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September 20, 2021

**VIA ELECTRONIC FILING**

Ms. A. Shonta Dunston, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699-4300

**RE: Duke Energy Progress, LLC's Testimony Summaries for Remote  
Hearing  
Docket No. E-2, Sub 1272**

Dear Ms. Dunston:

We have reviewed the Commission's Order granting the Motions filed in this docket and cancelling the hearing. However, to fully comply with the Commission's requirements in this docket, we have enclosed for filing with the Commission in the above-referenced docket summaries of testimony for the five direct witnesses whose testimony will be copied into the record as ordered by the Commission. Additionally, we have enclosed the summary of the joint rebuttal testimony of Mr. Verderame and Mr. Swez whose rebuttal testimony will be treated in the same manner as ordered by the Commission.

If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Sincerely,

Jack E. Jirak

Enclosure

cc: Parties of Record

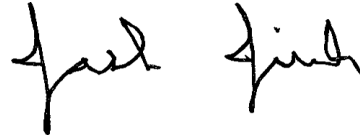
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**CERTIFICATE OF SERVICE**

I certify that a copy of Duke Energy Progress, LLC's Testimony Summaries for Remote Hearing, in Docket No. E-2, Sub 1272, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid to parties of record.

This the 20<sup>th</sup> day of September, 2021.

A handwritten signature in black ink, appearing to read "Jack Jirak", written in a cursive style.

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**DUKE ENERGY PROGRESS, LLC  
DANA M. HARRINGTON DIRECT and  
SUPPLEMENTAL DIRECT TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1272**

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1           The purpose of my direct testimony is to propose fuel factors by customer class to become  
2 effective December 1, 2021 for DEP's North Carolina retail customers. My testimony reports  
3 DEP's Experience Modification Factor ("EMF"), for fuel and fuel-related costs, including  
4 purchased power capacity costs from renewable and qualifying facility sources, incurred while  
5 providing energy service to North Carolina customers for the test period of April 1, 2020 through  
6 March 31, 2021. In addition, my testimony provides DEP's projected fuel and fuel-related costs,  
7 including purchased power capacity costs from renewables and qualifying facility sources, for the  
8 billing period of December 1, 2021 through November 30, 2022.

9           The purpose of my supplemental direct testimony is to present revised rates reflecting five  
10 updates to my direct exhibits and workpapers. The primary update relates to incorporating into the  
11 EMF increment, the under-recovered fuel and fuel-related costs experienced during the update  
12 period of April 1, 2021 – June 30, 2021. Following the incorporation of the update period, the  
13 North Carolina retail under-recovered balance as of June 30, 2021 is approximately \$113 million  
14 dollars. This update has been reflected in my supplemental testimony and in the proposed rates  
15 conveyed in this summary.

16           In addition, the supplemental testimony revised the following information: (1) the test  
17 period sales and calculations based on test period sales have been updated to reflect the kilowatt hour  
18 usage of one Industrial Large General Service – Real-Time Pricing customer that was omitted because  
19 of billing system complexity for real-time pricing, (2) the weather adjustment has been corrected to  
20 match the methodology utilized in the most recent DEP NC base rate case, (3) the initial preliminary  
21 annualized revenues calculation utilized in direct testimony exhibits and workpapers has been  
22 superseded with a finalized calculation, and (4) a sales allocation factor applied to purchased power  
23 capacity costs within the 2.5% test has been replaced with the production plant allocation factor used

1 to allocate actual purchased power capacity costs.

2 The impact of all updates made in supplemental testimony was an increase to NC Retail total  
3 fuel costs of \$37,957,651. This amount represents an increase of \$38,080,743 related to incorporating  
4 the update period under-collected balance, including a June 2021 EMF adjustment to reflect the costs  
5 and revenues associated with the missing Large General Service kWh sales, offset by a reduction of  
6 \$123,092 related to other supplemental revisions.

7 Following these updates, the net proposed fuel and fuel-related costs factors by customer  
8 class are: 2.371 cents per kWh for Residential customers, 2.297 cents per kWh for Small General  
9 Service customers, 2.404 cents per kWh for Medium General Service customers, 2.527 cents per  
10 kWh for Large General Service customers, and 2.018 cents per kWh for Lighting customers. The  
11 impact of the rates set forth in my testimony are a 1.0% increase from prior year rates for all  
12 customer classes. The Company's test period fuel costs reflect DEP's continuing efforts to  
13 maintain reliable service in an efficient manner, thereby minimizing the total cost of providing  
14 service to DEP's North Carolina retail customers.

15 This concludes a summary of my testimony.

**DUKE ENERGY PROGRESS, LLC  
BRYAN WALSH'S DIRECT TESTIMONY SUMMARY  
DOCKET NO. E-2, Sub 1272**

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1           The purpose of my testimony is to describe DEP's fossil/hydro generation portfolio,  
2   discuss the performance of DEP's fossil/hydro facilities during the review period of April 1, 2020  
3   through March 31, 2021, provide information on significant fossil/hydro outages that occurred  
4   during the review period, and discuss DEP's environmental compliance efforts.

5           DEP's fossil/hydro generation portfolio consists of approximately 8,868 megawatts (MWs)  
6   of generating capacity, which includes 3,143 MWs of coal-fired generation, 3,054 MWs of natural  
7   gas combined cycle generation, 2,408 MWs of natural gas combustion turbine generation, 288 MWs  
8   of hydroelectric generation, and 35 MWs of solar.

9           The Company's fossil/hydro generating units operated efficiently and reliably during the  
10   review period. DEP's total system generation was 59 million MW hours (MWhs), of which  
11   approximately 50%, was provided by the fossil/hydro fleet. The breakdown includes  
12   approximately 36% contribution from gas facilities, 13% contribution from the coal-fired stations,  
13   1.6% contribution from the hydro facilities, and 0.4% from the solar facilities.

14          This concludes my direct testimony summary.

**DUKE ENERGY PROGRESS, LLC  
KENNETH D. CHURCH DIRECT TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1272**

The purpose of my testimony is to (1) provide information regarding DEP's nuclear fuel purchasing practices (2) provide costs for the April 1, 2020, through March 32, 2021, test period and (3) describe changes forthcoming for the December 1, 2021, through November 30, 2022, billing period.

Exhibit 2 to my direct testimony demonstrates that DEP's nuclear fuel purchasing practices involve computing near and long-term consumption forecasts, establishing nuclear system inventory levels, projecting required annual fuel purchases, requesting proposals from qualified suppliers, negotiating a portfolio of long-term contracts from diverse sources of supply and monitoring deliveries against contract commitments. For uranium concentrates, conversion and enrichment services, long-term contracts are used extensively in the industry to cover forward requirements and secure security of supply.

To mitigate the impacts of market volatility, DEP uses a mixture of pricing mechanisms and diversified suppliers. DEP's portfolio of diversified contract pricing yielded an average unit cost of \$43.30 per pound for uranium concentrates during the test period, representing a decrease of 10% per pound from the prior test period.

Prices in the uranium concentrate markets have recently increased due to production cutbacks, however, prices remain relatively low. Industry analysts believe that recent production cutbacks were warranted due to oversupply conditions. The Company anticipates nuclear fuel costs will remain flat on a cents per kilowatt hour ("kWh") basis through the next billing period. Therefore,

DEP believes that customers will continue to benefit from the Company's diverse generation mix and the strong performance of its nuclear fleet.

This concludes the summary of my direct testimony.

**DUKE ENERGY PROGRESS, LLC  
BEN WALDREP DIRECT TESTIMONY SUMMARY  
NCUC DOCKET NO. E-2, SUB 1272**

1           The purpose of my testimony is to describe and discuss the performance of DEP's nuclear  
2   fleet during the test period of April 1, 2020 through March 31, 2021.

3           DEP operated its nuclear stations in a reasonable and prudent manner during the test period  
4   supplying 49.7% of the power generated. The four nuclear units operated at an actual system  
5   average capacity factor of 93.55%. The Company's nuclear fleet has a history of strong  
6   operational performance that has historically exceeded industry averages. The Company's 93.55%  
7   test period capacity factor exceeded the North American Electric Reliability Council's five-year  
8   average capacity of 93.18% for comparable units during the five-year period ending in 2019.

9           There were two refueling outages completed during the test period: Robinson in the fall of  
10   2020 followed by Brunswick Unit 2 during the spring of 2021.

11          The Robinson refueling outage began on November 7, 2020 and concluded on December  
12   9, 2020. Maintenance activities, safety and reliability enhancements, and testing and inspections  
13   were completed as the unit was refueled. The outage was completed within budget and with the  
14   lowest refueling outage dose for the station. The outage extended 15 hours beyond the allocation,  
15   primarily driven by emergent challenges with containment sump level and rod control  
16   malfunctions.

17          The Brunswick Unit 2 spring 2021 refueling outage began on March 5, 2021 and the unit  
18   returned to service on April 5, 2021. In addition to refueling, maintenance activities, safety and  
19   reliability enhancements, and testing and inspections were completed. The outage was  
20   successfully completed with no personnel injuries nor reportable environmental events and  
21   represented the lowest radiation dose ever recorded for a Brunswick Unit 2 refueling outage. The  
22   outage was completed in 30.2 days compared to a scheduled allocation of 33 days..

23          This concludes my testimony summary.



**DUKE ENERGY PROGRESS, LLC  
JOHN VERDERAME'S DIRECT TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1272**

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1           The purpose of my testimony is to describe Duke Energy Progress's fossil fuel purchasing  
2 practices, provide actual fossil fuel costs for the period April 1, 2020 through March 31, 2021  
3 ("test period") versus the period April 1, 2019 through March 31, 2020 ("prior test period"), and  
4 describe changes projected for the billing period of December 1, 2021 through November 30, 2022  
5 ("billing period").

6           Both DEP and DEC utilize the same process to ensure that the assets of the Companies are  
7 reliably and economically available to serve their respective customers. To that end, both companies  
8 consider factors that include, but are not limited to, the latest forecasted fuel prices, transportation  
9 rates, planned maintenance and refueling outages at the generating units, generating unit performance  
10 parameters, and expected market conditions associated with power purchases and off-system sales  
11 opportunities in order to determine the most economic and reliable means of serving their respective  
12 customers.

13           DEP's average delivered cost of coal per ton for the test period was \$92.52 per ton, compared  
14 to \$86.94 per ton in the prior test period, representing an increase of approximately 6%. This includes  
15 an average transportation cost of \$36.75 per ton in the test period, compared to \$31.76 per ton in the  
16 prior test period, representing an increase of approximately 16%. The Company's average cost of  
17 gas purchased for the review period was \$3.76 per million MBtu, as compared to \$3.74 per million  
18 MBtu in the prior review period, representing a decrease of 1%. These costs include gas supply,  
19 transportation, storage and financial hedging.

20           DEP's coal burn for the test period was 3.4 million tons, compared to a coal burn of 3.6  
21 million tons in the prior test period, representing a decrease of 6%. The Company's natural gas  
22 burn for the test period was 157.5 million MBtu, compared to a gas burn of 1666.6 million MBtu

1 in the prior test period, representing a decrease of approximately 5%.

2 DEP's projections for the billing period include approximately 2.9 million tons of coal and  
3 156.7 million MBtu of natural gas consumed.

4 The Company continues to maintain a comprehensive coal and natural gas procurement  
5 strategy that has proven successful over the years in limiting average annual fuel price changes  
6 while actively managing the dynamic demands of its fossil fuel generation fleet in a reliable and  
7 cost-effective manner. With respect to coal procurement, the Company's procurement strategy  
8 includes: (1) having an appropriate mix of term contract and spot purchases for coal; (2) staggering  
9 coal contract expirations in order to limit exposure to forward market price changes; and (3)  
10 diversifying coal sourcing as economics warrant, as well as working with coal suppliers to  
11 incorporate additional flexibility into their supply contracts.

12 The Company has implemented natural gas procurement practices that include periodic  
13 Request for Proposals and shorter-term market engagement activities to procure and actively  
14 manage a reliable, flexible, diverse, and competitively priced natural gas supply. These  
15 procurement practices include contracting for volumetric optionality in order to provide flexibility  
16 in responding to changes in forecasted fuel consumption. Lastly, DEP continues to maintain a  
17 short-term financial natural gas hedging plan to manage fuel cost risk for customers via a  
18 disciplined, structured execution approach.

19 This concludes my testimony summary.  
20  
21

**DUKE ENERGY PROGRESS, LLC  
JOHN D. SWEZ AND JOHN A. VERDERAME  
JOINT REBUTTAL TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1272**

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Sep 20 2021

1           The purpose of this rebuttal testimony is to respond to the testimony of Sierra Club  
2     witness Devi Glick related to DEP's unit commitment and dispatch of its coal generation  
3     stations. We also explain why the Commission should not accept her proposal to disallow  
4     a portion of DEP's costs from this proceeding.

5           Witness Glick's testimony contains many improper assumptions and calculations  
6     that have no connection to actual utility operations, and there are several concerning  
7     aspects of her analysis.

8           First, her analysis fails to recognize the fact that DEP unit commitment seeks to  
9     minimize production costs to serve a given amount of customer demand within reliability  
10    constraints. Her analysis calculates generator margin using system lambda data without  
11    regard to customer demand.

12          Second, her analysis unreasonably assumes that the Company has an unlimited  
13    amount of generation available at the lambda price. She frequently states that it would  
14    have been "less costly to serve retail ratepayers with other resources" but fails to offer any  
15    credible or specific explanations of how the Company could have replaced the thousands  
16    of megawatts of reliable generation energy and capacity, or identify any specific resources  
17    that should have been dispatched to serve customers absent these generating resources.  
18    Simply put, this hypothetical alternative generation did not exist at the given lambda price.

19          Third, Witness Glick improperly equates the lambda data to the total compensation  
20    of a generating unit, which is more appropriate for an analysis made for generators in a  
21    RTO rather than for a utility like DEP. System lambda is not an appropriate measure of

1 whether a unit commitment decision is economic because it is a calculation of  
2 instantaneous system incremental costs, while unit commitment decisions are based on the  
3 total variable costs over a multi-day period.

4 Fourth, Ms. Glick's analysis fails to recognize additional physical costs of a  
5 generator that are required in order to produce energy, such as startup and no-load costs.  
6 In doing so, she ignores the real costs of commitment associated with starting a unit and  
7 keeping it online, but which are not related to a change in generation output. Her analysis  
8 assumes that a marginal generating unit can be turned online and kept online with zero  
9 cost, but this ignores the physical realities of startup and no-load costs incurred by the  
10 utility in its actual plant operations.

11 Fifth, Ms. Glick's analysis fails to properly recognize the need to run units for  
12 reliability, or operating reserves. The Company's unit commitment plans include 1,195  
13 MW of these reserves, which are available capacity above the expected peak load to  
14 account for potential loss of a unit, regulating reserves, or load forecasting error. At times,  
15 reliability needs require that a coal unit be turned on to ensure day-ahead planning reserves  
16 are met. By ignoring these needs, Witness Glick is artificially increasing the perceived  
17 cost of alleged uneconomic commitment of generating units at the expense of reliability.

18 Sixth, her analysis selectively and improperly uses averaged data over a longer  
19 period in order to draw certain conclusions. I fundamentally disagree with the comparison  
20 of monthly production costs to system lambda because it ignores the way in which a utility  
21 actually operates its system on an hourly basis to ensure reliable and economic service, and  
22 the comparison does not provide an accurate picture concerning the hours in which the  
23 units were called to operate. Further, averaging all instantaneous values ignores the

1 variability that is experienced during real-world operations. To average these values over  
2 a full month provides even less value because it ignores the obligation to provide constant,  
3 reliable service to customers. Her analysis ignores the fact that a unit may have been  
4 critical to responding to customer demands during a shorter critical period of time and fails  
5 to acknowledge that a unit with a higher average cost is often still critical in ensuring  
6 reliability.

7 Finally, Ms. Glick's analysis incorrectly implies that fixed costs should be included  
8 in unit commitment and dispatch decisions, which could actually result in uneconomic  
9 outcomes and inflate costs for customers. She fails to recognize that the inclusion of fixed  
10 costs into unit commitment and dispatch decisions is inappropriate because fixed fuel-  
11 related costs are "sunk" – in other words, they will be incurred whether or not a unit is  
12 committed and dispatched.

13 As noted in the rebuttal testimony, we disagree with Ms. Glick's analysis that the  
14 Company's practices are in any way imprudent. If the Company had decommitted its coal  
15 fleet as suggested by Witness Glick, the Company would have been forced to operate  
16 without adequate day-ahead planning reserves, rely on non-firm energy purchases to  
17 maintain reliability, purchase more expensive energy than what would have been  
18 decommitted, and resort to curtailing customer load multiple times.

19 We recommend that the Commission not impose additional reporting requirements  
20 as proposed by Witness Glick. The information she seeks is available to the parties, and  
21 was provided to the parties, in discovery. We also recommend that the Commission reject  
22 the other recommendations of Ms. Glick as discussed further in our prefiled testimony.

23 This concludes the summary of our rebuttal testimony.