NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION

February 22, 2019

Ms. M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. G-40, Sub 149

Dear Ms. Jarvis:

In connection with the above-captioned docket, I transmit herewith for filing on behalf of the Public Staff the Joint Testimony and Exhibit of Jan A. Larsen, Director, Natural Gas Division; Shawn L. Dorgan, Staff Accountant, Accounting Division; and Julie G. Perry, Accounting Manager, Natural Gas & Transportation Section, Accounting Division.

By copy of this letter, I am forwarding a copy of the redacted version to all parties of record by electronic delivery. The confidential version will be provided to those parties that have entered into a confidentiality agreement.

Sincerely,

Electronically submitted
/s/ Elizabeth D. Culpepper
Staff Attorney
elizabeth.culpepper@psncuc.nc.gov

c: Parties of Record

FRONTIER NATURAL GAS COMPANY

DOCKET NO. G-40, SUB 149

JOINT TESTIMONY OF

JAN A. LARSEN, SHAWN L. DORGAN, AND JULIE G. PERRY

ON BEHALF OF

THE PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION

February 22, 2019

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

A. My name is Jan A. Larsen and my business address is 430 North Salisbury Street, Raleigh, North Carolina. I am the Director of the Public Staff's Natural Gas Division. My qualifications and experience are provided in Appendix A.

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

A. My name is Shawn L. Dorgan and my business address is 430 North Salisbury Street, Raleigh, North Carolina. I am a Staff Accountant in the Accounting Division of the Public Staff. My qualifications and experience are provided in Appendix B.

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

A. My name is Julie G. Perry and my business address is 430 North Salisbury Street, Raleigh, North Carolina. I am the Accounting Manager of the Natural Gas & Transportation Section in the Accounting Division of the Public Staff. My qualifications and experience are provided in Appendix C.

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

The purpose of our testimony is to (1) present the results of our review of the gas cost information filed by Frontier Natural Gas Company (Frontier or Company) in accordance with N.C. Gen. Stat. § 62-133.4(c) and Commission Rule R1-17(k)(6), (2) to evaluate the prudence of the natural gas purchases made by Frontier, (3) to provide our conclusions regarding whether the gas costs incurred by Frontier during the 12-month review period ended September 30, 2018, were properly accounted for, and (4) to discuss the prudence of Frontier's decision not to hedge during the review period and the impact of Frontier's decision to purchase daily gas supplies instead of utilizing other available options.

Q. PLEASE EXPLAIN HOW THE PUBLIC STAFF CONDUCTED ITS REVIEW.

A. We reviewed the testimony and exhibits of the Company's witness, the Company's monthly Deferred Gas Cost Account reports, monthly financial and operating reports, the gas supply and pipeline transportation contracts, and the Company's responses to Public Staff data requests. The responses to the Public Staff data requests contained information related to Frontier's gas purchasing philosophies, customer requirements, and gas portfolio mixes.

Q. WHAT IS THE RESULT OF YOUR EVALUATION OF FRONTIER'S GAS COSTS?

A. Based on the Public Staff's investigation and its review of the data in this docket, and except for the adjustment to Frontier's deferred gas cost account discussed later in testimony, we believe that Frontier's gas costs were prudently incurred.

CUSTOMER GROWTH

Q. HOW HAVE FRONTIER'S CUSTOMERS AND THROUGHPUT CHANGED SINCE THE COMPANY'S LAST ANNUAL REVIEW OF GAS COSTS PROCEEDING?

A. The table below reflects Frontier's customer growth rate of 7.24% during the current review period, which is approximately four times the growth rate of legacy local distribution companies (LDCs) in North Carolina. There was an increase in both Frontier's sales and transportation volumes (expressed in dekatherms or dts) from what was experienced in the prior review period. Since Frontier's winter throughput is largely dependent on weather due to space heating load, the volume change is correspondingly affected by a change in Heating Degree Days (HDDs) as compared to prior periods.

	2017 Review	2018 Review	Change
Number of Customers (at September 30)	3,593	3,853	7.24%
Sales Volume (dts)	1,012,584	1,311,863	29.56%
Transportation Volume (dts)	2,828,955	2,956,643	4.51%
Total Sales & Transportation Volumes (dts)	3,841,539	4,268,506	11.11%

Q. DID FRONTIER ACQUIRE ADDITIONAL PIPELINE CAPACITY DURING THE REVIEW PERIOD?B

A. Although Frontier has acquired additional capacity in the past few years, the Company did not acquire any additional capacity during this review period. Frontier currently has a total of 8,613 dts per day of pipeline capacity on the Transcontinental Gas Pipeline Company, LLC (Transco) interstate pipeline.

Frontier states that it will continue to seek incremental pipeline capacity and evaluate storage opportunities in order to serve its customers. Frontier indicated in a data request response that it reached out to gas companies and municipalities in order to partner to obtain additional capacity on Transco. Frontier also indicated that it did not encounter any storage opportunities during the review period.

Q. HAS THE COMPANY PROPERLY ACCOUNTED FOR ITS GAS COSTS DURING THE REVIEW PERIOD?

A. Yes. However, as will be discussed in more detail later in testimony, we have reclassified – as commodity costs – certain costs represented by the Company as Demand and Storage Costs on Schedule 2 attached to the Company's testimony.

Q. WHAT OTHER ITEMS DID THE NATURAL GAS DIVISION REVIEW?

A. Even though the scope of Commission Rule R1-17(k) is limited to a historical review period, the Public Staff's Natural Gas Division also considers other information received pursuant to the data requests in order to anticipate the Company's requirements for future needs, including design day estimates, forecasted gas supply needs, projection of capacity additions and supply changes, and customer load profile changes.

<u>ACCOUNTING FOR AND ANALYSIS OF GAS COSTS</u>

Q. HOW DOES THE ACCOUNTING DIVISION GO ABOUT CONDUCTING ITS REVIEW OF THE COMPANY'S ACCOUNTING FOR GAS COSTS?

A. The Public Staff's Accounting Division reviews the Company's monthly Deferred Account reports (together with all supporting documentation), its monthly financial and other operating reports, and all executed gas supply and transportation contracts. In addition, we review the schedules attached to the Company's testimony, as well as the Company's responses to all Public Staff data requests submitted in this proceeding.

Each month we review the Deferred Account reports filed by the Company for accuracy and reasonableness, and perform certain review procedures on the calculations, including the following:

(1) **Gas Cost True-Up** – The actual commodity and demand costs are verified, calculations and data supporting gas cost collections are checked, invoices are reviewed, and the Company's overall gas cost calculations at benchmark are checked for mathematical accuracy.

(2) **Transportation Customer Balancing True-Up** – The monthly Cash-Out Report for each marketer is reviewed and all calculations for cash-out amounts are verified.

(3) **Interest Accrual** – Interest accrual calculations on the outstanding Deferred Gas Cost Account balances are verified.

(4) **Hedging Transactions** – The computed cost of each hedging transaction is traced to the underlying hedging contract, and computational accuracy is verified.

(5) **Temporary Increments and/or Decrements** – All calculations and supporting data regarding amounts due to or from customers – as recorded in the Deferred Gas Cost

Account – are verified, and supporting data and schedules are reviewed.

(6) **Supplier Refunds** – In Docket No. G-100, Sub 57, the Commission held that, unless or until it orders refunds to be handled differently, supplier refunds should be flowed through to ratepayers through a company's deferred account. Pursuant to this order we review all supplier refund documentation received by the Company during the review period, and verify that all amounts received by the Company, if any, have been flowed through to ratepayers.

Q. HOW DO THE COMPANY'S FILED GAS COSTS FOR THE CURRENT REVIEW PERIOD COMPARE WITH THOSE FOR THE PRIOR REVIEW PERIOD?

A. Frontier's total gas costs for the current review period were $5,814,378, compared with $4,699,507 for the prior 12-month period. The components of total gas cost for the two periods, and our corresponding analysis, are as follows:

Line		12 Months Ended Sept. 30, 2018	12 Months Ended Sept. 30, 2017	Increase (Decrease)	% Change
	Pipeline Charges				
1	Transco FT	$1,202,629 [1]	$1,090,560 [1]	$112,069	10.28%
2	Other	0	0	0	N/A
3	**Total Pipeline Charges**	**$1,202,629**	**$1,090,560**	**$112,069**	**10.28%**
	Gas Supply Costs				
4	Baseload Purchases	$3,628,681	$3,395,754	$232,927	6.86%
5	Delivered Purchases	1,288,203	305,541	982,662	321.61%
6	Hedge Purchases	0	0	0	N/A
7	Other	(106,873) [2]	(1,034)	(105,839)	10235.88%
8	**Total Gas Supply Costs**	**$4,810,011**	**$3,700,261**	**$1,109,750**	**29.99%**
	Other Gas Costs				
9	True-up Entries per Monthly Deferred Account Filings	($248,262)	($149,768)	($98,494)	65.76%
10	Other Deferred Account Related Gas Costs	96,931 [3]	0	96,931	N/A
11	Other Gas Costs & Adjustments	(46,931) [4]	58,454	(105,385)	-180.29%
12	**Total Other Gas Costs**	**($198,262)**	**($91,314)**	**($106,948)**	**117.12%**
13	**Total Gas Costs**	**$5,814,378** [5]	**$4,699,507**	**$1,114,871**	**23.72%**
14	**Gas Supply for Delivery (dts)**	**1,366,150**	**1,065,672**	**300,478**	**28.20%**
15	**Total Gas Supply Cost per Dt**	**$4.2560**	**$4.4099**	**($0.1539)**	**-3.49%**

Notes:

[1] - Excludes reclassified commodity gas costs per Public Staff analysis of the Company's monthly deferred account reports.

[2] - Removes Integrity Management gas costs as w ell as compensated gas costs associated w ith a gas line hit (Boone, NC - June 28, 2018).

[3] - Benchmark proration adjustments (G-40 Sub 145, G-40 Sub 147) and other timing differences.

[4] - Adjustment to correct a deferred account overstatement in the prior review period; also includes effect of marketer cash-outs.

[5] - Ties to the Company's 2018 Q3 GS-1 Report and Cost of Gas Sold amounts recorded in Frontier's monthly earnings reports.

The increase in **Transco Firm Transportation** charges is due to the Company's first full year of access to the additional 2,663 dts per day of year round pipeline capacity, which Frontier acquired in January of 2017, as compared to only 9 months of charges in the prior review period.

Baseload Purchases increased primarily due to a higher level of purchased volumes during the current review period as compared to the prior period.

The increase in **Delivered / Daily Purchases** is due to a sizable increase in volumes purchased at Zone 5 Gas Daily Delivery (or Zone 5 spot market) prices during the winter period months.

There are no **Hedging Purchases** represented since Frontier did not engage in any hedging activity during the current review period, or the prior review period.

The credit amount in **Other Gas Supply Costs** represents, primarily, the removal of the cost of gas utilized in integrity management activities, as well as compensation for gas costs incurred in connection with a pipeline breach that occurred near the Town of Boone in June of 2018.

The change in **Other Gas Costs** relates primarily to activity in Frontier's Deferred Account. These totals reflect the offsetting journal entries recorded in the Company's Deferred Gas Cost Account during the review period, two offsetting entries for benchmark proration adjustments, an adjustment to the deferred account to correct a previous balance overstatement in the prior review period (effect on gas cost true-up amounts of previously unbilled and uncompensated customer usage in Rate Class 161), marketer net cash-outs, and other miscellaneous supplier billing adjustments.

Q. ARE YOUR GAS COST COMPUTATIONS IN AGREEMENT WITH THE COMPANY'S SCHEDULES AS FILED IN THIS PROCEEDING?

A. Yes. However, in the case of gas costs labeled "Other Capacity Charges" (Schedule 2) we have reclassified these costs as Commodity Charges (Schedule 3). We have done so due to the fact that these costs represent volumetric transportation surcharges passed through to the Company by UGI Energy Services, LLC (UGI), and are supply-related costs which the Public Staff has contended in prior annual review proceedings should be considered commodity costs, and thus not properly includible as a pipeline charge.

HEDGING AND OTHER RISK MITIGATION STRATEGIES

Q. PLEASE EXPLAIN HOW THE PUBLIC STAFF TYPICALLY CONDUCTS ITS REVIEW OF HEDGING ACTIVITIES.

A. The Public Staff's review of the Company's hedging activities typically includes an analysis and evaluation of the following information:

1. The Company's monthly hedging costs, as reflected on the invoices of UGI;

2. Detailed source documentation, such as physical gas confirmations, that support the amount of gas hedged and the strike prices;

3. Workpapers supporting the derivation of the maximum hedge volumes targeted;
4. The monthly summary of hedging costs (benefits);
5. Hedging plan documents that set forth the Company's gas price risk management policy, hedge strategy, and gas price risk management operations;
6. Documentation from meetings of Frontier's Supply Team and the Risk Committee of its parent company, Gas Natural Inc.;
7. Testimony and exhibits of the Company's witnesses in the annual review of gas costs proceeding; and
8. Company responses to the Public Staff's data requests.

Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF THE STANDARD SET FORTH BY THE COMMISSION FOR EVALUATING THE COMPANY'S HEDGING DECISIONS?

A. The appropriate standard for the review of hedging decisions by LDCs is set forth in the Commission's February 26, 2002, Order on Hedging in Docket No. G-100, Sub 84 (Hedging Order). In the Hedging Order, the Commission concluded that the purpose of hedging is to reduce the volatility of commodity costs. The Commission noted that hedging involves costs and risks and that it is possible that the long term cost of hedged gas will be higher than gas bought at market prices. The Commission stated it understands that with the use of hedging mechanisms, costs and risks are accepted in exchange for reduced volatility.

The Commission concluded that hedging is an option that must be considered in connection with an LDC's gas purchasing practices. The Commission stated that an LDC's decision to make no effort to mitigate price spikes--including a decision not to hedge--would be a decision subject to review in the LDC's annual gas cost prudency review proceeding just as much as a decision to hedge.

The Commission further concluded that if an LDC decides to hedge in some fashion, prudently incurred costs in connection with hedging should be treated as gas costs under N.C. Gen. Stat. § 62-133.4. The Commission stated that while such costs cannot be pre-approved within the context of the annual gas cost prudency review, the Commission recognized that the review of the prudency of a decision to hedge or not to hedge should be made on the basis of the information available at the time each decision is made, not on the basis of the information available at the time of the prudency review proceeding.

The Commission ordered that each LDC should address its current hedging policy and program in its testimony in each annual gas cost prudency review, explaining why and how it hedged or why it didn't hedge during the test period.

Q. PLEASE DESCRIBE FRONTIER'S HEDGING PROGRAM.

A. Frontier stated that the gas price hedging program is used to stabilize Frontier's gas costs. This strategy, depending on market conditions, is approached through three methodologies:

(1) Conservative: Hedge 0-25% of forecasted volumes when pricing is +/- 10% historical pricing levels for the strip period or for the month.

(2) Moderate: Hedge 25-40% of forecasted volumes when pricing is 25% less than historical levels.

(3) Aggressive: Hedge 40-75% of forecasted volumes when pricing is 50% less than historical levels.

Frontier also stated that it continually monitors the NYMEX natural gas commodity market and associated hedging developments, trends, activity, and costs. A core part of Frontier's strategy is to obtain reliability and price stability by fixing components of its gas costs, primarily commodity costs, through hedging and/or other price risk mitigation techniques.

The primary difference between Frontier's hedging approach and the approach of the other LDCs is that Frontier uses physical hedges exclusively and does not use financial hedges, such as options, futures, or swaps. A physical hedge is a fixed price contract between two parties to buy or sell physical natural gas supplies at a certain future time, at a specific price, which is agreed upon at the time the deal is executed. If Frontier hedges, its gas supply portfolio typically includes the physical purchase of fixed price gas supplies for delivery at its city gate on a monthly basis.

Q. PLEASE DESCRIBE YOUR UNDERSTANDING OF THE COMPANY'S HEDGING PROGRAM DURING THE REVIEW PERIOD.

A. Company witness Steele's testimony states as follows:

> Q. Did Frontier investigate hedging during the test year and, if so, what were the findings and conclusions?
>
> A. Frontier continually monitors the NYMEX natural gas commodity market and associated hedging developments, trends, activity and costs. Frontier did not engage in financial or forward price hedging activity during the current review period of October 2017 to September 2018. However, as discussed previously, the ability to purchase FOM [First of Month] priced gas and access different purchase locations provides a hedge against gas price volatility. Additionally, Frontier evaluated a peak day proposal from UGI.

Direct Testimony of Fred A. Steele, page 14, line 19 – page 15, line 4.

Based on its testimony, it appears that Frontier had three alternatives to supply its physical gas needs <u>above its baseload quantity</u> during the 2017-2018 winter period: (1) purchasing gas at the spot price with explicit hedging activity, (2) purchasing FOM priced gas (as further explained later), and (3) purchasing gas pursuant to a UGI peak day proposal (Peaking Proposal). The Public Staff believes that Frontier's decisions regarding these three alternatives for purchasing physical gas supplies above its baseload quantity should be examined in this proceeding.

Q. PLEASE EXPLAIN WHAT HEDGING PROPOSALS FRONTIER EVALUATED.

A. Frontier stated that it did not evaluate any hedging proposals for the 2017-2018 winter period, but instead relied on historical Zone 5 hedge pricing to rationalize that a hedge would be approximately $6.00 per dt; it did not analyze this alternative further since it had an Asset Management Agreement (AMA) with UGI (UGI AMA). Specifically, in response to Public Staff Data Request 3-3, the Company stated that **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**

Q. PLEASE EXPLAIN THE UGI PEAKING PROPOSAL FRONTIER EVALUATED.

A. Frontier stated that it evaluated a Peaking Proposal from UGI. The proposal provided Frontier with 20 days of 3,232 dts per day of Zone 5 delivered gas supplies above Frontier's baseload volumes for January and February 2018. The proposal required Frontier to pay a fixed fee of $430,000 plus a Zone 3 daily or FOM price depending on when the gas supply was nominated, either a day ahead or at the first of the month, multiplied by the 3,232 dts and the number of days provided. Frontier further stated that it had decided not to accept this option since it would be better for Frontier to utilize the UGI AMA.

Q. PLEASE EXPLAIN THE UGI AMA AND THE PRICING OPTIONS AVAILABLE THEREUNDER.

A. As mentioned previously, Frontier currently has contracts in place with Transco for 8,613 dts per day of year round baseload capacity. Frontier has the UGI AMA to nominate, purchase, and schedule physical gas deliveries for its full requirements. The UGI AMA allows Frontier the ability to purchase 100% of its baseload gas supply needs at the FOM Zone 3 prices if nominated at the first of the month, or Zone 3 gas daily prices if scheduled a day ahead.

The UGI AMA further allows for additional Zone 5 delivered gas supplies to be purchased above the baseload quantity, up to a maximum of 20,000 dts per day. The UGI AMA is structured so that if Frontier nominates additional Zone 5 delivered gas supplies at the first of the month (the AMA FOM Option), it pays the Zone 5 FOM delivered price, but if Frontier purchases those additional gas supplies only a day ahead (the AMA Daily Option), then it pays the Zone 5 daily delivered prices (Spot Market). The UGI AMA also allows Frontier the ability to sell back its gas supplies to UGI on a daily basis if Frontier's nomination was too high. Frontier can sell back those additional volumes to UGI at the Zone 5 daily pricing basis, less a small discount, thus reducing gas costs and minimizing the risk of paying extremely high gas prices.

Q. HOW WOULD THE THREE ALTERNATIVES COMPARE TO EACH OTHER IN DOLLAR EFFECT?

A. In response to Public Staff Data Request 2-2, Frontier confirmed that if it had nominated **[BEGIN CONFIDENTIAL]** [redacted]

[redacted] **[END CONFIDENTIAL]**

Q. PLEASE EXPLAIN WHICH PRICING OPTION FRONTIER CHOSE.

A. During the month of January 2018, Frontier's first of the month gas supply nomination only included its baseload quantity of 8,613 dts per day. Therefore, it did not utilize the AMA FOM Option for its additional gas needs. Furthermore, as stated previously, it did not choose to engage in the Peaking Proposal. Because of these choices, and based on the extreme cold that North Carolina experienced during January 2018, there were 11 days when Frontier had to purchase gas above its baseload quantity at a daily Zone 5 delivered price under the AMA Daily Option. Since the UGI AMA requires Frontier to purchase additional Zone 5 delivered gas supplies a day ahead at a gas daily price, for those additional supplies Frontier paid gas prices for these days that ranged from a low of **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** Steele Schedule 3 reflects a commodity cost of gas incurred by Frontier of $1,329,367.02, including these daily purchases.

Q. PLEASE EXPLAIN THE PUBLIC STAFF'S CONCERNS.

A. When asked about implementing a hedging proposal during the 2017-2018 winter in order to reduce the risk of paying high gas prices in Zone 5, Frontier referenced evaluating the Peaking Proposal, but stated that it was better to utilize its UGI AMA. As it turned out, Frontier did utilize the UGI AMA (thus also obtaining the very favorable sell-back rights), although instead of locking in above-baseload gas needs at the FOM price, it instead decided to risk purchasing all of its gas supplies needed above its baseload quantity at the Gas Daily Zone 5 delivered price. The Public Staff is concerned that Frontier did not utilize the AMA FOM Option in the UGI AMA to nominate volumes in order to secure a FOM Zone 5 delivered price for a least a portion of its gas supply purchases above its baseload volumes.

Q. PLEASE EXPLAIN WHY FRONTIER DID NOT UTILIZE THE AMA FOM OPTION.

A. When asked a question about mitigating the costs of extra demand capacity in Public Staff Data Request 2-2, Frontier responded that

[BEGIN CONFIDENTIAL] [redacted]

[END CONFIDENTIAL]

In response to Public Staff Data Request 3-5, Frontier stated that [BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

The Public Staff has two issues with these statements. First, the Public Staff does not agree that such a circumstance justifies Frontier not setting its MDQ above its baseload. The Public Staff contends that both hedging and gas supply planning entail planning for the unexpected, especially during the winter period. The LDCs in North Carolina have an obligation to serve their firm customers on a peak day in accordance with their gas supply procurement policy that includes purchasing gas supplies at a reasonable cost. Second, we also know that Frontier is growing at a fast pace and needs to plan for its current and prospective customers while mitigating price spikes to customers.

[BEGIN CONFIDENTIAL] [redacted] **[END CONFIDENTIAL]** Therefore, the Public Staff does not believe that it was reasonable for Frontier to decide to use <u>none</u> of the price mitigation tools available to it (hedging, peak day agreements, or additional FOM nomination) when approaching a winter month that might involve large temperature fluctuations and price volatility.

Q. SHOULD FRONTIER AND THE OTHER LDCS IN OUR STATE HAVE EXPECTED THE JANUARY 2018 EXTENDED WEATHER EVENT?

A. Yes. We have researched the weather forecasts in late December 2017 and since there were predictions of record breaking artic cold for an extended period of time over the central and eastern United States, we believe that this extended cold weather event ***<u>was</u>*** expected. For example, looking through the archives of the National Oceanic and Atmospheric Administration – National Weather Service (NWS) Weather Prediction Center shows that the NWS predicted much colder than normal weather starting on December 26, 2017, through the first several days of January 2018. Specifically, NWS's forecast at 4:04 p.m. on Wednesday, December 27, 2017 (which is three business days before the first of the month and a time when Frontier could have exercised its AMA FOM Option) predicted temperatures starting out at 10 degrees below normal and then dropping to 25 degrees below normal later in the 7 day forecast. Likewise, an archived story dated December 28, 2017, 4:32 a.m., from Accuweather® titled "US New Year's Eve forecast 2017: NYC to face biting winds as cold grips central, eastern US" stated "Temperatures on New Year's Eve may be at least 15 degrees Fahrenheit below normal from the northern Plains and New England southward to the central Plains and the Carolinas. This includes the cities of Chicago, Minneapolis, New York, Philadelphia, St. Louis, Oklahoma City and Raleigh. This frigid pattern looks to continue into the first week of 2018." This arctic blast began in late December in the central United States and moved towards the eastern US, affecting North Carolina with below normal temperatures beginning on December 26, 2017, and continuing until January 9, 2018. We believe these weather predictions from credible sources (in addition to others) were readily available in time for Frontier to make prudent decisions regarding its gas supply nominations during this time period.

Q. HAS THE ZONE 5 DAILY DELIVERED DAILY GAS MARKET SEEN MUCH VOLATILITY IN GAS PRICES IN THE PAST?

A. Both Frontier and the other LDCs in North Carolina have seen extremely volatile prices in the daily Zone 5 delivered market during periods of colder weather, and all should have strategies in place to mitigate the risk of these price spikes. The following graph reflects the daily Zone 5 delivered gas prices experienced over the last 5 years.

[BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

[BEGIN CONFIDENTIAL] [redacted]

[redacted]

[END CONFIDENTIAL]

Q. WHAT WERE THE CHANGES IN FRONTIER'S DEFERRED ACCOUNT DURING JANUARY AND FEBRUARY 2018?

A. Due to the extremely high daily gas prices paid by Frontier during January 2018, Frontier's deferred gas cost account balance increased from an $8,900 undercollection as of December 31, 2017, to an undercollection of $589,991 as of January 31, 2018, and further increased due to high gas prices to an $850,052 undercollection as of February 28, 2018. On March 16, 2018, Frontier ultimately filed a Purchased Gas Adjustment (PGA) to increase its Benchmark Delivered Cost of Gas to $6.00 per dt, a $2.00 per dt increase to

Frontier's customers. As of the end of the review period, Frontier still had a deferred gas cost account balance of $330,127, owed to Frontier by its customers.

Q. BASED ON YOUR REVIEW AND ANALYSIS, WERE THE COMPANY'S HEDGING DECISIONS DURING THE REVIEW PERIOD PRUDENT?

A. Even a conservative approach to stabilize costs would have enabled the Company to mitigate the impact of the large fly ups in gas prices during the winter. However, in this case, Frontier opted to rely on Zone 5 daily pricing instead of (1) locking in a portion of its gas supply under its AMA FOM Option at a first of the month price, (2) entering into the Peaking Proposal offered by UGI, or (3) initiating physical hedges for January and February 2018. By making little or no effort to mitigate <u>possible</u> price spikes consistent with the objectives identified by the Commission in Docket No. G-100, Sub 84, we believe the Company acted imprudently. Even if no extreme temperatures had been forecasted experienced, we believe that it would have been prudent for Frontier to engage in a reasonable level of price risk mitigation during January and February 2018, especially given the recent history of frequent winters with significant price spikes provisions of the UGI AMA. Consequently, we recommend that the Commission adjust the balance in the Company's Deferred

Gas Cost Account in this proceeding to reflect a portion of the FOM prices to its customers.

In our opinion, based on what was reasonably known or should have been known at the time the Company made its hedging decisions affecting the review period, as opposed to the outcome of those decisions, our analysis leads me to the conclusion that the decisions were imprudent.

Q. PLEASE DESCRIBE YOUR RECOMMENDED ADJUSTMENT.

A. As noted previously, the decision to rely on daily pricing instead of FOM pricing for the month of January 2018 resulted in Frontier incurring $487,305 in additional gas costs. Based on using the same assumptions in the February 2018 calculations, the Public Staff has also determined that if the AMA FOM Option had been chosen for February as well, the cost of gas would have been increased by $243,359 over the amount experienced using the daily price.[1] We have, therefore, computed an adjustment that credits the Deferred Gas Cost Account for the net amount of $243,946 ($487,305 – $243,359) plus interest as shown on Public Staff Panel Exhibit I, to reflect the pro forma effect of utilizing the Zone 5 AMA FOM option to purchase physical gas supplies associated with Frontier's UGI

[1] The Public Staff has computed the commodity cost of gas supply associated with February 2018 for both the Peaking Proposal and the AMA FOM Option of $1,207,295 and $873,034, respectively. The Company actually utilized the AMA Daily Option and incurred total commodity costs of $629,675.

AMA for both January and February 2018. Our adjustment reflects the purchase of 42,997 dts and 38,276 dts, approximately 1,387 dts per day above its baseload quantity times the number of days in the month, of gas supplies during January and February 2018, respectively.

Q. HAS THE COMMISSION APPROVED OTHER ADJUSTMENTS WHEN AN LDC DECIDED NOT TO HEDGE?

A. Yes. In Docket No. G-21, Sub 450, the Commission found that an adjustment to North Carolina Natural Gas's (NCNG's) Sales Customers Only Deferred Account of $457,324 in order to mitigate the impact on NCNG's customers of the natural gas price spike that occurred in February and March 2003 was just and reasonable, since NCNG failed to have an effective hedging program in place for gas purchases during this period.

Q. HAS FRONTIER HAD PRIOR GAS PROCUREMENT ISSUES?

A. Yes. In Docket No. G-40, Sub 124, Frontier and the Public Staff entered into a stipulation in lieu of a management audit pursuant to N.C. Gen. Stat. § 62-37(b) for the purpose of resolving certain issues. A few of the issues were gas planning, system operations, and procurement. Frontier and the Public Staff agreed to the transfer of $2,450,000 from Frontier's deferred gas cost account to a regulatory asset account to amortize, effective July 1, 2014, resolving any issues between the parties regarding the prudency of Frontier's gas purchases for the months of January 2014 and February 2014.

Q. HAS THE PUBLIC STAFF MADE FRONTIER AWARE OF THE RISKS OF NOT HAVING A STRATEGY IN PLACE TO MITIGATE GAS PRICE VOLATILITY?

A. Yes. The Public Staff typically cites the language in the Hedging Order concerning an LDC's decision to mitigate price spikes--including a decision not to hedge--as stated previously in our testimony. As to Frontier's previous Annual Review of Gas Costs proceeding (Docket No. G-40, Sub 145), although Frontier did not hedge during the review period and was found prudent, the Public Staff recommended that the Commission remind Frontier that the purpose of hedging is to reduce price spikes to customers, not just to secure gas supply, and put Frontier on notice that the risk is on Frontier, not its ratepayers, if price spikes occur and no hedging strategies are in place in the future.

DESIGN DAY REQUIREMENTS

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING HOW FRONTIER IS PLANNING TO MEET FUTURE SYSTEM DEMAND?

A. Attached to Company witness Steele's testimony as CONFIDENTIAL Exhibit B is a report on Design Day Study prepared by Dr. Ronald H. Brown, PhD, who utilized the Marquette University GasDay program in evaluating Frontier's projected peak day demand. We have evaluated this report and have concluded that it accurately calculates Frontier's peak day using reasonable assumptions, such as HDDs and frequency of occurrence of such cold weather events. Based on this report, it appears that Frontier has adequate capacity in order to serve its firm market on peak days until the 2021-2022 winter period. Due to the confidential nature of this document, we will not discuss any specifics of the report's findings.

DEFERRED ACCOUNT BALANCE

Q. WHAT IS THE APPROPRIATE DEFERRED ACCOUNT BALANCE AS OF SEPTEMBER 30, 2018?

A. We have determined that, based on (1) the recommended hedging/price mitigation adjustment to the deferred gas cost account, (2) our review of the gas costs in this proceeding, and (3) our opinion that the Company's gas costs were prudently incurred, the appropriate balance in Frontier's Deferred Gas Cost Account at September 30, 2018, is a $65,998 debit balance, owed to Frontier. The following chart summarizes Frontier's Deferred Gas Cost Account activity for the current review period:

Filed Deferred Account Balance - October 1, 2017	**$152,846**
Gas Cost True-up	173,006
True-up Adjustments	(191,961)
Transportation Customer Balancing True-up	69,164
Benchmark Proration Adjustment - G-40, Sub 145	98,151
Benchmark Proration Adjustment - G-40, Sub 147	2,960
Interest	25,961
Deferred Account Balance - September 30, 2018	**$330,127**
Public Staff Adjustment for Hedging / Price Mitigation	**(264,129)**
Public Staff Recommended Deferred Account Balance -September 30, 2018	**$65,998**

Q. WHAT IS YOUR RECOMMENDATION REGARDING ANY PROPOSED INCREMENTS/DECREMENTS?

A. Company witness Steele testified that Frontier anticipated that the current deferred account balance will be moving back toward $0.00 over the winter months. Frontier did not propose any temporaries in this proceeding. As shown in the chart above, the recommended deferred account balance owed from customers to Frontier is a debit balance of $65,998. While normally the Public Staff would recommend a temporary rate increment in order to collect this debit balance from customers, based on our investigation we have determined that Frontier's deferred account has changed significantly since the end of the review period.

In Frontier's previous Annual Review of Gas Costs proceeding (Docket No. G-40, Sub 145), the Public Staff recommended that Frontier file for a PGA in mid-March for an effective date of April 1, 2018, in order to resolve the under-collection of gas costs. On March 16, 2018, in Docket No. G-40, Sub 147, Frontier filed a PGA for authority to increase its Benchmark City Gate Delivered Gas Cost by $2.00 per dt effective April 1, 2018.

While in the instant docket we would have recommended that same course of action, Frontier filed a PGA on February 15, 2019, in Docket No. G-40, Sub 151 for authority to decrease its Benchmark by $2.05 per dt, effective March 1, 2019. That application has been evaluated by the Public Staff and our recommendation will be presented to the Commission for its consideration after the filing of the Public Staff's testimony in the instant docket. Therefore, based on Frontier's Sub 151 PGA filing, we believe that no further temporary rate increments or decrements are needed at this time.

Q. DOES THIS CONCLUDE THE PUBLIC STAFF'S TESTIMONY?

A. Yes, it does.

APPENDIX A

QUALIFICATIONS AND EXPERIENCE
OF
JAN A. LARSEN
DIVISION DIRECTOR

PUBLIC STAFF - NATURAL GAS DIVISION
NORTH CAROLINA UTILITIES COMMISSION

I graduated from North Carolina State University in 1983 with a Bachelor of Science degree in Civil Engineering. I was employed with Law Engineering Testing Company as a Materials Engineer from 1983 to 1984. From 1984 until 1986, I was employed by the North Carolina Department of Transportation as a Highway Engineer. In 1986, I was employed by the Public Staff's Water Division as a Utilities Engineer I. In 1992, I was promoted to Utilities Engineer II with the Public Staff's Natural Gas Division and promoted to Utilities Engineer III in 2002. In May of 2016, I was promoted to the Director of the Public Staff's Natural Gas Division.

My most current work experience with the Public Staff includes the following topics:

1. Rate Design / Allocated Cost-of-Service Studies
2. Purchase Gas Cost Adjustment Procedures
3. Tariff Filings
4. Natural Gas Expansion Project Filings
5. Depreciation Rate Studies
6. Annual Review of Gas Costs
7. Weather Normalization Adjustments
8. Customer Utilization Trackers
9. Feasibility Studies / Line Extension Policies
10. Pipeline Integrity Management Riders
11. Utility Mergers and Acquisitions
12. Injection of Bio-Gas Into Natural Gas Pipelines

Appendix B

SHAWN L. DORGAN

Qualifications and Experience

I am a two-time accounting graduate of Appalachian State University, having earned a B.S.B.A. in Accountancy in 1988 and a Master's of Science in Accountancy (concentration in taxation; functional equivalent of an MST) in 1997. After graduation in August of that year I entered the public accounting industry, working first at the Charlotte practice office of Deloitte & Touche LLP, and later for several local and regional accounting firms in the metro-Charlotte, metro-Raleigh, and metro-Atlanta areas. I am a Certified Public Accountant, licensed in the State of North Carolina. My license number is 27030.

I joined the Public Staff in May 2016 and since have specialized in providing accounting support in conjunction with rider rate proceedings in both the Natural Gas and Electric Divisions, focusing primarily on program cost reviews of energy efficiency programs authorized for the state's electric utilities under N.C.G.S. §62-133.9 – *Cost recovery for demand-side management and energy efficiency measures* – and analytical reviews of tax issues connected to Piedmont Natural Gas Company's annual integrity management rider proceedings (*In the Matter of Annual Integrity Management Rider Report of Piedmont Natural Gas Company, Inc., Pursuant to Appendix E of Its Service Regulations*, Docket Numbers G-9 Sub 715, and G-9 Sub 734).

Additionally, I have provided testimony in connection with annual gas cost review proceedings of Frontier Natural Gas Company LLC, as well as accounting support in rate cases involving North Carolina's two largest investor-owned electric utilities. This support centered on applicant rate-base requests in the area of cash working capital, and in particular on detailed analyses of accounting transactions underlying applicant lead-lag schedules.

Appendix C

JULIE G. PERRY

Qualifications and Experience

I graduated from North Carolina State University in 1989 with a Bachelor of Arts degree in Accounting and I am a Certified Public Accountant.

Prior to joining the Public Staff, I was employed by the North Carolina State Auditor's Office. My duties there involved the performance of financial and operational audits of various state agencies, community colleges, and Clerks of Court.

I joined the Public Staff in September 1990, and was promoted to Supervisor of the Natural Gas Section in the Accounting Division in September 2000. I was promoted to Accounting Manager – Natural Gas & Transportation effective December 1, 2016. I have performed numerous audits and/or presented testimony and exhibits before the Commission addressing a wide range of natural gas topics.

Additionally, I have filed testimony and exhibits in numerous water rate cases and performed investigations and analyses addressing a wide range of topics and issues related to the water, electric, transportation, and telephone industries.

Frontier Natural Gas Company
Docket No. G-40, Sub 149
Public Staff Recommended Correcting Entries
To Deferred Gas Cost Account Balance
(Debit) Credit

Correcting Journal Entries as of:	Beginning Balance	Public Staff Adjustment	Interest	Adjustment w/ Interest
Jan-18	$0	($487,305)	($1,340)	($488,645)
Feb-18	($488,645)	243,359	($2,018)	($247,304)
Mar-18	($247,304)		($1,360)	($248,665)
Apr-18	($248,665)		($1,368)	($250,032)
May-18	($250,032)		($1,375)	($251,407)
Jun-18	($251,407)		($1,383)	($252,790)
Jul-18	($252,790)		($1,390)	($254,180)
Aug-18	($254,180)		($1,398)	($255,578)
Sep-18	($255,578)		($1,406)	($256,984)
Oct-18	($256,984)		($1,413)	($258,398)
Nov-18	($258,398)		($1,421)	($259,819)
Dec-18	($259,819)		($1,429)	($261,248)
Jan-19	($261,248)		($1,437)	($262,685)
Feb-19	($262,685)		($1,445)	**($264,129)**
		($243,946	($20,183	

Annual Interest Rate	6.600%
Monthly Interest Rate	0.550%