STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 165

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of 2020 Biennial Integrated Resource Plans and Related 2020 REPS Compliance Plans	)))	**REPLY COMMENTS OF THE PUBLIC STAFF**

NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission, by and through its Executive Director, Christopher J. Ayers, respectfully submits the following reply comments pursuant to Commission Rule R8-60(k) and the Commission's May 11, 2021, *Order Granting Further Extension of Time* in the above-referenced docket.

<u>DISCUSSION</u>

The Public Staff, in its Comments on the 2020 Integrated Resource Plans (IRP) filed on February 26, 2021 (Initial Comments), raised concerns regarding the natural gas forecasts utilized by Duke Energy Progress, LLC (DEP), and Duke Energy Carolinas, LLC (DEC) (collectively, "Duke"). Specifically, the Public Staff criticized the use of Dominion Southpoint (DS)[1] hub prices for all future and existing combined cycle (CC) generating facilities, beginning in 2026. The Public Staff also

[1] In its Initial Comments, the Pubic Staff treated all references to DS hub gas as confidential, pursuant to the treatment of the information by Duke during discovery. Based on Duke's treatment of this information as public in its reply comments in Docket No. E-100, Sub 167, at 4, the Public Staff is now treating this information as public.

raised this issue in its Initial Comments filed on January 25, 2021, in the 2020 avoided cost proceeding, Docket No. E-100, Sub 167.[2]

The Public Staff reviewed the initial comments of other intervenors, and responds to the issue of artificially low natural gas prices and constrained pipeline capacity raised by other parties. Specifically, the North Carolina Sustainable Energy Association (NCSEA) and Carolinas Clean Energy Business Alliance (CCEBA) noted that "given the recent cancellation of the Atlantic Coast Pipeline and the write-down of the Mountain Valley Pipeline, it is increasingly unlikely that new or upgraded pipeline capacity will be available."[3] Other intervenors note that "[n]atural gas fuel price forecasts [by Duke] are lower for the newest, most efficient units than for older units"[4] and that "[u]nderstating future gas prices could wrongly skew DEC's financial analysis in favor of gas generation to the exclusion of investments in fuel-free renewable generation."[5]

The Public Staff agrees with these intervenors that artificially low natural gas prices and constrained pipeline capacity for new CC generation plants is a serious matter. Total portfolio costs and the selection of natural gas capacity are both highly sensitive to fuel costs: the 'High Fuel' sensitivity analysis has the largest increase in costs relative to the base case of any sensitivity for both DEC and DEP, and the amount of new gas generation selected is also influenced by

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[2] *See* Initial Comments of the Public Staff, filed on January 15, 2021, Docket No. E-100, Sub 167, at 40-46.

[3] *See* Initial Comments of NCSEA and CCEBA at 19.

[4] *See* Partial Initial Comments of Southern Alliance for Clean Energy, Sierra Club, and Natural Resources Defense Council, Appendix B, at C-3

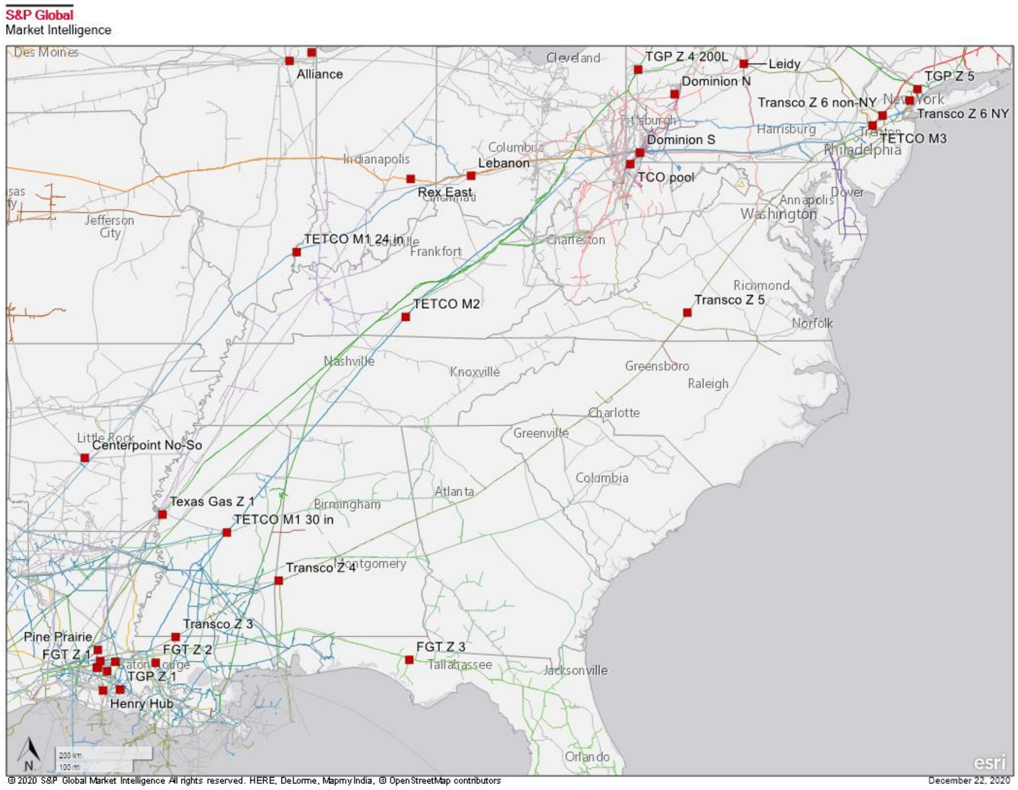
[5] *See* Tech Customers Initial Comments at 7.

fuel prices.[6] Therefore, the Public Staff believes that the accuracy of the natural gas price forecast – which is inherently linked to the ability to transport sufficient gas into North Carolina – is of utmost importance. After careful consideration of the intervenor comments, review of the Reply Comments of DEC and DEP filed in Docket No. E-100, Sub 167, and discussions with Duke, the Public Staff would like to emphasize for the Commission's consideration the importance of the development of an alternative portfolio with limited DS trading hub gas.

The DS trading hub is located in the Appalachian region of southwestern Pennsylvania in the middle of the natural gas rich Marcellus shale (see Figure 1 below – DS trading hub is located in the blue box). Two current pipelines connect to the DS hub. One pipeline runs northeast from Warren County, Ohio, midway between Cincinnati and Dayton, and merges with the second pipeline just northeast of Pittsburgh, Pennsylvania. The second pipeline runs north from Buchanan County, Virginia, on the Virginia-West Virginia border to the end of the zone at Valley Gate in Armstrong County, Pennsylvania.[7] Neither of these pipelines carries DS trading hub gas directly to North Carolina or South Carolina.

[6] *See* Tables A-9 and A-10 from the DEC and DEP IRPs. The High Fuel sensitivity results in the largest increase in costs.
[7] *See* Platts S&P Global at https://www.spglobal.com/platts/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/na_gas_methodology.pdf

Figure 1. Map of DS Trading Hub



Even though the Atlantic Coast Pipeline (ACP), which was expected to transport DS trading hub gas to North Carolina, was cancelled in mid-2020, Duke's reliance on DS trading hub gas has increased relative to the 2018 IRP, as summarized in Figure 2 below. Beginning in 2026, Duke anticipates approximately **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** of natural gas CC capacity reliant on DS trading hub gas; this amount increases to **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** by 2034.[8] There is insufficient existing firm pipeline capacity to transport the gas volumes that Duke anticipates will be needed over the next 10 years.[9] Duke has stated that it believes

[8] These amounts are based upon the following assumptions for CC generation plants: winter capacity rating without duct firing, capacity factor of 70%, and the maximum net dependable capacity (MNDC) heat rate used in the IRP.

[9] Duke's response to PS DR 3-32.

the 2026 timeline for DS trading hub gas delivery to North Carolina is a "conservative assumption" based on its expectation that it will be able to secure additional firm transportation services through pipeline expansions, securing released capacity rights, or by other means.[10]

The planned Mountain Valley Pipeline (MVP) and the associated MVP Southgate project are intended to transport DS trading hub gas into North Carolina. However, the projects have experienced numerous delays, causing uncertainty regarding Duke's ability to reserve firm gas capacity on these lines. Originally expected to enter in service by late 2018 at a cost of $3.5 billion,[11] recent delays in obtaining necessary permits have postponed the MVP main pipeline's expected in-service date to the summer 2022 and increased costs to $6.2 billion.[12] The MVP Southgate project is also delayed and is now expected to be in service by spring of 2023.[13] The Commission has also identified the risk and costs associated with the MVP Southgate project, stating that "further delays in MVP Southgate are a matter of serious concern."[14]

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[10] Duke's response to PS DR 20-4.

[11] Reuters report at https://www.reuters.com/business/energy/wv-va-mountain-valley-natgas-pipe-start-delayed-summer-2022-2021-05-04

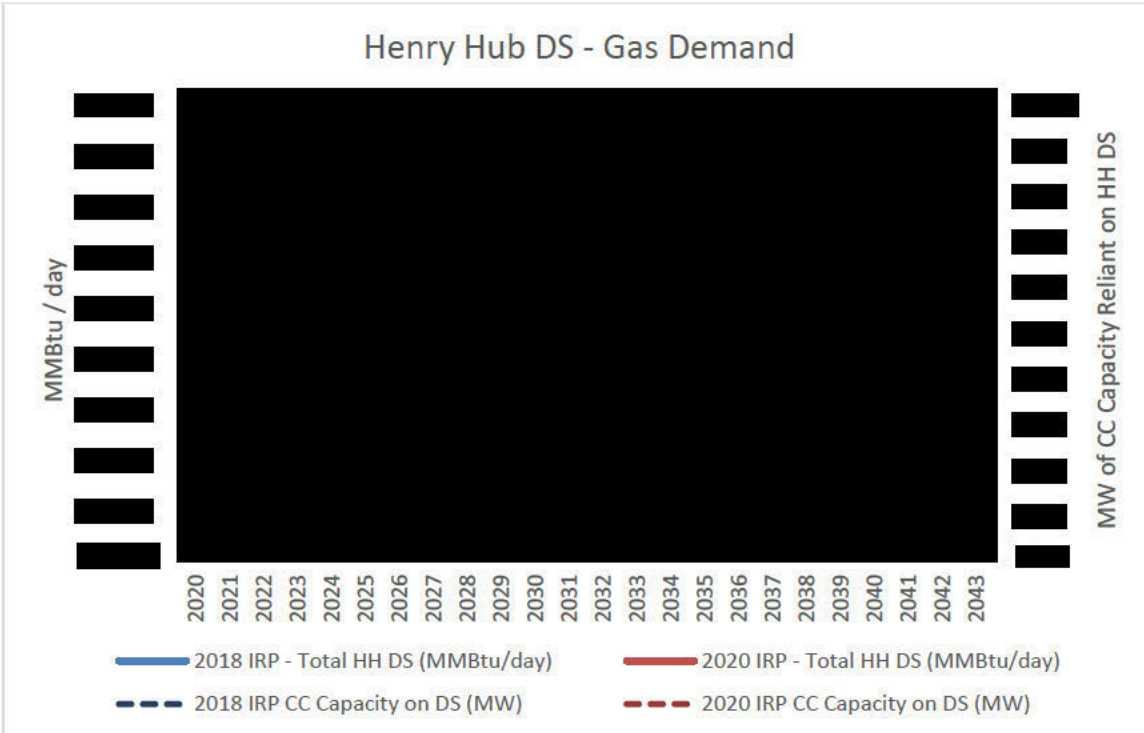
[12] S&P Global Market Intelligence report at https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#news/article?id=64064782&KeyProductLinkType=58&utm_source=MIAlerts&utm_medium=scheduledalert&utm_campaign=Alert_Email

[13] SNL pipeline profile at https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#industry/GasProjectsProfile?ProjectID=2435

[14] *Annual Report Regarding Long Range Needs For Expansion Of Electric Generation Facilities For Service In North Carolina*, submitted December 30, 2020, at 21.

Figure 2. Henry Hub DS – Gas Demand

[BEGIN CONFIDENTIAL]



[END CONFIDENTIAL]

Based upon its review of Duke's IRPs, the Public Staff made the following two recommendations in its Initial Comments regarding the use of DS trading hub gas:[15]

> 21. For the 2021 IRP update, Duke should re-evaluate its prediction that additional interstate pipeline capacity will be available. If Duke continues to believe that adequate capacity will be available, Duke should provide the Commission and stakeholders with a detailed narrative that identifies a specific timeline for completion, as well as identification of major challenges associated with potential new interstate pipelines, which require FERC approval.

[15] Public Staff Initial Comments at 18.

22. In order to assess the portfolio risk of Duke's natural gas pricing assumptions, Duke should consider developing an IRP portfolio that is similar to its base case but includes natural gas import restrictions or less reliance on DS point gas.[16]

The Public Staff notes that as permitted by Commission Rule R8-60(h), IRP updates in odd-numbered years typically are less extensive, and do not contain the development of new Portfolios or substantial changes to the modeling inputs. In past IRP proceedings, the Public Staff's recommendations have generally been prospective, to be integrated in the next comprehensive IRP in even-numbered years. However, given that Duke has proposed shifting its avoided cost proceedings to odd-numbered years,[17] the IRP updates have gained increased importance, as the inputs used and portfolios filed in the IRP updates will be used to calculate the avoided costs in each biennial proceeding, beginning with the avoided cost filing due November 1, 2021.

Since the filing of its Initial Comments, the Public Staff has discussed its DS trading hub-related recommendations with Duke to better understand whether the assumed availability of large volumes of DS trading hub gas is reasonable, and what pipeline route the significant quantities of gas would be transported. While Duke's IRP does include a capital plant cost adder to reflect the cost of obtaining firm pipeline capacity, this cost is not included in the fuel cost inputs utilized in the production cost models. **[BEGIN CONFIDENTIAL]** [redacted]

[16] Recommendation 22 shall be referred to as the "Limited DS Hub Gas Portfolio."

[17] *See* DEC's, DEP's, and Dominion Energy North Carolina's Notification of Intended Compliance, Request for Continuance of Compliance with Certain Requirements, and Request to Modify Timing of Biennial Proceedings, filed on October 20, 2020, in Docket No. E-100, Sub 167.

[redacted] **[END CONFIDENTIAL]**

In the 2020 Biennial Avoided Cost docket, Duke indicated that while it is willing to conduct the analysis recommended by the Public Staff, it believes the additional analysis is better suited for the comprehensive 2022 IRP filing.[19] Normally, the Public Staff would agree; however, as noted above, this delay would result in the 2021 Avoided Cost proceeding utilizing a portfolio and natural gas price forecast from Duke's 2021 IRP Update, which would be overly reliant on the assumption of DS trading hub gas being available in 2026. The overreliance on lower priced shale natural gas, sourced from the DS trading hub, would artificially distort the 2021 Avoided Cost proceeding's avoided energy cost rates and standard contracts. Therefore, standard offer contracts and avoided cost calculation methodologies, which would be overly reliant on DS trading hub gas availability, would be locked in until the 2023 Avoided Cost proceeding which would use the Limited DS Hub Gas Portfolio in the 2022 IRP proceeding.

The Public Staff is concerned that this overreliance on DS trading hub gas will distort the calculation of avoided energy prices in two ways. First, the proposed Limited DS Hub Gas Portfolio could be significantly different than Duke's Portfolio

[18] Duke's confidential response to PS DR 20-16.
[19] DEC & DEP Reply Comments, Docket No. E-100, Sub 167, at 4 (March 5, 2021).

A;[20] if new CC generation plants are forced to rely on more expensive Transco Zone 4 or Zone 5 hub gas pricing or if a limitation on natural gas import capacity arises that prevents the construction and operation of new or existing CC plants after 2026. Second, the calculation of avoided energy rates, in 2026 and beyond, would be improperly depressed, proportional to the number of hours DS trading hub gas CC plants are on the margin in the production cost modeling. **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**[21]. The impact of these two concerns on avoided energy rates is impossible to estimate if Duke does not file a Limited DS Hub Gas Portfolio in its 2021 IRP Update.

At this time, the Public Staff is not taking the position that a Limited DS Hub Gas Portfolio is the appropriate portfolio to use in the 2021 Avoided Cost proceeding. However, without such a portfolio generated in the 2021 IRP Update, the Public Staff will not be able to evaluate the impact of limited DS gas on avoided energy rates in its review later this year. The Public Staff believes that in order to address the uncertainty regarding the availability of new natural gas pipelines or expansion of existing pipelines, Duke should develop an appropriate Limited DS Hub Gas Portfolio. The Public Staff recommends that this portfolio be modeled so that it would allow DEC to supply its existing gas CC fleet plus one new CC with DS trading hub gas and DEP to supply its existing and future CC plants from

[20] Portfolio A is the base case without carbon policy, which the Public Staff recommended be used for the calculation of avoided energy rates in Docket No. E-100, Sub 167.

[21] Duke's confidential response to PS DR 2-10 in Docket E-100, Sub 167.

Transco Zone 4 or Zone 5 gas, through 2030. Conceptually, this limit is reasonable because it would allow Duke sufficient time to permit and construct a new pipeline while enabling Duke to secure adequate firm gas capacity to serve a smaller amount of generating capacity.[22]

CONCLUSION

The Public Staff requests that based on the limited availability of DS trading hub gas, the Commission order Duke to file a Limited DS Hub Gas Portfolio in its 2021 IRP Updates, or as a supplemental filing to Duke's 2020 IRPs, for potential use in calculating avoided energy rates in the 2021 Avoided Cost proceeding.

WHEREFORE, the Public Staff prays that the Commission take these reply comments into consideration in reaching its decision in this proceeding.

[22] This limitation would not impact the ability to build combustion turbines, which do not require firm gas capacity.

Respectfully submitted this the 28th day of May 2021.

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CERTIFICATE OF SERVICE

I certify that a copy of these reply comments has been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 28th day of May 2021.

Electronically submitted
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