

**Before the  
North Carolina Utilities Commission**

**Docket No. G-9 Sub 811**

**Annual Review of Gas Costs Pursuant to G.S. 62-133.4(c) and  
Commission Rule R1-17(k)(6)**

**Testimony and Exhibits  
of  
Jeffrey Patton**

**On Behalf Of  
Piedmont Natural Gas Company, Inc.**



**August 1, 2022**

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

2 A. My name is Jeffrey Patton. My business address is 4720 Piedmont Row  
3 Drive, Charlotte, North Carolina.

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

5 A. I am employed by Duke Energy Corporation (“Duke”) and work on behalf of  
6 Piedmont Natural Gas Company, Inc. (“Piedmont” or the “Company”), a  
7 wholly owned subsidiary of Duke, as the Manager of Pipeline Services.

8 **Q. Please describe your educational and professional background.**

9 A. I graduated from Mississippi State University with a Bachelor of Science  
10 Degree in Mechanical Engineering in 1996. In 1998, I graduated from Auburn  
11 University with a Master of Business Administration, Finance concentration.  
12 I was employed by Southern Company from 1998 to 2003 in various roles in  
13 Generation Planning and Development, as well as Energy Marketing. I was  
14 employed by Consolidated Edison from 2004 to 2005 as a Senior Rate  
15 Analyst. I served as a Senior Business Financial Analyst at Progress Energy  
16 from 2005 to mid-2008 and was responsible for wholesale electric revenue  
17 forecasting. From mid-2008 to early 2019, I was an Originator in the Fuels  
18 & Systems Optimization Department for Progress Energy (which merged  
19 with Duke), and I was responsible for the procurement of natural gas supply,  
20 transportation and storage services for Duke’s natural gas-fired power  
21 generation facilities. In February 2019, I accepted the position of Manager of  
22 Pipeline Services.

1 **Q. Please describe the scope of your present responsibilities.**

2 A. My current major responsibilities include the supervision of Piedmont's  
3 pipeline capacity planning and relations, annual design day and daily  
4 forecasting. In addition, I am responsible for the oversight of activities at the  
5 Federal Energy Regulatory Commission ("FERC") regarding interstate  
6 pipelines and storages that the Company utilizes for transportation and  
7 storage services.

8 **Q. Have you previously testified before this Commission or any other  
9 regulatory authority?**

10 A. Yes. I have previously testified before this Commission in Piedmont's Annual  
11 Review of Gas Costs (Docket Nos. G-9, Sub 771 and Sub 791) and before the  
12 Public Service Commission of South Carolina in their similar annual reviews  
13 for Piedmont (Docket Nos. 2020-4-G, 2021-4-G and 2022-4-G).

14 **Q. What is the purpose of your prefiled direct testimony in this proceeding?**

15 A. My testimony is filed in response to the requirements of Commission Rule  
16 R1-17(k)(6), which provides for an annual review of Piedmont's gas costs.  
17 My testimony discusses the market requirements of Piedmont's North  
18 Carolina customers, including the projected growth in those markets, the  
19 capacity acquisition policies and practices we employ to serve those markets,  
20 the calculation of our design day requirements, and the efforts undertaken by  
21 Piedmont at the FERC on behalf of its customers to ensure that interstate  
22 transportation and storage services are reasonably priced.

1 **Q. Do you have any exhibits attached to your testimony?**

2 A. Yes, I have the following exhibits attached to my testimony:

3 Exhibit Number: Description

4 JCP-1A: Winter 2021 - 2022 Forecast Load Duration Curve

5 JCP-1B: Winter 2021 - 2022 Actual Load Duration Curve

6 JCP-2: Winter 2022 - 2023 Forecast Load Duration Curve

7 JCP-3: 2018 Weather Events

8 JCP-4A: Winter 2021 - 2022 Design Day Start Point

9 JCP-4B: Customer Growth - Actual and Projection for 2021-2022 Planning

10 JCP-4C: Winter 2021 - 2022 Design Day Demand & Supply Schedule

11 JCP-5A: Winter 2022 - 2023 Design Day Start Point

12 JCP-5B: Customer Growth - Actual and Projection for 2022-2023 Planning

13 JCP-5C: Winter 2022-2023 Design Day Demand & Supply Schedule

14 JCP-6: FERC Filings June 2021 - May 2022

15 JCP-7: Design Day Temperature

16 JCP-8: Total Firm Sales Forecasted Demand Comparison

17 JCP-9: Design Winter Load Duration Curve Comparison

18 **Q. Were those exhibits prepared by you or under your direction?**

19 A. Yes.

20 **Q. What is the period of review (“Review Period”) in this docket?**

21 A. The Review Period is June 1, 2021 through May 31, 2022.

1 **Q. Please give a general description of Piedmont and its market in North**  
2 **Carolina.**

3 A. Piedmont is a local distribution company principally engaged in the purchase,  
4 distribution, and sale of natural gas to more than 1.1 million customers in  
5 North Carolina, South Carolina, and the metropolitan area of Nashville,  
6 Tennessee. Piedmont currently serves approximately 793,000 customers in  
7 the State of North Carolina. During the Review Period, Piedmont delivered  
8 approximately 484 million dekatherms (“dts”) of natural gas to its North  
9 Carolina customers.

10 Piedmont provides service to two distinct markets – the firm market  
11 (principally those that have no alternate source of fuel) and the interruptible  
12 market (principally those that either have access to an alternate fuel or who  
13 are prepared to cease operating in the event of interruption until service can  
14 be resumed). Although Piedmont competes with electricity for the  
15 attachment of firm customers, once attached these customers generally have  
16 no readily available alternative source of energy and depend on natural gas  
17 for their basic space heating or utility needs. During the Review Period,  
18 approximately 93%, of Piedmont’s North Carolina deliveries were to the firm  
19 market.

20 In the interruptible market, Piedmont competes on a month-to-  
21 month and day-to-day basis with alternative sources of energy, primarily fuel  
22 oil or propane and, to a lesser extent, coal or wood. These larger commercial  
23 and industrial customers may buy alternate fuels when they are less expensive

1 than gas or when their service is interrupted by Piedmont. During the Review  
2 Period, approximately 7% of Piedmont's North Carolina deliveries were to  
3 the interruptible market.

4 **Q. Do the market requirements of Piedmont's North Carolina customers**  
5 **change from year-to-year?**

6 A. Yes. The market requirements of Piedmont's North Carolina customers  
7 continue to increase year-over-year because Piedmont's customer base in  
8 North Carolina continues to grow. Such growth is most robust in the  
9 residential sector. As mentioned above, Piedmont currently serves  
10 approximately 793,000 customers in North Carolina. One year ago, as  
11 mentioned in my testimony last year, Piedmont had about 783,000 customers  
12 in North Carolina. Therefore, understanding and projecting customer growth  
13 is an important component of the planning Piedmont undertakes to ensure it  
14 will be able to serve the market requirements of its North Carolina customers.  
15 Absent the incorporation of customer growth in its planning process,  
16 Piedmont would be unable to ensure the reliable provision of firm natural gas  
17 service to its firm sales customers, most critically in the winter season.

18 **Q. How does Piedmont calculate its customer growth?**

19 A. Piedmont reviews historical customer additions, holds discussions with  
20 various business leaders/trade allies and field sales employees, and considers  
21 forecasts of local, regional and national business drivers (i.e., economic  
22 conditions, demographics, etc.) to derive projections of the change in its  
23 customer count over time.

1 **Q. Are there any changes in the Company’s customer mix or customer**  
2 **market profiles that it forecasts for the next five years?**

3 A. Yes. The Company expects North Carolina’s economy to continue to grow,  
4 resulting in increasing residential and commercial demand for natural gas  
5 service from Piedmont as detailed in the “Winter 2022 - 2023 Design Day  
6 Demand & Supply Schedule”, **Exhibit\_(JCP-5C)**.

7 **Q. How will these changes impact the Company’s gas supply,**  
8 **transportation, and storage requirements?**

9 A. The residential and commercial growth changes will result in greater firm  
10 temperature-sensitive requirements that must be provided by the Company.

11 **Q. Please identify the rate schedules and special contracts that the Company**  
12 **uses to determine its design day demand requirements for planning**  
13 **purposes and explain the rationale and basis for each rate schedule or**  
14 **special contract included in the determination of design day demand**  
15 **requirements.**

16 A. The Company uses the following rate schedules, each of which is for firm  
17 sales service, to determine its design day demand requirements:

- 18 • 101 – Residential Service;
- 19 • 102 – Small General Service;
- 20 • 152 – Medium General Service;
- 21 • 143 – Experimental Motor Vehicle Fuel Service;
- 22 • 103 – Large General Sales Service;

- 1                   •       12 – Service to Military Installations in Onslow County  
2                   (Camp Lejeune).

3 Piedmont also includes any special contracts for which Piedmont is providing  
4 firm sales service in the determination of its design day requirements.

5 **Q. In its planning to serve firm customer requirements during the Review**  
6 **Period, how did the Company calculate its Design Day requirements for**  
7 **Winter 2021 - 2022?**

8 A. Piedmont’s Design Day calculations for Winter 2021 –2022 were performed  
9 using the same methodology as described in my testimony for last year’s  
10 Annual Review proceeding. In summary, Piedmont performed a linear  
11 regression analysis of its most recent customer data (actual customer sendout  
12 data from November 2016 through March 2021 for all customer classes) so  
13 as to update its understanding of how our customers use natural gas for base  
14 load purposes and in response to weather (i.e. usage per heating degree day).  
15 Piedmont then applied its customer growth projection for Winter 2020 – 2021  
16 to that updated customer usage, inclusive of a five percent (5%) reserve  
17 margin, to arrive at its Design Day requirements for Winter 2021 – 2022. I  
18 explain the need for such a reserve margin in the Company’s Design Day  
19 requirements planning later in my testimony. Finally, the Company also  
20 reviewed its historic temperature data. From that review, Piedmont  
21 determined that an update of Design Day temperature from 8.71 to 8.69  
22 degrees Fahrenheit was warranted. The update in Design Day temperature  
23 comports with a change in Design Day HDD from 56.29 HDD to 56.31 HDD.



1 This modification to the Design Day HDD was warranted due to the  
2 allocation of weather station percentages based on the current customer  
3 service areas.

4 **Q. Did the Company consider efficiency gains and customer conservation in**  
5 **its design day methodology?**

6 A. Yes. The design day methodology is based on refreshed data which represents  
7 the customer consumption over a recent period of time and eliminates old  
8 customer consumption data, therefore the customer efficiency gains and  
9 conservation efforts are taken into consideration.

10 **Q. Does Piedmont find that conservation measures utilized by customers are**  
11 **necessarily applicable when planning for design day customer**  
12 **requirements?**

13 A. No. Piedmont and the natural gas industry have not seen evidence that  
14 conservation/reduced usage for the firm customer load occurs during design  
15 day type conditions. The most recent winter cold snap, which occurred from  
16 December 30, 2017 through January 8, 2018, gave Piedmont an opportunity  
17 to refresh data and analyze customer behavior during extremely cold weather.  
18 We continued to observe that firm customers in aggregate tend to conserve  
19 for the first few days of colder temperatures before turning up the thermostat.  
20 However, once adjusted to a warmer setting, customers appear to become less  
21 focused on conservation and more focused on comfort and leave the  
22 thermostat at the warmer level for a few days even as temperatures start to  
23 moderate. This pattern is illustrated in **Exhibit\_(JCP-3)**. Given what

1 Piedmont experienced in the winter of 2017 – 2018 as an aggregate firm  
2 customer response to colder temperatures in this pattern, the Company is  
3 confident this conservative approach to Design Day forecasting is the most  
4 prudent approach. Piedmont’s focus has been and continues to be to fully and  
5 reliably serve our firm customers on a Design Day.

6 **Q. What were the Design Day demand requirements used by the Company**  
7 **for planning purposes during the Review Period, the number of heating**  
8 **degree days, dekatherms per heating degree day, customer growth rates**  
9 **and supporting calculations used to determine the Design Day**  
10 **requirement?**

11 A. Please see **Exhibits\_(JCP-4A, 4B and 4C)** for these details. Ultimately,  
12 these exhibits show that Piedmont’s Design Day planning for Winter 2021-  
13 2022 was for 1,431,452 dts of total firm sales customer requirements on  
14 Design Day.

15 **Q. What was the estimated base load demand requirement of the firm**  
16 **markets for the Review Period?**

17 A. Please see **Exhibit\_(JCP-4A)**.

18 **Q. Does the Company plan for a reserve margin to accommodate statistical**  
19 **anomalies, unanticipated supply or capacity interruptions, force**  
20 **majeure, emergency gas usage or colder-than-design day weather?**

21 A. Yes, the Company computes a five percent (5%) reserve margin and arranges  
22 for supply and capacity to provide delivery of the reserve margin for events  
23 such as those listed above. This reserve margin is reflected in the Design Day

1 demand planning calculations shown in **Exhibit\_ (JCP-4C)** and **Exhibit\_**  
2 **(JCP-5C)**.

3 **Q. In its planning to serve customer requirements during the Review**  
4 **Period, how did the Company calculate its requirements for days other**  
5 **than Design Day during Winter 2021 – 2022?**

6 A. Piedmont constructed a load duration curve to forecast the Company's firm  
7 sales market requirements for design winter weather conditions. The supply  
8 requirements were plotted in descending order of magnitude, with existing  
9 pipeline capacity and storage resources overlaid to expose any supply  
10 shortfalls. The load duration curve for the Winter 2021 – 2022, as forecasted  
11 in the immediate planning for Winter 2021 – 2022, is shown in  
12 **Exhibit\_(JCP-1A)**. For ease of comparison, I plotted the actual Winter 2021  
13 – 2022 experience in **Exhibit\_(JCP-1B)**.

14 **Q. Did the Company appropriately plan to serve its customer requirements**  
15 **for the Review Period including Winter 2021 – 2022?**

16 A. Yes. Piedmont fully and reliably served the firm sales requirements of its  
17 North Carolina customers during the Review Period.

1                    **Design Day and Winter Season Planning for Future Periods:**

2                    **Winter 2022 – 2023 through Winter 2026 – 2027**

3    **Q. In Docket No. G-9, Sub 791 the North Carolina Utilities Commission**  
4    **Ordered “That Piedmont shall include an update on its discussions with**  
5    **the Public Staff regarding the Company’s design day demand estimation**  
6    **methodology and Design Winter Load Duration Curve calculations, and**  
7    **include a description of any changes Piedmont has made to its demand**  
8    **forecasting and capacity planning as a result of these discussions in its**  
9    **direct testimony in its next annual review filing in 2022.” Please**  
10   **summarize the steps taken by Piedmont to address this point in the**  
11   **Order.**

12   **A.** The Company met with Public Staff four times (April 4, April 25, May 2,  
13   and May 23) to review and discuss the five refinements to the Company’s  
14   design day demand methodology identified by Public Staff witness Metz in  
15   the Public Staff Panel testimony. During the Company’s review of the five  
16   refinements, the Company retained Marquette Energy Analytics (“MEA”) to  
17   perform a design day demand and load duration curve study to best address  
18   the five refinements. On July 28, the Company, MEA, and Public Staff met  
19   to review the results of the study and the Company provided an update on the  
20   direction it plans to take to forecast the design day demand and load duration  
21   curve for the 2022 – 2023 Winter.

1 **Q. As a result of these discussions with Public Staff, has the Company made**  
2 **any changes to its calculation of design day requirements for the future?**

3 A. Yes, Piedmont has elected to use the design day demand and load duration  
4 curve developed by MEA to forecast the Company's requirements for the  
5 2022 – 2023 Winter.

6 **Q. Provide an overview of how the design day peak demand for the 2022-**  
7 **2023 winter was calculated.**

8 A. MEA's design day forecast is a multi-step analytical process. The analysis  
9 and resulting forecast are based on relationships between natural gas demand,  
10 and factors including temperature, wind, prior day temperature and wind,  
11 day-of-week and day-of-year variables as well as persistent trends in these  
12 variables. A critical factor in MEA's analysis is the inclusion of wind in  
13 addition to temperature as a factor in modelling demand, recognizing that  
14 wind plays a significant role in the demand for natural gas, especially during  
15 cold temperatures. MEA calculates wind-adjusted temperature and wind-  
16 adjusted Heating-Degree Days ("HDDW") for use the analysis and calculates  
17 design day conditions ("DDC") as wind-adjusted temperature and HDDW.

18 At the inception of a design day study, MEA first acquires and  
19 validates all data necessary for the analysis. This includes historical demand  
20 data for each service territory, and weather data relevant to the service  
21 territory or territories. The weather data, potentially from multiple weather  
22 stations, is then optimally weighted to best represent the service territories'  
23 demand, and then used to develop the DDC.

1 MEA then adjusts, or “detrends,” historical load data to make past  
2 data “look like” current data to ensure that forecasts are based on data that  
3 reflects the current customer levels and characteristics. This detrending  
4 process adjusts or “normalizes” past data to account for customer growth (or  
5 decrease) and changes in baseload and heat load (use per HDDW) demand.  
6 MEA first calculated historical per-customer load from past load and number  
7 of customers, then detrended the resulting per-customer load to account for  
8 historical changes in per-customer baseload and heat load demand.

9 In developing the design day demand forecast, MEA uses an  
10 ensemble of eight regression models, each considering different factors that  
11 affect demand. MEA first calculates an estimate of design day demand for the  
12 past winter, then using historical trends in demand uncovered by the  
13 regression models, forecasts design day demand for the next winter. The final  
14 forecast is a weighted average of the eight individual models. Assumptions  
15 about customer growth as well as additional techniques incorporating  
16 economic variables are employed to forecast design day demand for the next  
17 five winters.

18 **Q. How did MEA calculate the Design Day Conditions (“DDC”) that MEA**  
19 **utilized to project the Company’s Design Day peak demand forecast for**  
20 **the future?**

21 **A** MEA calculated a 1-in-30-year design day conditions (“DDC”) for three  
22 geographical areas (NC East, NC West, and SC) in Piedmont’s service  
23 territory that are based on a weather event (measured in HDDW) that is

1 expected to occur only once every 30 years. For a 1-in-30-year event, there is  
2 a 3.3% chance of it occurring each year. MEA's calculation of the DDC is  
3 based on statistical methods applied to the 121 days of the year with the  
4 coldest, wind-adjusted, normal daily average temperature, approximately  
5 late-November through late-March, back to 1950. The 1-in-30-year  
6 temperature conditions are calculated using wind-adjusted temperatures and  
7 converted into HDDW.

8 **Q. Why did the Company make this change to utilize MEA's calculation of**  
9 **Design Day requirements for the future?**

10 A. Utilizing MEA's calculation for the Company's design day requirements for  
11 the future (Winter 2022 – 2023) provides a reasonable forecast that addresses  
12 the five refinements requested by the Public Staff in last year's Annual  
13 Review.

14 **Q. How does MEA's design day methodology address each of the five**  
15 **refinements listed below?**

16 **(1) firm sales customers should only be assigned their percentage of**  
17 **LAUF gas;**

18 **(2) temperature data for system usage, weighted HDDs, and the design**  
19 **day temperature should be on or near the same time interval and**  
20 **weighted by the same methodologies;**

21 **(3) historical system usage data should be normalized for each respective**  
22 **year's actual customer growth;**

23 **(4) evaluation of linear versus non-linear regression; and**

1       **(5) evaluation of weekend usage and a determination of whether it is**  
2       **appropriate to include typically low usage days for system planning**  
3       **purposes.**

4       A.1 MEA’s analysis and forecast is of firm sales (“FS”) loads only, and Piedmont  
5       provided the usage data to MEA that appropriately allocates FS customers  
6       only their share of LAUF and Company Use based on a methodology  
7       discussed previously with Public Staff during April and May.

8       A.2 MEA calculates wind-adjusted temperature and HDDW with the average of  
9       observed hourly temperature and wind data over the NAESB Gas Day (9:00  
10       am to 9:00 am, Central Time), consistent with metered natural gas load. In  
11       MEA’s analysis, there is no inconsistency between the time periods of  
12       measured climate variables and metered demand; both align with the NAESB  
13       Gas Day.

14       A.3 MEA’s design day forecast takes into account customer growth, as well as  
15       historically changing characteristics of per-customer demand, to ensure that  
16       forecasts reflect current customer levels and behavior. As stated previously,  
17       MEA adjusts, or “detrends,” historical sendout data to make past data “look  
18       like” current data to ensure that forecasts are based on data that reflects the  
19       current customer base and demand characteristics. This detrending process  
20       adjusts, or “normalizes” past data to account for customer growth (or  
21       decrease) and changes in baseload and heat load (use per HDDW) demand.  
22       In the design day study prepared for Piedmont, MEA first calculates historical  
23       per-customer load from past load and number of customers, then detrends the



1 resulting per-customer load to account for historical changes in per-customer  
2 baseload and heat load demand.

3 A.4 In MEA’s view and experience, natural gas demand can effectively be modeled  
4 and forecasted with linear regression techniques. Extreme outlying events  
5 which may appear to be non-linear are often effectively explained by  
6 including a prior day HDDW variable, or day-to-day change in HDDW, in  
7 the regression equation. One non-linear aspect of demand that MEA has  
8 noticed is that in warmer regions including North Carolina and South  
9 Carolina, demand per HDDW is larger during colder than average winters  
10 relative to warmer winters as the customer base is not accustomed to cold  
11 weather. In colder climates, demand per HDDW tends to be constant  
12 regardless of the severity of the winter. To correct for this observed “non-  
13 linearity”, MEA added a Winter Severity Adjustment when forecasting  
14 design demand in warmer climates including the forecast developed for the  
15 Company.

16 A.5 MEA’s analysis and forecasts account for potential “low usage” on weekend  
17 days with several methods. As stated previously, MEA uses an ensemble of  
18 eight models to model and forecast demand. Several of these models only use  
19 data from Monday through Thursday (not Friday, because Friday gas day  
20 includes Saturday morning). Other models contain cyclical day-of-week  
21 factors to take into account varying demand over different days of the week.  
22 When forecasting design demand with these models, MEA assumes it is a  
23 high-demand Wednesday.

1 **Q. How does MEA's 1-in-30 DDC based on HDDW compare to Piedmont's**  
2 **56.31 HDD design day condition used for Winter 2021 - 2022?**

3 A. MEA's 1-in-30-year DDC is stated as a Wind-Adjusted HDD, or HDDW, and  
4 MEA calculated such DDC for each of the NC East, NC West, and SC  
5 operating areas. Given that, MEA's weighted average 1-in-30-year DDC for  
6 the total Carolinas is 58.3 HDDW. The 56.31 HDD the Company calculated  
7 for the Winter 2021-2022 was based a Design Day temperature of 8.69  
8 degrees Fahrenheit from January 21, 1985 (coldest observed temperatures in  
9 40 years) on Piedmont's overall system and this temperature is not wind-  
10 adjusted.

11 **Q. Did this change in methodology significantly impact the Company's**  
12 **Design Day requirements for the future?**

13 A. No. While this change is an improvement to the Company's methodology for  
14 determining Design Day requirements and incorporates the Public Staff's five  
15 refinements, it did not yield a significant change to the quantification of the  
16 Design Day requirement. To illustrate this, please see **Exhibit (JCP-8)**,  
17 which shows the calculation of Design Day requirements for Winter 2022 –  
18 2023 based on the previous methodology compared to MEA's forecast. The  
19 previous methodology calculated a total firm sales demand of 1,421,957 dts  
20 compared to the new methodology of 1,522,216 dts, a difference of 100,260  
21 dts or approximately 7.05%.

1 **Q. Did the Company apply a reserve margin to accommodate statistical**  
2 **anomalies, unanticipated supply or capacity interruptions, force**  
3 **majeure, emergency gas usage or colder-than-design day weather to**  
4 **MEA's design day demand forecast?**

5 A. Yes, the Company applied a five percent (5%) reserve margin (same as  
6 historically) to MEA's design day forecast and arranges for supply and  
7 capacity to provide delivery of the reserve margin for events such as those  
8 listed above. The Company believes that a 5% reserve margin is prudent to  
9 address the possibility of disruptions to supply or capacity or extreme  
10 variations in weather or customer usage, all of which are reasonably possible  
11 in the context of weather approaching Design Day conditions.

12 **Q. Please provide an update on the methodology for calculating Company's**  
13 **Design Winter Load Duration Curve as a result of discussions with the**  
14 **Public Staff.**

15 A. For the 2021-2022 Winter, Piedmont's Design Winter Load Duration Curve  
16 was based on input weather data from the 1976-1977 Winter period in the  
17 Company's service territory (the highest total winter HDDs in the last 44  
18 years). The Public Staff recommended that the Company apply any updates  
19 to its design day calculation methodology to its Design Winter Load Duration  
20 Curve calculations. As a result, the Company retained MEA to develop a  
21 Design Winter Load Duration Curve for the 2022-2023 Winter based on 1-  
22 in-30-year conditions to align with MEA's design day calculation.

1 **Q. How did MEA calculate the Company's Design Winter Load Duration**  
2 **Curve for the 2022-2023 Winter?**

3 A. MEA uses models of Piedmont's demand, developed in modeling design day  
4 demand, along with 72 years of daily data back to 1950 to calculate 72  
5 hypothetical winter load duration curves. The average or "normal" winter  
6 load duration curve is the average of these 72 hypothetical load duration  
7 curves. From the 72 hypothetical load duration curves, a probability  
8 distribution is calculated, and from that, a 1-in-30-year total winter load is  
9 calculated. From the 1-in-30-year winter load, a 1-in-30-year load duration  
10 curve is calculated using the 15 highest hypothetical winters as a model (1-  
11 in-30 Archetypes). The 1-in-30-year load duration curve is constructed to  
12 contain a 1-in-30-year design day. The current load duration curve projection  
13 for this coming winter (Winter 2022-2023) calculated by MEA is shown in  
14 **Exhibit\_(JCP-2).**

15 **Q. How does MEA's 1-in-30 LDC compare to Piedmont's LDC based on the**  
16 **1976-1977 winter?**

17 A. MEA's 1-in-30-year load duration curve has a very similar total load to the  
18 1976-1977 winter, however MEA's load duration contains a higher peak-day  
19 load as it is constructed to contain a 1-in-30-year design day. A comparison  
20 of MEA's 1-in-30-year load duration curve to the 1976-1977 winter is shown  
21 in **Exhibit\_(JCP-9).**

1 **Q. What are the newly forecasted Design Day demand requirements used**  
2 **by the Company for planning purposes for the upcoming winter (Winter**  
3 **2022 – 2023) and for the next four winter seasons, the amount of heating**  
4 **degree days, dekatherms per wind adjusted heating degree day,**  
5 **customer growth rates and supporting assumptions used to determine**  
6 **the Design Day requirement amounts?**

7 A. Please see Exhibits\_(JCP-5A, 5B, and 5C and 7).

8 **Q. What is the newly forecasted base load demand requirement for the**  
9 **upcoming winter season?**

10 A. Please see Exhibit\_ (JCP-5A).

11 **Q. Does the Company plan to continue to retain MEA to calculate its Design**  
12 **Day Demand and Design Winter Load Duration Curve based on a 1-in-**  
13 **30-year conditions in future years?**

14 A. Yes. The Company’s design day demand and design winter load duration  
15 curve forecasting process is dynamic, and the Company will continue to  
16 review its planning process and approach to determine if further changes are  
17 warranted.

18 **Supply & Capacity Planning to Serve Customer Demand**

19 **Q. Is it possible to maintain capacity rights that exactly match Piedmont’s**  
20 **calculated Design Day demand plus reserve margin at all times?**

21 A. No. Capacity additions are acquired in “blocks” of additional transportation,  
22 storage, or LNG capacity, as current and future needs are identified to ensure  
23 Piedmont’s ability to serve its customers based on the options available at that

1 time. As a practical matter, this means that at any given moment in time,  
2 Piedmont's actual capacity assets will vary somewhat from its forecasted  
3 demand capacity requirements. This aspect of capacity planning is  
4 unavoidable but Piedmont attempts to mitigate the impact of any mismatch  
5 through its use of bridging services, capacity release, and off-system sales  
6 activities.

7 **Q. What process does Piedmont undertake to acquire firm capacity to meet**  
8 **its growing sales market requirements?**

9 A. Piedmont secures incremental capacity to meet the growth requirements of its  
10 firm sales customers consistent with its "best cost" policy, as described in the  
11 testimony of Company Witness Todd Breece. To implement this policy,  
12 Piedmont attempts to contract for timely and cost-effective capacity that is  
13 tailored to the demand characteristics of its market. Piedmont evaluates  
14 interstate pipeline capacity and storage offerings expected to be available at  
15 the time that it is determined that additional future firm delivery service will  
16 be required or prior to the expiration of existing firm delivery service  
17 contracts. The Company attempts to match the days of service of new  
18 incremental transportation capacity to the duration of its incremental demand  
19 on the most economical basis. Piedmont attempts to acquire peaking services  
20 to meet projected peak day demand, storage services to meet projected  
21 seasonal demand, and year-round firm transportation services to meet base  
22 load demand and to provide available capacity for storage inventory

1 replenishment. However, service choices are limited to those offered during  
2 the period being evaluated.

3 **Q. Please describe how the Company plans to serve its firm sales**  
4 **requirements for the next five winter seasons.**

5 A. Based on the current projections of its firm sales demand, Piedmont believes  
6 that it has sufficient supply and capacity rights to meet its customer needs for  
7 the upcoming winter season. Piedmont owns and operates three on-system  
8 liquefied natural gas (“LNG”) peaking facilities in North Carolina, with the  
9 newest LNG facility – the Robeson LNG facility – placed into service in late  
10 August 2021. Piedmont increased the Design Day output of its Bentonville  
11 LNG peaking facility from 90,000 dts per day to 110,000 dts per day  
12 beginning in the winter 2020 – 2021 season, and the new Robeson LNG  
13 facility currently provides 200,000 dts per day of peaking supply of natural  
14 gas.

15 **Q. Please discuss Piedmont’s plans to address the future requirements that**  
16 **would have been met by the ACP project.**

17 A. Piedmont had contracted for 160,000 dts per day of year-round firm capacity  
18 on the ACP Project to provide additional upstream capacity, supply access,  
19 and infrastructure. Following the cancellation of the ACP Project in July  
20 2020, Piedmont evaluated interstate pipeline alternatives to serve future  
21 demand combined with system infrastructure requirements that would have  
22 been met by ACP. In the summer of 2021, Piedmont entered into a  
23 confidential, binding precedent agreement with Transcontinental Gas Pipe

1 Line Company, LLC (“Transco”) to secure additional incremental firm  
2 pipeline service via Transco’s Southside Reliability Enhancement (“SRE”)  
3 Project that is targeted to be placed in-service on December 1, 2024. The SRE  
4 Project will provide Piedmont with 160,000 dts per day of incremental firm  
5 pipeline service via Transco’s South Virginia Lateral (“SVL path”) to  
6 delivery points in Piedmont’s eastern North Carolina service territory. The  
7 SVL path provides redelivery of natural gas supply from the interconnect of  
8 Transco’s mainline in Zone 5 and the South Virginia Lateral at Station 165.  
9 Piedmont anticipates utilizing existing upstream contractual transportation  
10 and storage arrangements to access upstream non-Transco Zone 5 priced  
11 supply to deliver into the SVL path, as reflected on Exhibit\_(JCP 5C).  
12 Additionally, the SRE Project will provide a separate firm pipeline service  
13 path of 263,400 dts per day from Transco’s interconnect with Pine Needle  
14 LNG to Piedmont’s Iredell meter (“Iredell path”) located in Iredell County,  
15 North Carolina. Piedmont has an existing contract with Pine Needle LNG for  
16 263,400 dts per day and has been utilizing Piedmont’s existing Transco  
17 transportation contracts on a secondary firm basis to deliver supply from Pine  
18 Needle to Iredell. Secondary deliveries may no longer be reliable to deliver  
19 Pine Needle volumes under some operating conditions due to changes on the  
20 Transco system. In order to ensure reliable deliveries from Pine Needle during  
21 peak periods, Piedmont elected to seek primary firm capacity rights to deliver  
22 these Pine Needle volumes to its citygate.



1 **Q. Has the Company made any changes to its interstate capacity rights**  
2 **during the Review Period?**

3 A. The Company did not make any changes to its interstate capacity rights during  
4 the Review Period.

5 **Q. Please describe the Company's interest and position on any issues before**  
6 **the FERC that may have an impact on the Company's operations and a**  
7 **description of the status of each proceeding described.**

8 A. The Company routinely intervenes and participates in interstate natural gas  
9 pipeline proceedings before the FERC. A current summary of the proceedings  
10 in which Piedmont is a party is detailed in **Exhibit\_(JCP-6)**.

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

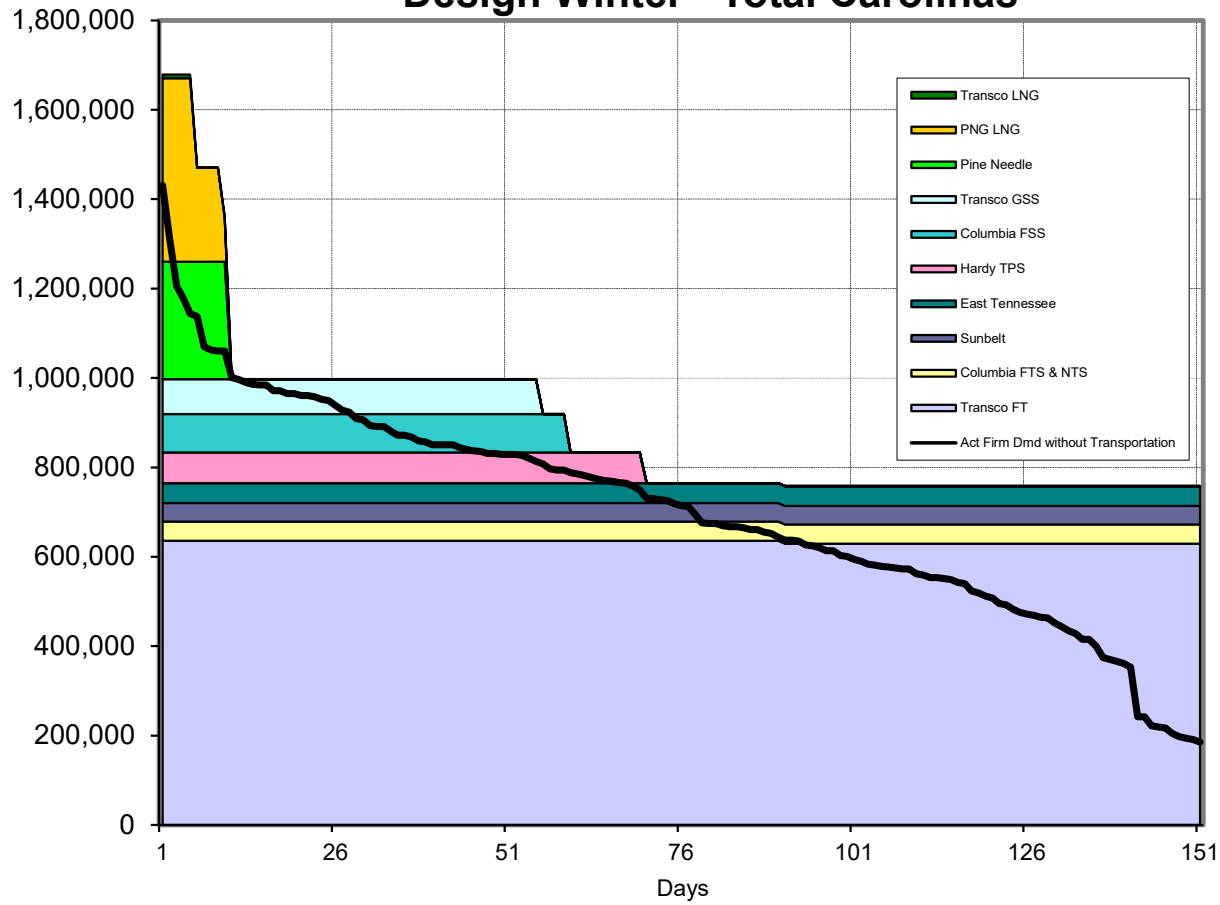
12 A. Yes, it does.

Index - JCP Exhibits

<u>Exhibit Number</u>	<u>Description</u>
JCP-1A	Winter 2021 - 2022 Forecast Load Duration Curve
JCP-1B	Winter 2021 - 2022 Actual Load Duration Curve
JCP-2	Winter 2022 - 2023 Forecast Load Duration Curve
JCP-3	2018 Weather Events
JCP-4A	Winter 2021 - 2022 Design Day Start Point
JCP-4B	Customer Growth - Actual and Projection for 2021-2022 planning
JCP-4C	Winter 2021 - 2022 Design Day Demand & Supply Schedule
JCP-5A	Winter 2022 - 2023 Design Day Start Point
JCP-5B	Customer Growth - Actual and Projection for 2022-2023 planning
JCP-5C	Winter 2022-2023 Design Day Demand & Supply Schedule
JCP-6	FERC Filings June 2021 to May 2022
JCP-7	Design Day Temperature
JCP-8	Total Firm Sales Forecasted Demand Comparison
JCP-9	Design Winter Load Duration Curve Comparison

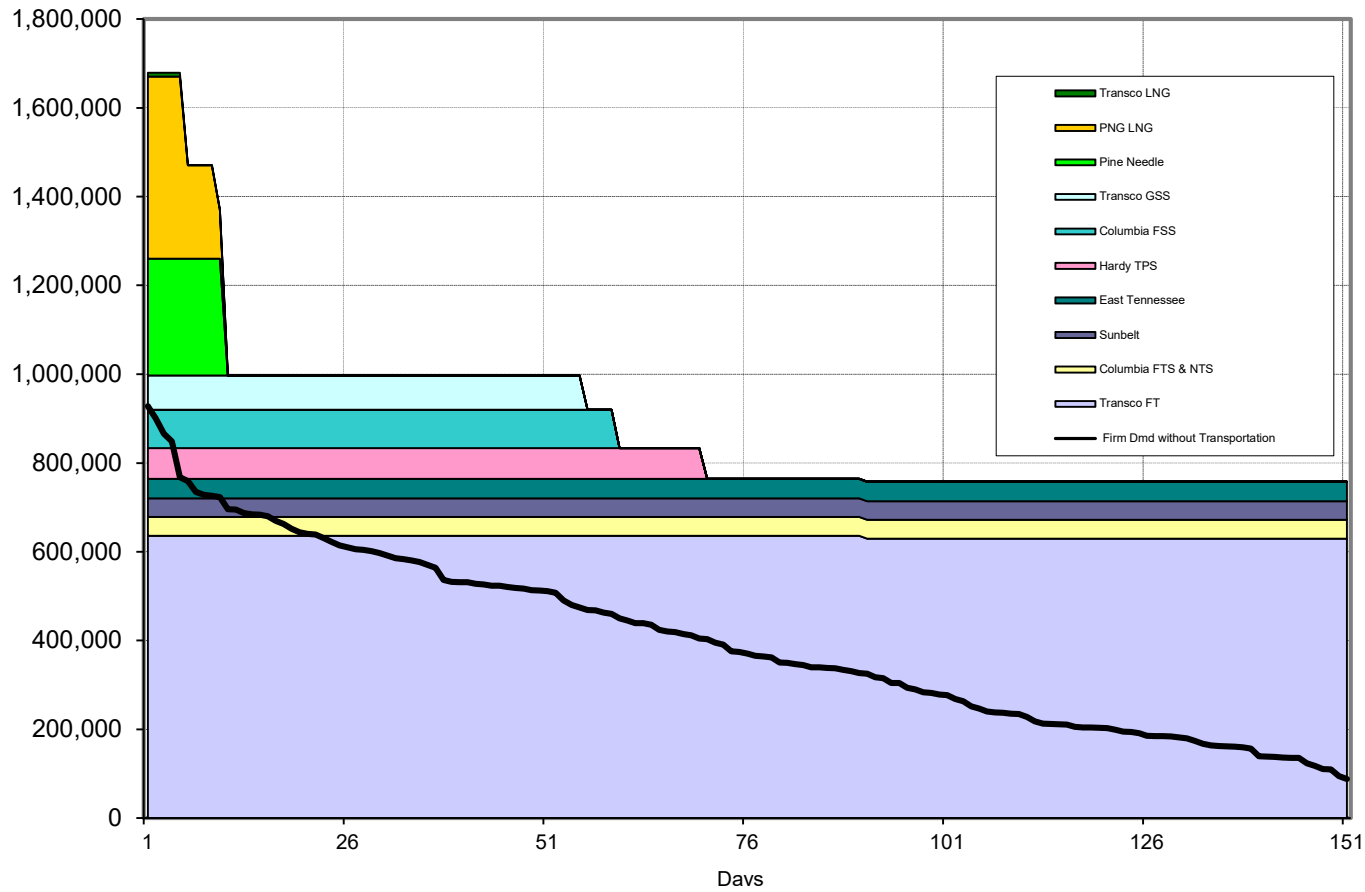
# **Exhibit\_(JCP-1A)**

### Winter 2021 - 2022 FS Load Duration Curve Design Winter - Total Carolinas



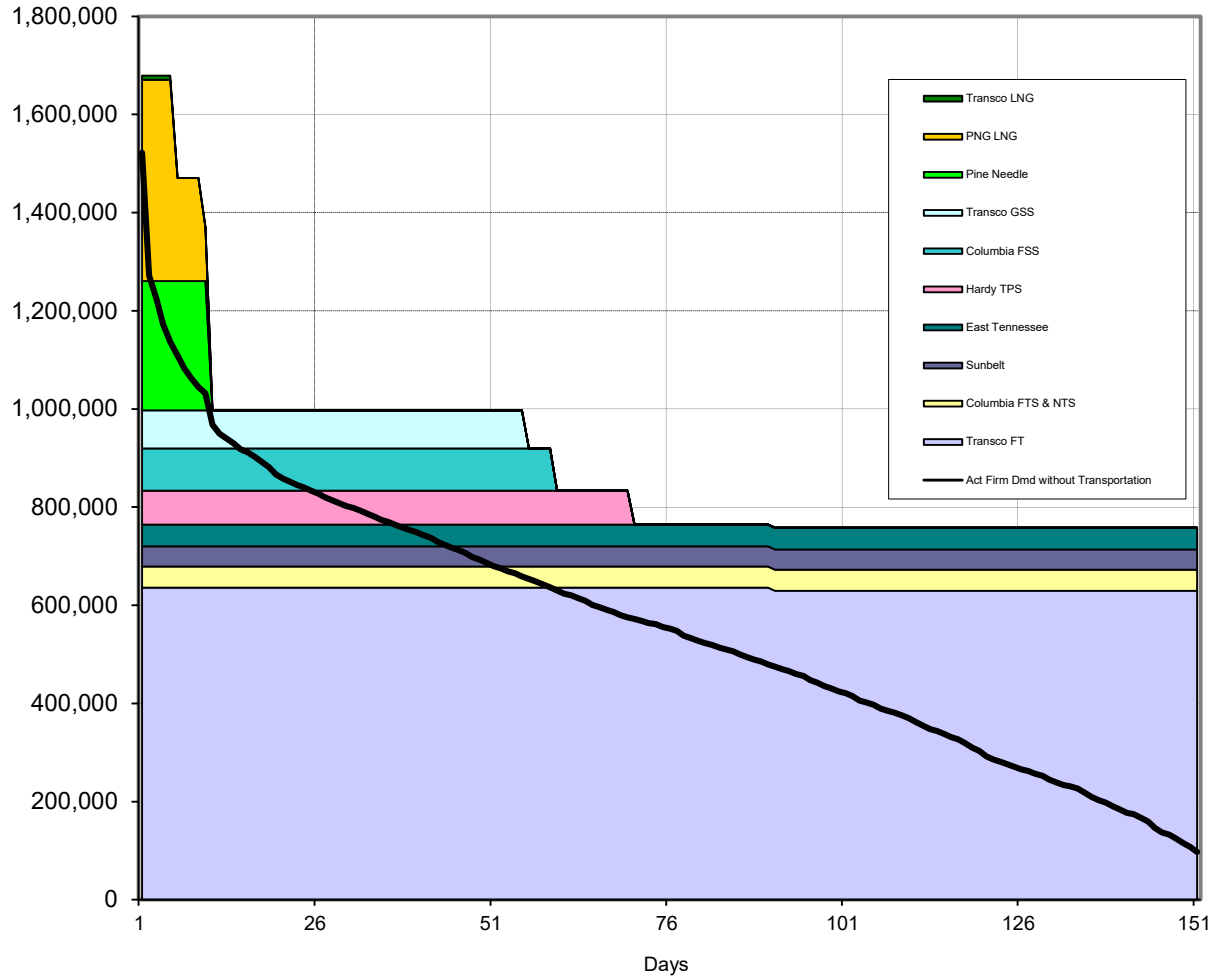
# **Exhibit\_(JCP-1B)**

### Winter 2021 - 2022 Load Duration Curve Actual Winter - Total Carolinas



# Exhibit\_(JCP-2)

### Winter 2022 - 2023 FS Load Duration Curve Design Winter - Total Carolinas



July 2022



# **Exhibit\_(JCP-3)**

2017-2018 Weather Event

**Carolinas: December 2017 - January 2018 Cold Snap**

Date	Firm Sales & Firm Transportation Less Base Load	HDDs	Usage per HDD Less Base Load
12/30/2017	530,098	28.2	18,798
12/31/2017	836,623	41.3	20,257
1/1/2018	975,969	46.2	21,125
1/2/2018	1,011,608	42.0	24,086
1/3/2018	972,138	39.3	24,736
1/4/2018	1,037,719	44.5	23,320
1/5/2018	1,011,070	42.8	23,623
1/6/2018	1,015,633	44.8	22,670
1/7/2018	964,821	40.5	23,823
1/8/2018	714,357	27.8	25,696

All usage is in dekatherms.  
Base load equals 164,485 dekatherms.

# **Exhibit\_(JCP-4A)**

Piedmont Natural Gas  
Docket No. G-9 Sub 811

Exhibit\_(JCP-4A)

**Winter 2021 - 2022 Design Day Start Point**

Design Day Forecast 2021 - 2022

Total Carolinas

Baseload - Firm Sales	122,316.59
Design Day Temperature	8.69
Design Day HDD	56.31
Estimated increase in Firm Sales Usage per degree day	21,541.56
Total Firm Sales usage for total 56.31 HDDs	1,335,322
Projected Net Growth Rate	1.529%
System Design Day Firm Sendout 2021 - 2022	1,355,743
TOTAL NEW FIRM SALES PICKED UP MID YEAR & ANNUAL ELECTIONS	886
TOTAL FIRM SALES MOVED TO TRANSPORT ANNUAL ELECTIONS	(574)
<b>TOTAL NET NUMBER - FIRM SALES PICKED UP</b>	<b>312</b>
Firm Sales Contract Commitment - GE	333
Firm Sales Contract Commitment - City of Wilson	3,900
Firm Sales Contract Commitment - City of Rocky Mount	3,000
Total Firm Sales Contract Commitment	7,233

# **Exhibit\_(JCP-4B)**

Piedmont Natural Gas  
 Docket No. G-9 Sub 811

Exhibit\_\_(JCP-4B)

**Customer Growth for Winter Design Day 2021-2022**

Actual Customer Count by Year as of March 31 Through 2021

Projected Customer Count by Year as of March 31, 2022 Through 2024

TOTAL RESIDENTIAL & COMMERCIAL CUSTOMER COUNT											
	ACTUAL							PROJECTION			
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
Total NC & SC	839,328	852,754	865,950	876,464	891,191	901,513	915,099	936,163	950,767	965,979	981,725
	1.49%	1.60%	1.55%	1.21%	1.68%	1.16%	1.51%	2.30%	1.53%	1.56%	1.60%

# **Exhibit\_(JCP-4C)**

## Carolinas Design Day Demand & Supply Schedule - Winter 2021 - 2022

Design Day Temperature of 8.69 Degrees (56.31 HDDs)

(All Values in Dt/d)				Carolinas Demand		Net Growth Rate		1.53%	1.56%	1.60%	1.63%	1.67%
<b>DEMAND</b>				<b>Winter Period:</b>	<b>2021 - 22</b>	<b>2022 - 23</b>	<b>2023 - 24</b>	<b>2024 - 25</b>	<b>2025 - 26</b>			
1	System Design Day Firm Sendout				1,355,743	1,377,216	1,399,196	1,421,982	1,445,680			
2	Mid Year Firm Sales Pick Up				886							
3	Mid Year Firm Sales Deduct (move to Firm Transport)				(574)							
4	Subtotal Sendout plus Mid Year Pickup				1,356,055	1,377,216	1,399,196	1,421,982	1,445,680			
5	Special Contract Firm Sales Commitment				7,233	7,233	7,233	7,233	7,233			
6	Total Firm Design Day Demand				1,363,288	1,384,449	1,406,429	1,429,215	1,452,913			
7	Reserve Margin on Design Day Demand (5%)				68,164	69,222	70,321	71,461	72,646			
8	<b>Total Firm Sales Demand</b>				<b>1,431,452</b>	<b>1,453,671</b>	<b>1,476,751</b>	<b>1,500,676</b>	<b>1,525,559</b>			
9	<b>SUPPLY CAPACITY</b>											
10												
11	<b>Firm Transportation</b>			<b>Type of Contract</b>	<b>Days</b>							
12	Transco	FT	365	301,016	301,016	301,016	301,016	301,016	301,016			
13	Transco	FT	365	6,440	6,440	6,440	6,440	6,440	6,440			
14	Transco	FT SE '94/95/96	365	129,485	129,485	129,485	129,485	129,485	129,485			
15	Transco	Sunbelt	365	41,400	41,400	41,400	41,400	41,400	41,400			
16	Transco	VA Southside	365	20,000	20,000	20,000	20,000	20,000	20,000			
17	Transco	Leidy	365	100,000	100,000	100,000	100,000	100,000	100,000			
18	Columbia Gas	FTS	365	9,801	9,801	9,801	9,801	9,801	9,801			
19	Columbia Gas	FTS	365	23,000	23,000	23,000	23,000	23,000	23,000			
20	Columbia Gas	NTS	365	10,000	10,000	10,000	10,000	10,000	10,000			
21	East TN (MGT Upstream)	FT	365	19,578	19,578	19,578	19,578	19,578	19,578			
22	<b>Total Year Round FT</b>			<b>660,720</b>	<b>660,720</b>	<b>660,720</b>	<b>660,720</b>	<b>660,720</b>	<b>660,720</b>			
23												
24	Transco	FT Southern Expansion	151	72,502	72,502	72,502	72,502	72,502	72,502			
25	East TN (TETCO Upstream)	FT	151 <sup>1</sup>	24,798	24,798	24,798	24,798	24,798	24,798			
26	Transco	FT	90	6,314	6,314	6,314	6,314	6,314	6,314			
27	<b>Total Winter Only FT</b>			<b>103,614</b>	<b>103,614</b>	<b>103,614</b>	<b>103,614</b>	<b>103,614</b>	<b>103,614</b>			
28												
29	<b>Firm Transportation Subtotal</b>			<b>764,334</b>	<b>764,334</b>	<b>764,334</b>	<b>764,334</b>	<b>764,334</b>	<b>764,334</b>			
30												
31	Hardy Storage	HSS	70	68,835	68,835	68,835	68,835	68,835	68,835			
32	Dominion	GSS	60 <sup>2</sup>	0	0	0	0	0	0			
33	Columbia Gas	FSS/SST	59	86,368	86,368	86,368	86,368	86,368	86,368			
34	Transco	GSS	55	77,475	77,475	77,475	77,475	77,475	77,475			
35												
36	<b>Total Seasonal Storage</b>			<b>232,678</b>	<b>232,678</b>	<b>232,678</b>	<b>232,678</b>	<b>232,678</b>	<b>232,678</b>			
37												
38	<b>Peaking Capacity</b>											
39	Piedmont	LNG - Huntersville	10	100,000	100,000	100,000	100,000	100,000	100,000			
40	Piedmont	LNG - Bentonville	9	110,000	110,000	110,000	110,000	110,000	110,000			
41	Transco	Pine Needle	10	263,400	263,400	263,400	263,400	263,400	263,400			
42	Transco	LNG (formerly LG-A)	5	8,643	8,643	8,643	8,643	8,643	8,643			
43	Piedmont	LNG - Robeson	5 <sup>3</sup>	200,000	200,000	200,000	200,000	200,000	200,000			
44	<b>Peaking Supplies Total</b>			<b>682,043</b>	<b>682,043</b>	<b>682,043</b>	<b>682,043</b>	<b>682,043</b>	<b>682,043</b>			
45												
46	<b>Total Capacity</b>				<b>1,679,055</b>	<b>1,679,055</b>	<b>1,679,055</b>	<b>1,679,055</b>	<b>1,679,055</b>			
47					<b>247,603</b>	<b>225,384</b>	<b>202,304</b>	<b>178,379</b>	<b>153,496</b>			

<sup>1</sup> East TN capacity is 365 days, however the upstream TETCO capacity delivering to East TN is 151 days

<sup>2</sup> Beginning in FY2015, Dominion capacity removed as available capacity on design day due to non-firm backhaul from Transco Zone 6.

<sup>3</sup> The Robeson LNG facility is anticipated to be completed in the summer of 2021, and therefore is forecasted to provide peaking support starting winter 2021-2022. The capacity portfolio for the 2021-2022 winter season and beyond will be restructured to include Robeson LNG using the "best cost" gas purchasing policy while considering the customer load profile and future requirements that would have been met by the Atlantic Coast Pipeline.



# **Exhibit\_(JCP-5A)**

**Winter 2022 - 2023 Design Day Start Point**

Design Day Forecast 2022-2023	Demand in Dth
Baseload Usage	85,738
Usage per HDDW (Wind Adjusted Heating Degree Day)*	25,820
Estimated Firm Sales Usage	1,420,018
Winter Severity Adjustment	4,532
<b>Total Estimated Firm Sales Usage</b>	<b>1,424,550</b>
Baseload growth(shrinkage) for 2022-2023	(2,625)
Heatload growth(shrinkage) for 2022-2023	(897)
Estimated Firm Sales Usage for 2022-2023	1,421,028
Number Of Customer Adjustment	23,865
<b>Total Design Day Sendout Estimate for 2022-2023</b>	<b>1,444,893</b>

\*Design Day Temperature Wind Adjusted (wgt.avg.) of 6.7 Degrees (58.3 HDDWs)

Adjustments	Demand in Dth
Total New Firm Sales Picked Up Mid-Year & Annual Elections	1,379
Total Firm Sales Moved to Transport Annual Elections	(3,776)
<b>Total Net Number Firm Sales Picked Up</b>	<b>(2,396)</b>
Firm Sales Contract Commitment - GE	333
Firm Sales Contract Commitment - City of Wilson	3,900
Firm Sales Contract Commitment - City of Rocky Mount	3,000
<b>Total Firm Sales Contract Commitment</b>	<b>7,233</b>

# **Exhibit\_(JCP-5B)**

Piedmont Natural Gas  
 Docket No. G-9 Sub 811

Customer Growth for Winter Design Day 2022-2023

Exhibit\_(JCP-5B)

Actual Customer Count by Year as of March 31 Through 2022  
 Projected Customer Count by Year as of March 31 Through 2025

TOTAL RESIDENTIAL & COMMERCIAL CUSTOMER COUNT											
	ACTUAL							PROJECTION			
	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Total NC & SC	852,754	865,950	876,464	891,191	901,513	915,099	936,163	951,458	967,825	984,873	1,002,573
	1.60%	1.55%	1.21%	1.68%	1.16%	1.51%	2.30%	1.63%	1.72%	1.76%	1.80%

# **Exhibit\_(JCP-5C)**

## Carolinas Design Day Demand & Supply Schedule - Winter 2022 - 2023

Design Day Temperature Wind Adjusted (wgt.avg.) of 6.7 Degrees (58.3 HDDWs)

(All Values in Dt/d)

Carolinas Demand Growth Rate

1.4281%

1.8302%

2.0067%

1.9034%

1.9277%

DEMAND	Winter Period:	2022 - 23	2023 - 24	2024 - 25	2025 - 26	2026 - 27
1 System Design Day Firm Sendout		1,444,893	1,471,338	1,500,864	1,529,431	1,558,914
2 Mid Year Firm Sales Pick Up		1,379				
3 Mid Year Firm Sales Deduct (move to Firm Transport)		(3,776)				
4 Subtotal Sendout plus Mid Year Pickup		1,442,497	1,471,338	1,500,864	1,529,431	1,558,914
5 Special Contract Firm Sales Commitment		7,233	7,233	7,233	7,233	7,233
6 Total Firm Design Day Demand		1,449,730	1,478,571	1,508,097	1,536,664	1,566,147
7 Reserve Margin on Design Day Demand (5%)		72,487	73,929	75,405	76,833	78,307
8 <b>Total Firm Sales Demand</b>		<b>1,522,216</b>	<b>1,552,500</b>	<b>1,583,502</b>	<b>1,613,497</b>	<b>1,644,454</b>
<b>SUPPLY CAPACITY</b>						
<i>Firm Transportation</i>						
	<i>Type of Contract</i>	<i>Days</i>				
11 Transco	FT	365	301,016	301,016	301,016	301,016
13 Transco	FT	365	6,440	6,440	6,440	6,440
14 Transco	FT SE '94/95/96	365	129,485	129,485	129,485	129,485
15 Transco	Sunbelt	365	41,400	41,400	41,400	41,400
16 Transco	VA Southside	365	20,000	20,000	20,000	20,000
17 Transco	Leidy	365	100,000	100,000	100,000	100,000
18 Columbia Gas	FTS	365	9,801	9,801	9,801	9,801
19 Transco SRE (Columbia Gas Upstream)	FTS	365 <sup>3</sup>	23,000	23,000	23,000	23,000
20 Columbia Gas	NTS	365	10,000	10,000	10,000	10,000
21 Transco SRE (East TN & MGT & Upstream)	FT	365 <sup>3</sup>	19,578	19,578	19,578	19,578
22 <b>Total Year Round FT</b>			<b>660,720</b>	<b>660,720</b>	<b>660,720</b>	<b>660,720</b>
24 Transco	FT Southern Expansion	151	72,502	72,502	72,502	72,502
25 Transco SRE (East TN & TETCO Upstream)	FT	151 <sup>1,3</sup>	24,798	24,798	24,798	24,798
26 Transco	FT	90	6,314	6,314	6,314	6,314
27 <b>Total Winter Only FT</b>			<b>103,614</b>	<b>103,614</b>	<b>103,614</b>	<b>103,614</b>
29 <b>Firm Transportation Subtotal</b>			<b>764,334</b>	<b>764,334</b>	<b>764,334</b>	<b>764,334</b>
31 Transco SRE (Hardy Storage Upstream)	HSS	70 <sup>3</sup>	68,835	68,835	68,835	68,835
32 Transco SRE (Columbia Gas Upstream)	FSS/SST	59 <sup>3</sup>	86,368	86,368	86,368	86,368
33 Transco	GSS	55	77,475	77,475	77,475	77,475
35 <b>Total Seasonal Storage</b>			<b>232,678</b>	<b>232,678</b>	<b>232,678</b>	<b>232,678</b>
<b>Peaking Capacity</b>						
38 Piedmont	LNG - Huntersville	10	100,000	100,000	100,000	100,000
39 Piedmont	LNG - Bentonville	9	110,000	110,000	110,000	110,000
40 Transco	Pine Needle	10	263,400	263,400	263,400	263,400
41 Transco	LNG (formerly LG-A)	5	8,643	8,643	8,643	8,643
42 Piedmont	LNG - Robeson	5 <sup>2</sup>	200,000	200,000	200,000	200,000
43 <b>Peaking Supplies Total</b>			<b>682,043</b>	<b>682,043</b>	<b>682,043</b>	<b>682,043</b>
45 <b>Total Capacity</b>			<b>1,679,055</b>	<b>1,679,055</b>	<b>1,679,055</b>	<b>1,679,055</b>
46			<b>156,839</b>	<b>126,555</b>	<b>95,553</b>	<b>65,558</b>

<sup>1</sup> East TN capacity is 365 days, however the upstream TETCO capacity delivering to East TN is 151 days

<sup>2</sup> During the Review Period, construction of the Robeson LNG plant was completed, and it was placed in service in August 2021.

<sup>3</sup> Transco SRE project has a target in-service date of December 1, 2024. This project will provide deliverability of 160,000 Dth per day (365 days) from Transco's South VA Lateral with upstream supply from existing non-Transco Zone 5 priced supply contracts (TCO 23,000, ENT/MGT 19,578, ETN/TETCO 24,798, TCO/FSS 81,169 and Hardy 11,455)

# **Exhibit\_(JCP-6)**

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP21-552-00	Tennessee Gas Pipeline Company, L.L.C.	3/31/2021	<p>As a member of the Shipper Group, filed an answer to FERC Trial Staff’s motion to modify the procedural schedule on 10/8/2021 and an initial post-hearing brief on 2/24/2022.</p> <p>As a member of the Indicated Tennessee Customers, filed a joint answer to late-filed motion on 4/29/2022.</p>	2021 Fuel Tracker Filing	The record is closed, full briefing has been submitted, and the issues now are pending before the Presiding Judge for resolution in an initial decision.
RP21-829-000	Coalition for Fair Fuel Rates v. Columbia Gulf Transmission, LLC	5/17/2021	Intervened on 6/14/21	Complaint and Request for Prospective Modification of Fuel Reimbursement Methodology to Conform to Commission Regulations and Policy	On 10/21/2021, the Commission issued an order denying the complaint. On 12/20/2021, the Commission denied the Coalition's request for rehearing. On 2/04/2022, the Commission issued an order addressing arguments on rehearing. The Commission disagreed with the Coalition’s complaint finding that Columbia Gulf’s pooling structure, postage stamp rate design, and fuel methodology, were not unjust, unreasonable, unduly discriminatory, and were



FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
					otherwise consistent with other Commission policies and regulations.
RP21-904-000	Chief Oil & Gas LLC and Southern Company Services, Inc.	6/22/2021	Intervened on 7/06/21	Joint Petition for Limited Waiver of Capacity Release Regulations	On 8/20/2021, the Commission issued a letter order accepting the filing.
RP21-929-000	Texas Eastern Transmission, LP	6/30/2021	Intervened on 7/12/20221	Electric Power Cost and Surcharge Filing	On 7/20/2021, the Commission issued a letter order accepting the filing.
RP21-965-000	East Tennessee Natural Gas, LLC	7/14/2021	Intervened on 7/26/2021	Right of First Refusal Filing	On 8/04/2021, the Commission issued a letter order accepting the filing.
RP21-974-000	Transcontinental Gas Pipe Line Company, LLC	7/19/2021	Intervened on 8/02/2021	Revisions to Section 2.7 of Rate Schedule FT	On 8/20/2021, the Commission issued a letter order accepting the filing.
RP21-1001-000	Texas Eastern Transmission, LP	7/30/2021	Intervened and Protested on 8/11/2021 Piedmont is participating in the rate case proceeding as part of an LDC customer group. The group has retained a consultant to represent the members' interests.	2021 Section 4 Rate Case	On 08/31/2021, the Commission issued an order rejecting TETCO's rate case filing. However, on rehearing of the 08/31/2021 order, the Commission accepted the rate case filing subject to TETCO removing certain income tax allowance tariff records. This proceeding was later consolidated with TETCO's refiled rate case filing in Docket

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
					No. RP21-1188. Settlement discussions are ongoing.
RP21-1078-000	Transcontinental Gas Pipe Line Company, LLC	8/31/2021	Intervened on 9/13/2021	2021 Annual Charge Adjustment Tracker Filing – Rate Schedules GSS, LSS, SS-2 & S-2	On 9/14/2021, the Commission issued a letter order accepting the filing.
RP21-1157-000	Tennessee Gas Pipeline Company, L.L.C.	9/28/2021	Intervened on 10/12/2021	Pipeline Safety and Greenhouse Gas Cost Adjustment Mechanism	On 10/20/2021, the Commission issued a letter order accepting the filing.
RP21-1159-000	Eastern Gas Transmission and Storage, Inc.	9/29/2021	Intervened on 10/12/2021	2021 Annual Electric Power Cost Adjustment	On 10/22/2021, the Commission issued a letter order accepting the filing.
RP21-1160-000	Eastern Gas Transmission and Storage, Inc.	9/29/2021	Intervened on 10/12/2021	2021 Annual Transportation Cost Rate Adjustment	On 12/10/2021, the Commission issued a letter order accepting the filing.
RP21-1171-000	Transcontinental Gas Pipe Line Company, LLC	9/29/2021	Intervened on 10/12/2021	Annual Cash-Out Report	Proceeding is currently ongoing with multiple intervenors.
RP21-1187-000	Eastern Gas Transmission and Storage, Inc.	9/30/2021	Intervened and Protested on 10/12/2021  Piedmont is participating in the rate case proceeding	2021 Section 4 Rate Case	On 10/29/2021, the Commission issued an order suspending, subject to refund, the tariff records and established hearing procedures. Settlement discussions are ongoing.

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
			as part of an LDC customer group. The group has retained a consultant to represent the members' interests.		
RP21-1188-000	Texas Eastern Transmission, LP	9/30/2021	Intervened and protested on 10/12/2021  Piedmont is participating in the rate case proceeding as part of an LDC customer group. The group has retained a consultant to represent the members' interests.	2021 Section 4 Rate Case	On 10/29/2021, the Commission issued an order suspending, subject to refund, the tariff records and establishing hearing procedures. Settlement discussions are ongoing.
RP22-3-000	Midwestern Gas Transmission Company	10/1/2022	Intervened on 10/13/2021	2021 Annual Load Management Service Cost Reconciliation Adjustment	On 10/29/2021, the Commission issued a letter order accepting the filing.
RP22-13-000	Transcontinental Gas Pipe Line Company, LLC	10/1/2021	Intervened on 10/13/2021	Cash Out Surcharge Annual Update Filing	On 10/19/2021, the Commission issued a letter order accepting the filing.

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Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP22-25-000	Texas Eastern Transmission, LP	10/4/2021	Intervened on 10/18/2021	Cameron Extension Project In-Service Compliance Filing	On 10/27/2021, the Commission issued a letter order accepting the filing.
RP21-1143-000	Transcontinental Gas Pipe Line Company, LLC	9/21/2021	Intervened on 10/21/2021  Filed protest with WSS Customer Group on 10/21/2021  Filed answer in opposition to motion for leave to answer with WSS Customer Group on 11/23/2021	Petition for Declaratory Order to Charge Market-Based Rates for the Washington Storage Field	Proceeding is currently ongoing with multiple intervenors.
CP21-498-000	Columbia Gas Transmission, LLC	9/21/2021	Intervened on 10/26/2021	Application for Certificate of Public Convenience and Necessity and Abandonment Authority – Virginia Electrification Project	Proceeding is currently ongoing with multiple intervenors.
RP22-84-000	Transcontinental Gas Pipe Line Company, LLC	10/26/2021	Intervened on 11/08/2021	Rate Schedules GSS, LSS & SS-2 Tracker Filing	On 11/16/2021, the Commission issued a letter order the filing.

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Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP22-94-000	Transcontinental Gas Pipe Line Company, LLC	10/28/2021	Intervened on 11/09/2021	2021 Annual Penalty Revenue Sharing Report	Proceeding is currently ongoing with multiple intervenors.
RP22-110-000	Columbia Gas Transmission, LLC	10/29/2021	Intervened on 11/10/2021	2021 Operational Transaction Rate Adjustment Winter Filing	On 11/17/2021, the Commission issued a letter order accepting the filing.
RP22-137-000	Transcontinental Gas Pipe Line Company, LLC	10/29/2021	Intervened on 11/10/2021	New Pooling Locations Filing	On 11/17/2021, the Commission issued a letter order the filing.
RP22-142-000	Texas Eastern Transmission, LP	10/29/2021	Intervened on 11/10/2021	Polychlorinated Biphenyls December 2021 Filing	On 11/22/2021, the Commission issued a letter order accepting the filing.
RP22-144-000	Midwestern Gas Transmission Company	10/29/2021	Intervened on 11/10/2021	2020 - 2021 Cash Out Report	Proceeding is currently ongoing with multiple intervenors.
RP22-135-000	Columbia Gulf Transmission, LLC	10/29/2021	Intervened on 11/10/2021	Capacity Allocation – Interruptions of Service	On 11/30/2021, the Commission issued an order accepting the filing.
RP22-149-000	Texas Eastern Transmission, LP	11/01/2021	Intervened on 11/15/2021	2021 Applicable Shrinkage Adjustment Filing	On 11/22/2021, the Commission issued a letter order accepting the filing.

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP21-525-000	Midwestern Gas Transmission Company	2/26/2021	Intervened protested on 3/10/2021  Filed Direct and Answering Testimony on 11/23/2021	2021 Section 4 Rate Case	On 5/03/2022, the Commission issued an order approving the Stipulation and Offer of Settlement resolving all issues in this proceeding.
RP22-339-000	Columbia Gas Transmission, LLC	11/23/2021	Intervened on 12/06/2021	Operational Transaction Rate Adjustment and Settlement Interim Rate Clarification	On 12/13/2021, the Commission issued a letter order accepting the filing.
RP22-363-000	Tennessee Gas Pipeline Company, L.L.C.	11/30/2021	Intervened on 12/13/2021	2020-2021 Cashout Report	Multiple motions to intervene filed. The proceeding is ongoing.
RP22-417-000	Tennessee Gas Pipeline Company, L.L.C.	12/15/2021	Intervened on 12/27/2021	Producer Certified Gas Pooling Service Option	On 4/29/2022, the Commission issued an order rejecting the filing.
RP22-433-000	Range Resources-Appalachia, LLC, and Columbia Gulf Transmission, LLC v. Texas Eastern Transmission, LP	12/21/2021	Intervened on 1/10/2022	Complaint	On 3/24/2022, the Commission issued an order dismissing the complaint and on 5/26/2022 the Commission issued an order denying rehearing on the complaint.
RP22-435-000	Range Resources – Appalachia, LLC v.	12/21/2021	Intervened on 1/10/2022	Complaint	On 3/24/2022, the Commission issued an order dismissing the complaint and on 5/26/2022 the

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
	Texas Eastern Transmission, LP				Commission issued an order denying rehearing on the complaint. Note that this proceeding was consolidated with Docket No. RP22-433 above.
RP22-441-000	Transcontinental Gas Pipe Line Company, LLC	12/30/2021	Intervened on 1/13/2022	Cash Out Surcharge True-Up Filing	On 1/21/2022, the Commission issued a letter order accepting the filing.
RP22-540-000	Texas Eastern Transmission, LP	2/07/2022	Intervened on 2/14/2022	Interim Applicable Shrinkage Adjustment Compliance Filing	On 2/18/2022, the Commission issued a letter order accepting the filing.
RP22-539-000	Texas Eastern Transmission, LP	2/04/2022	Intervened on 2/14/2022	Ministerial Compliance Filing Pursuant to Docket No. RP21-1001-000	On 3/03/2022, the Commission issued a letter order accepting the filing.
RP22-633-001	Columbia Gas Transmission, LLC	3/08/2022	Intervened on 3/21/2022	2022 Retainage Adjustment Mechanism	On 3/24/2022, the Commission issued a letter order accepting the filing.
RP22-654-001	Columbia Gas Transmission, LLC	3/08/2022	Intervened on 3/21/2022	2022 Modernization Cost Recovery Mechanism Amendment Filing	On 3/24/2022, the Commission issued a letter order accepting in part, and rejecting in part, the filing.

FERC Filing Activity: June 1, 2021 – May 31, 2022

Docket Number	Pipeline Applicant	Filed Date	Action	Description	Status of Docket
RP22-689-000	East Tennessee Natural Gas, LLC; Sabal Trail Transmission, LLC; Saltville Gas Storage Company, L.L.C.; Southeast Supply Header, LLC; and Texas Eastern Transmission, LP	3/10/2022	Intervened on 3/22/2022	Request for Waivers – LINK System Maintenance	On 4/15/2022, the Commission issued a letter order granting the request for temporary waiver of certain North American Energy Standards Board Wholesale Gas Quadrant Version 3.2 Standards.
RP22-749-000	Pine Needle LNG Company, LLC	3/31/2022	Intervened on 4/12/2022	2022 Annual Fuel and Electric Power Tracker Filing	On 4/27/2022, the Commission issued a letter order accepting the filing.
RP22-755-000	East Tennessee Natural Gas, LLC	3/31/2022	Intervened on 4/12/2022	2020-2021 Cashout Report	On 4/20/2022, the Commission issued a letter order accepting the filing.
RP22-742-000	East Tennessee Natural Gas, LLC	3/31/2022	Intervened on 4/12/2022	2022 Fuel Filing	On 4/22/2022, the Commission issued a letter order accepting the filing.
RP22-763-000	Columbia Gas Transmission, LLC	3/31/22	Intervened on 4/12/2022	Summer 2022 Operational Transaction Rate Adjustment Filing	On 5/3/2022, the Commission issued a letter order accepting the filing.
RP22-816-000	Transcontinental Gas Pipe Line Company, LLC	4/8/2022	Intervened on 4/15/2022	Fuel Retention Filing for the Clermont Receipt Point	On 4/27/2022, the Commission issued a letter order accepting the filing.



# Exhibit\_(JCP-7)

Piedmont Natural Gas  
 Docket No. G-9 Sub 811  
 Design Day Temperature

Exhibit\_(JCP-7)

Operating Area	TempW (deg. F)	HDDW
North Carolina East	9.5	55.5
North Carolina West	5.2	59.8
South Carolina	8.6	56.4
Total Carolinas (wgt. avg.)	6.7	58.3

NC East Weather Stations	Call Sign	Weight
Charlotte, NC	KCLT	29.76%
Wilmington, NC	KILM	22.27%
Greensboro, NC	KGSO	18.29%
Pope AFB, NC	KPOB	14.14%
Goldsboro, NC	KGWW	9.12%
Elizabeth City, NC	KECG	6.41%

NC West Weather Stations	Call Sign	Weight
Greensboro, NC	KGSO	52.16%
Charlotte, NC	KCLT	47.84%

SC Weather Stations	Call Sign	Weight
Greenville, SC	KGSP	91.72%
Charlotte, NC	KCLT	8.28%

# **Exhibit\_(JCP-8)**

**Total Firm Sales Forecasted Demand Comparison**

*(All Values in Dt/d)*

		<b>Previous Methodology</b>	<b>Updated Methodology</b>	<b>Variance</b>	<b>%</b>
	<b>2022-2023 DEMAND</b>				
1	System Design Day Firm Sendout	1,349,408	1,444,893	95,485	7.08%
2	Mid Year Firm Sales Pick Up	1,379	1,379	0	0.00%
3	Mid Year Firm Sales Deduct (move to Firm Transport)	<u>(3,776)</u>	<u>(3,776)</u>	<u>0</u>	<u>0.00%</u>
4	Subtotal Sendout plus Mid Year Pickup	1,347,011	1,442,497	95,485	7.09%
5	Special Contract Firm Sales Commitment	7,233	7,233	0	0.00%
6	Total Firm Design Day Demand	1,354,244	1,449,730	95,485	7.05%
7	Reserve Margin on Design Day Demand (5%)	<u>67,712</u>	<u>72,486</u>	<u>4,774</u>	<u>7.05%</u>
8	<b>Total Firm Sales Demand</b>	<b>1,421,957</b>	<b>1,522,216</b>	<b>100,260</b>	<b>7.05%</b>

# **Exhibit\_(JCP-9)**

**Design Winter Load Duration Curve Comparison**

