	3,182,017	2,264,412	369,978	148,447	88,137	94,059	475	265,354	(36,411)
12	Amortization of EDIT	$	(3,128,110)	(1,347,363)	(590,748)	(63,480)	(220,758)	(72,049)	(16,121)	(698,006)	(104,294)
13	Amortization of Investment Tax	$	(79,424)	(34,210)	(14,999)	(1,612)	(5,605)	(1,829)	(409)	(17,723)	(2,648)
14	**Total Operating Expenses & Taxes**	$	725,821,758	342,497,579	216,102,292	24,825,347	43,960,067	19,869,214	2,335,583	63,390,072	11,974,088
15	Interest On Customer Deposits	$	(796,448)	(512,801)	(246,268)	(37,379)	0	0	0	0	0
16	Amort. of Debt Redemtion Premium	$	0	0	0	0	0	0	0	0	0
17	**Net Operating Income for Return**	$	235,478,675	165,899,844	27,940,513	10,839,498	6,742,974	6,903,382	63,129	20,390,804	(2,433,954)
18	**Rate Base:**										
19	Utility Plant	$	5,425,034,069	2,339,980,950	1,025,959,213	110,246,310	383,393,583	125,128,516	27,997,791	1,212,235,715	181,128,352
20	Accumulated Depreciation	$	(1,507,447,063)	(761,653,908)	(274,279,724)	(31,434,484)	(96,879,812)	(30,678,468)	(6,995,429)	(255,777,905)	(43,675,868)
21	**Net Plant in Service**	$	3,925,178,794	1,578,327,043	751,679,489	78,811,826	286,513,771	94,450,047	21,002,362	956,457,810	137,452,484
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23	Excess Accumulated Deferred Income Taxes	$	(826,960,713)	(358,936,166)	(170,943,630)	(17,923,038)	(65,157,697)	(21,479,413)	(4,776,264)	(75,700,403)	(31,258,837)
24	**Total Rate Base**	$	3,362,624,738	1,290,422,719	611,712,960	65,315,156	235,664,662	80,442,327	17,084,526	933,171,537	111,687,620
25	**Rate of Return**		**7.00%**	**12.86%**	**4.57%**	**16.60%**	**2.86%**	**8.58%**	**0.37%**	**2.19%**	**-2.18%**

Patel Exhibit III

Piedmont Natural Gas Company, Inc.
Docket No. G-9, Sub 743
PUBLIC STAFF RECOMMENDED
MARGIN CHANGES AND FLOWBACK OF EDIT

Rate Schedule	Change in Margin ($)	Change in Margin (%)	Flow Back of EDIT Year 1 ($)	Flow Back of EDIT Year 2 ($)
101	$39,660,620	7.86%	($49,652,058)	($26,160,874)
102	20,100,280	8.29%	(19,463,929)	(10,255,232)
152	1,722,115	4.84%	(3,549,102)	(1,869,965)
142	38,881	6.38%	(56,055)	(29,534)
103	467,455	3.53%	(195,297)	(102,899)
104	125,096	3.13%	(63,262)	(33,332)
113	917,632	3.09%	(2,393,542)	(1,261,119)
114	711,185	3.00%	(2,093,162)	(1,102,854)
T-10	127,918	5.33%	(102,813)	(54,171)
Overall	$63,871,181	7.47%	($77,569,220)	($40,869,980)

	Combined Margin & Flow Back of EDIT			
Rate Schedule	Year 1 (Nov'19 - Oct'20) ($)	Year 1 (Nov'19 - Oct'20) (%)	Year 2 (Nov'20 - Oct'21) ($)	Year 2 (Nov'20 - Oct'21) (%)
101	($9,991,438)	-2.15%	$13,499,745	2.90%
102	636,351	0.29%	9,845,048	4.43%
152	(1,826,988)	-5.40%	(147,851)	-0.44%
142	(17,174)	-3.01%	9,347	1.64%
103	272,158	2.13%	364,556	2.85%
104	61,834	1.60%	91,764	2.37%
113	(1,475,910)	-5.13%	(343,487)	-1.19%
114	(1,381,977)	-6.01%	(391,668)	-1.70%
T-10	25,104	1.11%	73,747	3.25%
Overall	($13,698,039)	-1.53%	$23,001,201	2.57%