

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1341

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
Application of Duke Energy Progress, LLC	)	<b>DIRECT TESTIMONY</b>
Pursuant to G.S. 62-133.2 and NCUC Rule	)	<b>OF DANA M. HARRINGTON FOR</b>
R8-55 Relating to Fuel and Fuel-Related	)	<b>DUKE ENERGY PROGRESS, LLC</b>
Charge Adjustments for Electric Utilities	)	

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1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Dana M. Harrington, and my business address is 525 South Tryon  
3 Street, Charlotte, North Carolina (“NC”).

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am a Rates and Regulatory Strategy Manager supporting both Duke Energy  
6 Progress, LLC (“DEP” or the “Company”) and Duke Energy Carolinas, LLC  
7 (“DEC”) (collectively, the “Companies”).

8 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**  
9 **PROFESSIONAL EXPERIENCE.**

10 A. I received a Bachelor of Arts degree in Psychology with Honors from the University  
11 of North Carolina at Chapel Hill and I am a certified public accountant licensed in  
12 the State of North Carolina. I began my accounting career in 2005 with Greer and  
13 Walker, LLC as a tax accountant and later a staff auditor. From 2007 until 2010 I  
14 was an Accounting Analyst with Duke Energy in the Finance organization. In 2010,  
15 I joined the Rates Department as a Lead Rates Analyst where I spent eight years  
16 before being promoted to the position of Rates and Regulatory Strategy Manager.  
17 I have served in the Rates Manager capacity since 2019.

18 **Q. HAVE YOU PREVIOUSLY TESTIFIED OR SUBMITTED TESTIMONY**  
19 **BEFORE THE NORTH CAROLINA UTILITIES COMMISSION?**

20 A. Yes. I testified in DEP’s 2019 fuel proceeding under Docket No. E-2, Sub 1204 and  
21 have filed testimony or appeared before the Commission in each of DEP’s annual  
22 fuel cost proceedings thereafter. This is my sixth time testifying or submitting  
23 testimony before this Commission.

1     **Q.     ARE YOU FAMILIAR WITH THE ACCOUNTING PROCEDURES AND**  
2     **BOOKS OF ACCOUNT OF DEP?**

3     A.     Yes. Duke Energy Progress' books of account follow the uniform classification of  
4     accounts prescribed by the Federal Energy Regulatory Commission ("FERC").

5     **Q.     WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

6     A.     The purpose of my testimony is to present the information and data required by North  
7     Carolina General Statutes ("N.C. Gen. Stat.") § 62-133.2(c) and (d) and Commission  
8     Rule R8-55, as set forth in Harrington Exhibits 1 through 8, along with supporting  
9     workpapers. The test period used in supplying this information is the period of April  
10    1, 2023 through March 31, 2024 ("test period"), and the billing period is December 1,  
11    2024 through November 30, 2025 ("billing period").

12    **Q.     WHAT IS THE SOURCE OF THE ACTUAL INFORMATION AND DATA**  
13    **FOR THE TEST PERIOD?**

14    A.     Actual test period kilowatt hour ("kWh") generation, kWh sales, fuel-related  
15    revenues, and fuel-related expenses were taken from the Company's books and  
16    records. These books and records of DEP are subject to review by the appropriate  
17    regulatory agencies in the three jurisdictions that regulate DEP's electric rates, which  
18    are: the North Carolina Utilities Commission, the Public Service Commission of  
19    South Carolina, and the Federal Energy Regulatory Commission. In addition, third-  
20    party independent auditors perform an annual audit to provide assurance that, in all  
21    material respects, internal accounting controls are operating effectively, and DEP's  
22    financial statements are accurate.

23    **Q.     WERE HARRINGTON EXHIBITS 1 THROUGH 8 PREPARED BY YOU?**

24    A.     Yes, these exhibits were prepared by me and consist of the following:

- 1       • Harrington Exhibit 1: Summary Comparison of Fuel and Fuel-Related Costs  
2       Factors.
- 3       • Harrington Exhibits 2A and 2B: Fuel and Fuel-Related Costs Factors - reflecting a  
4       94.99% proposed nuclear capacity factor and projected billing period megawatt  
5       hour (“MWh”) sales.
- 6       • Harrington Exhibit 3A: Calculation of Proposed Composite Experience  
7       Modification Factor (“EMF”).
- 8       • Harrington Exhibit 3B: Calculation of Proposed EMF for Residential customers.
- 9       • Harrington Exhibit 3C: Calculation of Proposed EMF for Small General Service  
10      customers.
- 11      • Harrington Exhibit 3D: Calculation of Proposed EMF for Medium General Service  
12      customers.
- 13      • Harrington Exhibit 3E: Calculation of Proposed EMF for Large General Service  
14      customers.
- 15      • Harrington Exhibit 3F: Calculation of Proposed EMF for Lighting customers.
- 16      • Harrington Exhibit 4: Normalized Test Period MWh Sales, Fuel and Fuel-  
17      Related Revenue, Fuel and Fuel-Related Expense, and System Peak.
- 18      • Harrington Exhibit 5: Nuclear Capacity Ratings in Megawatts.
- 19      • Harrington Exhibits 6A and 6B: Fuel and Fuel-Related Costs Factors - reflecting a  
20      94.99% proposed nuclear capacity factor and normalized test period MWh sales.
- 21      • Harrington Exhibits 7A and 7B: Fuel and Fuel-Related Costs Factors - reflecting a  
22      93.65% North American Electric Reliability Corporation (“NERC”) five-year  
23      national weighted average nuclear capacity factor for comparable units and

1 projected billing period MWh sales.

- 2 • Harrington Exhibit 8A: March 2024 Monthly Fuel Report, as required by NCUC
- 3 Rule R8-52.
- 4 • Harrington Exhibit 8B: March 2024 Monthly Base Load Power Plant Performance
- 5 Report, as required by NCUC Rule R8-53.

6 **Q. PLEASE EXPLAIN WHAT IS SHOWN ON HARRINGTON EXHIBIT 1.**

7 A. Harrington Exhibit 1 presents a summary of fuel and fuel-related cost factors, which  
 8 include: (1) the currently approved fuel and fuel-related cost factors, (2) the projected  
 9 fuel and fuel-related cost factors using the proposed nuclear capacity factor with  
 10 normalized test period sales, (3) the projected fuel and fuel-related cost factors using  
 11 the NERC five-year national weighted average nuclear capacity factor with projected  
 12 billing period sales, and (4) the proposed fuel and fuel-related cost factors using the  
 13 proposed nuclear capacity factor with projected billing period sales.

14 **Q. WHAT FUEL AND FUEL-RELATED COST FACTORS DOES DEP**  
 15 **PROPOSE FOR INCLUSION IN RATES FOR THE BILLING PERIOD?**

16 A. The Company proposes that the fuel and fuel-related costs factors shown in the table  
 17 below be reflected in rates during the billing period. The factors that DEP proposes  
 18 in this proceeding utilize a 94.99% nuclear capacity factor as testified to by Company  
 19 Witness Simril. The components of the proposed fuel and fuel-related cost factors by  
 20 customer class, as shown on Harrington Exhibit 1 in cents per kWh, are:

		Small	Medium	Large	
		General	General	General	
	Residential	Service	Service	Service	Lighting
Description	cents/kWh	cents/kWh	cents/kWh	cents/kWh	cents/kWh
Total adjusted Fuel and Fuel-Related Costs Factors	2.860	3.284	2.758	2.758	2.857
EMF Increment/(Decrement)	0.354	0.037	0.174	0.424	0.900
Proposed Net Fuel and Fuel-Related Costs Factors	3.214	3.321	2.932	3.182	3.757

1 **Q. WHAT IS THE IMPACT TO CUSTOMERS' BILLS IF THE PROPOSED**  
 2 **FUEL AND FUEL-RELATED COST FACTORS ARE APPROVED BY THE**  
 3 **COMMISSION?**

4 A. If the proposed fuel and fuel-related cost factors are approved, there will be, an  
 5 average decrease of 5.5% to Residential bills, 5.9% to Small General Service bills,  
 6 6.5% to Medium General Service bills, 2.1% to Large General Service bills, and 4.5%  
 7 to Lighting bills. The table below shows both the proposed and existing fuel and  
 8 fuel-related cost factors (excluding regulatory fee).

		Small General	Medium General	Large General	
	Residential	Service	Service	Service	Lighting
Description	cents/kWh	cents/kWh	cents/kWh	cents/kWh	cents/kWh
Proposed Net Fuel and Fuel-Related Costs Factors	3.214	3.321	2.932	3.182	3.757
Approved Net Fuel and Fuel-Related Costs Factors	4.073	4.334	3.653	3.361	5.731

9  
 10 **Q. HOW DOES DEP DEVELOP THE FUEL FORECASTS FOR ITS**  
 11 **GENERATING UNITS?**

12 A. The fuel forecast supporting the projected fuel cost for this filing was generated by an  
 13 hourly stochastic dispatch model that considers the latest forecasted fuel prices that  
 14 are reflective of market supply chain dynamics, planned maintenance and scheduled  
 15 refueling outages at the generating plants, forced outage estimates derived from  
 16 historical trends, generating unit performance parameters, and expected market  
 17 conditions associated with power purchases and off-system sales opportunities. In  
 18 addition, the forecasting model reflects the joint dispatch of the combined power  
 19 supply resources of DEP and DEC.

20 **Q. PLEASE EXPLAIN HARRINGTON EXHIBITS 2A AND 2B.**

21 A. On Harrington Exhibit 2A, the prospective billing period system MWhs generated and  
 22 the forecasted costs to produce that generation are presented. The NC Retail

1 jurisdictional shares of fuel and fuel-related (non-capacity) costs and capacity costs  
2 on power purchases from renewable and qualifying facilities are calculated separately  
3 on Harrington Exhibit 2B, then further allocated to the NC Retail customer classes.  
4 Finally, the proposed fuel and fuel-related cost factors are calculated on Harrington  
5 Exhibit 2B by dividing each customer classes' allocated share of costs by each class's  
6 projected billing period MWh sales at meter. The proposed fuel factors derived on  
7 Harrington Exhibit 2B utilize a 94.99% nuclear capacity factor, which is further  
8 discussed by Company Witness Simril.

9 **Q. HOW ARE PROJECTED BILLING PERIOD COSTS ALLOCATED TO THE**  
10 **NORTH CAROLINA RETAIL JURISDICTION AND AMONG NORTH**  
11 **CAROLINA RETAIL CUSTOMER CLASSES?**

12 A. In accordance with the Commission's Order in the Company's most recent general  
13 rate case in Docket No. E-2, Sub 1300, the Company is no longer utilizing the uniform  
14 percentage average bill adjustment method of allocating fuel costs among NC retail  
15 customer classes. Rather, the Company is following cost causation principles.

16 Projected system fuel and fuel-related (non-capacity) costs are allocated to the  
17 NC retail jurisdiction and among NC retail customer classes based on projected billing  
18 period MWh sales at generation (to include line losses) as shown on Harrington  
19 Exhibit 2B lines 1 through 8. Projected system purchased power capacity costs, as  
20 described in subsections (5), (6) and (10) of N.C. Gen. Stat. § 62-133.2(a1), are  
21 allocated to the NC retail jurisdiction based on the twelve-coincident peak firm  
22 demand allocation factor from the 2023 Cost of Service study and among NC retail  
23 customer classes using the Modified Average & Excess (A&E) Method as adopted by  
24 the Commission in the utility's most recently approved general rate case. The

1 allocation of purchased power capacity costs is shown on Harrington Exhibit 2B lines  
2 12 through 15.

3 **Q. DID YOU DETERMINE THAT DEP'S ANNUAL CHANGE IN THE**  
4 **AGGREGATE AMOUNT OF THE COSTS IDENTIFIED IN SUBSECTIONS**  
5 **(4), (5), (6), (10) AND (11) OF N.C. GEN. STAT. § 62-133.2(A1) DID NOT**  
6 **EXCEED 2.5% OF ITS NC RETAIL GROSS REVENUES FOR 2023, AS**  
7 **REQUIRED BY N.C. GEN. STAT. § 62-133.2(A2)?**

8 A. Yes. The Company's analysis shows that the annual change in the costs recoverable  
9 under the relevant sections of the statute decreased year over year.

10 **Q. HARRINGTON EXHIBIT 3 SHOWS THE CALCULATION OF THE TEST**  
11 **PERIOD (OVER)/UNDER RECOVERY BALANCE AND THE PROPOSED**  
12 **EMF RATES BY CUSTOMER CLASS. HOW WAS THIS CALCULATED?**

13 A The test period (over)/under collection was determined each month by comparing the  
14 actual fuel revenues collected from each customer class to actual costs allocated to  
15 each customer class.

16 Actual fuel and fuel-related (non-capacity) costs were allocated to the NC  
17 retail jurisdiction and among NC retail customer classes according to actual billed  
18 sales at generation (to include line losses).

19 Actual purchased power capacity costs, as described in subsections (5), (6)  
20 and (10) of N.C. Gen. Stat. § 62-133.2(a1), were allocated to the NC retail jurisdiction  
21 and among NC retail customer classes according to the production demand allocation  
22 factor from the prior year cost of service study, which is updated each April.

23 EMF rates by customer class are calculated on Harrington Exhibits 3B through  
24 3F by dividing the EMF balance by normalized test period sales at meter (without line



1 losses). Finally, Harrington Exhibit 3A is a summation of Harrington Exhibits 3B  
2 through 3F.

3 **Q. PLEASE EXPLAIN HARRINGTON EXHIBIT 4.**

4 A. As required by NCUC Rule R8-55(e)(1) and (e)(2), Harrington Exhibit 4 presents test  
5 period actual MWh billed sales, the customer growth MWh adjustment, and the  
6 weather MWh adjustment. Test period MWh sales were normalized for weather using  
7 a 30-year period, consistent with the methodology utilized in DEP's most recent  
8 general rate case, which was Docket No. E-2, Sub 1300. Customer growth was  
9 determined using regression analysis for residential, small general service, and  
10 lighting classes, and a customer-by-customer analysis for medium and large general  
11 service customers. Harrington Exhibit 4 also shows the prior year twelve-coincident  
12 peak firm demand for the system, the NC retail jurisdiction, and the NC retail  
13 customer classes using the Modified Average & Excess (A&E) Method, which was  
14 adopted by the Commission in the utility's most recently approved general rate case.

15 **Q. PLEASE IDENTIFY WHAT IS SHOWN ON HARRINGTON EXHIBIT 5.**

16 A. Harrington Exhibit 5 presents the capacity ratings for each of DEP's nuclear units, in  
17 compliance with Rule R8-55(e)(12).

18 **Q. PLEASE EXPLAIN HARRINGTON EXHIBITS 6A and 6B.**

19 A. NCUC Rule R8-55(e)(3) requires the equivalent of the proposed net fuel and fuel-  
20 related cost factors to be determined using the proposed nuclear capacity factor, based  
21 on normalized test period sales, and utilizing the same methodology adopted by the  
22 Commission in the utility's last general rate case. Harrington Exhibits 6A and 6B  
23 present these calculations. The resulting projected fuel and fuel-related cost factors  
24 are shown on Harrington Exhibit 1 Line 5.

1 **Q. PLEASE EXPLAIN HARRINGTON EXHIBITS 7A and 7B.**

2 A. NCUC Rule R8-55(d)(1) requires the equivalent of the proposed net fuel and fuel-  
3 related cost factors to be determined based on projected billing period sales and  
4 utilizing the same methodology adopted by the Commission in the utility's last general  
5 rate case except for adjusting the proposed nuclear capacity factor to the most recent  
6 NERC five-year weighted average capacity factor. The most recent NERC five-year  
7 weighted average capacity factor is 93.65% and is further discussed by Witness  
8 Simril. Harrington Exhibits 7A and 7B present these calculations. The resulting  
9 projected fuel and fuel-related cost factors following these guidelines are shown on  
10 Harrington Exhibit 1 Line 6.

11 **Q. PLEASE SUMMARIZE THE METHOD USED TO ADJUST MWH**  
12 **GENERATION AND FUEL COSTS ON HARRINGTON EXHIBITS 6 AND 7.**

13 A. Harrington Exhibit 6 adjusts the coal MWh's produced by the dispatch model to  
14 account for the difference between projected system MWh sales at meter and  
15 normalized test period MWh sales at meter. The total system fuel costs are  
16 respectively adjusted at the coal price per MWh produced by the dispatch model.

17 Harrington Exhibit 7 decreases the nuclear generation produced by the  
18 dispatch model to account for the lower NERC five-year average nuclear capacity  
19 factor than the proposed nuclear capacity factor and increases the coal generation  
20 produced by the dispatch model respectively. The total system fuel costs are also  
21 adjusted at the nuclear and coal prices per MWh produced by the dispatch model,  
22 respectively.

23 **Q. HOW DID ACTUAL FUEL EXPENSES COMPARE WITH FUEL REVENUE**  
24 **DURING THE TEST PERIOD?**

1 A. Harrington Exhibit 3A demonstrates that, for the test period, the Company  
2 experienced a net under-recovery of approximately \$110.9 million (before  
3 adjustments) for the combined customer classes of the NC retail jurisdiction. This  
4 twelve-month accrual of under-recoveries is significantly lower than what was  
5 proposed in prior year rates, which was \$486.0 million (before adjustments).

6 The Company typically experiences some amount of (over)/under recovery of  
7 fuel costs during a test period. The EMF provision of fuel rates was established to  
8 address the differences between fuel revenues realized and fuel costs incurred during  
9 a test period. The successful catch-up in recovery achieved during the test period is  
10 the primary driver behind the decrease in fuel rates proposed in this filing.

11 **Q. IS THE COMPANY PROPOSING ANY COST ADJUSTMENTS TO THE**  
12 **TWELVE-MONTH TEST PERIOD UNDER-COLLECTION BEING**  
13 **REQUESTED FOR COST RECOVERY IN THIS PROCEEDING THAT**  
14 **WERE NOT REMITTED ON THE MONTHLY FUEL REPORTS?**

15 A. Yes. Consistent with the approach approved by the Commission in Docket No. E-2,  
16 Sub 1204, the Company is proposing to recover the related component of liquidated  
17 damages associated with the sale of by-products that were incurred in the test period  
18 on a cash basis rather than an accrual basis. To achieve this result, the North Carolina  
19 retail share of associated liquidated damages accrued during the test period has been  
20 excluded from the test period under-collection and the North Carolina retail share of  
21 the associated liquidated damages cash payment made during the test period has been  
22 included. These adjustments of approximately \$(0.9) million and \$5.3 million,  
23 respectively, are presented on Harrington Exhibit 3A and further itemized by customer  
24 class on Harrington Exhibits 3B through 3F.

1           The prospective North Carolina retail portion of the associated liquidated  
2 damages cash payment to be made during the billing period of approximately \$5.1  
3 million has also been included in projected billing period costs. This method is  
4 consistent with the approach approved by the Commission in Docket No. E-2, Sub  
5 1321.

6 **Q. DO YOU BELIEVE DEP'S FUEL AND FUEL-RELATED COSTS**  
7 **INCURRED IN THE TEST YEAR ARE REASONABLE?**

8 A. Yes. As shown on Harrington Exhibit 8A, DEP's test year actual fuel and fuel-related  
9 costs were 2.916 cents/kWh. Key factors in DEP's ability to maintain lower fuel and  
10 fuel-related rates include its generating portfolio of diverse fuel sources, the capacity  
11 factors of its nuclear fleet, and fuel procurement strategies, which mitigate volatility  
12 in supply costs. Other key factors include DEP's and DEC's respective expertise in  
13 transporting, managing and blending fuels, procuring reagents, and utilizing  
14 purchasing synergies of the combined Company, as well as the joint dispatch of DEP's  
15 and DEC's generation resources.

16           Company Witness Flanagan discusses the performance of the  
17 fossil/hydro/solar fleet, as well as the chemicals that DEP uses to reduce emissions.  
18 Company Witness Swez discusses fossil fuel costs and fossil fuel procurement  
19 strategies. Company Witness Houston discusses nuclear fuel costs and nuclear fuel  
20 procurement strategies, and Company Witness Simril discusses the performance of  
21 DEP's nuclear generation fleet.

22

1     **Q.     WHAT ARE THE KEY DRIVERS IMPACTING THE PROPOSED FUEL**  
2           **AND FUEL-RELATED COST FACTORS?**

3     A.     The primary driver of the fuel rate decrease is the request for collection of \$115.3  
4           million (after adjustments) in fuel under-collections compared to the requested \$444.8  
5           million (after adjustments) in fuel under-collections in existing rates. This decrease is  
6           partially offset by an increase in purchased power costs for the prospective billing  
7           period.

8     **Q.     HAS THE COMPANY FILED WORKPAPERS SUPPORTING THE**  
9           **CALCULATIONS, ADJUSTMENTS, AND NORMALIZATIONS AS**  
10          **REQUIRED BY NCUC RULE R8-55(E)(11)?**

11    A.     Yes. Workpapers supporting the calculations, adjustments, and normalizations  
12          utilized to derive the proposed fuel factors are included with this filing.

13    **Q.     DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

14    A.     Yes. It does.