



Jack E. Jirak
Deputy General Counsel

Mailing Address:
NCRH 20 / P.O. Box 1551
Raleigh, NC 27602

o: 919.546.3257
f: 919.546.2694

jack.jirak@duke-energy.com

May 27, 2021

VIA ELECTRONIC FILING

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

**RE: Duke Energy Carolinas, LLC's Rebuttal Testimony
Docket No. E-7, Sub 1250**

Dear Ms. Campbell:

Please find enclosed Duke Energy Carolinas, LLC's Rebuttal Testimony of John A. Verderame, in the above-referenced proceeding.

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

Sincerely,

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

Jack E. Jirak

Enclosure

cc: Parties of Record

OFFICIAL COPY

May 27 2021

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1250

In the Matter of)	
Application of Duke Energy Carolinas, LLC)	REBUTTAL TESTIMONY OF
Pursuant to G.S. 62-133.2 and NCUC Rule)	JOHN A. VERDERAME FOR
R8-55 Relating to Fuel and Fuel-Related)	DUKE ENERGY CAROLINAS, LLC
Charge Adjustments for Electric Utilities)	

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION WITH THE COMPANY.

A. My name is John A. Verderame. My business address is 526 South Church Street, Charlotte, North Carolina 28202. I am employed as Vice President, Fuels & Systems Optimization for Duke Energy Corporation (“Duke Energy”). In that capacity, I lead the organization responsible for the purchase and delivery of coal, natural gas, fuel oil, and reagents to Duke Energy’s regulated generation fleet, including Duke Energy Carolinas, LLC (“Duke Energy Carolinas,” “DEC,” or the “Company”) and Duke Energy Progress, LLC (“DEP”) (collectively, the “Companies”). In addition, I manage the fleet’s power trading, system optimization, energy supply analytics, and contract administration functions.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN SUPPORT OF THE COMPANY’S APPLICATION IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the testimony of Ms. Devi Glick filed on behalf of Sierra Club as it relates to DEC’s unit commitment and dispatch processes of its coal generation stations.

Q. WHAT IS THE PURPOSE OF THIS PROCEEDING?

A. The purpose of this proceeding is to obtain Commission approval of the Company’s proposed fuel rates pursuant to N.C. Gen. Stat. § 62-133.2 and Commission Rule R8-55.

1 **Q. HAS ANY PARTY RECOMMENDED AN ADJUSTMENT TO THE**
2 **FUEL RATES PROPOSED BY THE COMPANY?**

3 A. No.

4 **Q. PLEASE PROVIDE YOUR GENERAL RESPONSE TO THE**
5 **TESTIMONY OF SIERRA CLUB WITNESS DEVI GLICK.**

6 A. Consistent with the testimony of Sierra Club's witness from the 2019 fuel case
7 proceedings for the Company and for DEP, witness Glick submits extensive
8 testimony concerning a range of issues—some of which are not relevant to this
9 proceeding and others of which have been addressed in other proceedings—but
10 does not make any recommendation that is germane to the purpose of this
11 proceeding.

12 **Q. HAS THE COMPANY PROVIDED SUFFICIENT INFORMATION IN**
13 **THIS PROCEEDING TO ESTABLISH ITS TEST PERIOD FUEL AND**
14 **FUEL-RELATED COSTS WERE REASONABLE AND PRUDENTLY**
15 **INCURRED, INCLUDING THAT INFORMATION THAT IS**
16 **REQUIRED UNDER APPLICABLE LAW?**

17 A. Yes. The content and structure of the Company's application in this proceeding
18 conforms to all applicable legal requirements and is substantially identical to
19 that of all recent fuel rider applications, and the Company has responded to
20 extensive discovery requests, including those of Sierra Club. Furthermore, no
21 party has alleged that the Company's fuel application failed to conform to
22 applicable law. Specifically, the Company's application conformed in all
23 respects with the requirements outlined in Commission Rule R8-55, including
24 the specific information required to be included in a fuel rider application under

1 Rule R8-55(e). Compliance with the Commission's clear and objective
2 information requirements is the appropriate standard for evaluating the
3 sufficiency of the Company's application.

4 **Q. DID SIERRA CLUB'S WITNESS IN THE 2020 FUEL PROCEEDINGS**
5 **FOR DEC AND DEP ALSO CRITICIZE THE AMOUNT OF**
6 **INFORMATION PROVIDED BY DEC AND DEP, RESPECTIVELY?**

7 A. Yes. In the 2020 fuel proceedings, the Sierra Club witness similarly ignored
8 the applicable legal requirements and, instead, sought to impose his subjective
9 judgement regarding the necessary contents of the Company's fuel application.

10 **Q. WHAT WAS THE COMMISSION'S CONCLUSIONS ON THESE**
11 **ISSUES IN THE 2020 DEC AND DEP FUEL PROCEEDINGS?**

12 A. The Commission rejected the recommendation of the Sierra Club witness in the
13 2020 fuel proceedings for DEC and DEP. Specifically, in the DEP fuel order,
14 the Commission confirmed "that the sufficiency of the Company's fuel
15 application should be evaluated based on the requirements of applicable law."¹

16 The Commission further noted that it had previously rejected similar
17 recommendations from the Sierra Club witness and observed that "the scope
18 and level of detail contained in the Company's application, testimony, exhibits,
19 and workpapers as filed in this proceeding conforms with applicable law and is
20 consistent with prior applications."² The Commission has rejected similar
21 recommendations from a Sierra Club witness in the two most recent fuel

¹ Order Approving Fuel Charge Adjustment, Docket No. E-2, Sub 1250 (November 30, 2020), at 12-13.

² Id. at 13.

1 proceedings and should, for the same reasons, reject the recommendation of the
2 Sierra Club witness in this proceeding.

3 **Q. PLEASE RESPOND TO WITNESS GLICK'S RECOMMENDATION**
4 **THAT "THE COMMISSION DIRECT DEC TO CONDUCT A NEW**
5 **RETIREMENT STUDY OF EACH UNIT IN THE COMPANY'S**
6 **FLEET."**³

7 A. There is simply no basis under applicable law to suggest that a fuel rider
8 proceeding is the appropriate forum in which to consider a retirement analysis
9 of Company generating units. In fact, Witness Glick acknowledges that a
10 retirement analyses has been conducted in the 2020 Integrated Resource Plan
11 ("IRP") but, inexplicably and without alleging any infirmity in the retirement
12 analyses in the IRP, insists that the same analyses be performed in this
13 proceeding. This recommendation should be completely disregarded.

14 **II. UNIT COMMITMENT AND DISPATCH**

15 **Q. PLEASE PROVIDE A GENERAL DESCRIPTION OF THE CONCEPTS**
16 **OF UNIT COMMITMENT AND DISPATCH?**

17 A. "Unit Commitment" or "Commitment" is the process of modeling the optimal
18 mix of generation units to be placed online to economically and reliably meet
19 projected system needs. "Generation Dispatch" or "Dispatch" is the process of
20 economically optimizing the MW output of individual generators once they
21 have been placed online (through the unit commitment process) by evaluating
22 the instantaneous balancing of load and generation. In lay terms, the

³ Glick Direct, at 42.

1 commitment process determines which generating units should be placed online
2 and dispatch determines how those units are operated once they are online.

3 **Q. PLEASE DESCRIBE GENERALLY THE COMPANY'S APPROACH**
4 **TO COMMITMENT AND DISPATCH?**

5 A. The Company performs a detailed daily process to determine the unit
6 commitment plan that is necessary to economically and reliably meet projected
7 system needs over the next seven days. The Company utilizes a production cost
8 model called GenTrader to determine an optimal unit commitment plan to
9 economically and reliably meet system requirements. Inputs to the model
10 include, but are not limited to, the following: 1) forecasted customer energy
11 demand; 2) fuel commodity and emission allowance market prices; 3)
12 contractual obligations including power market purchases and sales; 4)
13 generating unit parameters such as, but not limited to, minimum load, maximum
14 load, heat rate, ramp rate, variable O&M, start-up costs and shut-down costs;
15 and 5) planned unit outages and unit de-rates. The production cost model output
16 produces the optimized hourly unit commitment plan for the 7-day forecast
17 period. This unit commitment plan also provides the starting point for dispatch,
18 but dispatch is then also subject to real time adjustments due to changing system
19 conditions. The unit commitment plan is prepared daily and adjusted, as needed,
20 throughout any given day to respond to changing real time system conditions.

21 Only variable costs are utilized in the unit commitment model. Fixed
22 costs—which are those costs that will be incurred regardless of whether a unit
23 is committed—are not considered in the development of the unit commitment
24 plan.

1 **Q. WHAT IS WITNESS GLICK’S BENCHMARK FOR ECONOMIC UNIT**
2 **COMMITMENT AND DISPATCH?**

3 A. Witness Glick states in her testimony that “[w]hen a unit is committed
4 economically, the unit is reasonably expected to be lower cost than the marginal
5 cost of energy, called ‘system lambda’ over the next day or days.”⁴

6 **Q. DO YOU AGREE THAT SYSTEM LAMBDA IS AN APPROPRIATE**
7 **MEASURE OF WHETHER A UNIT COMMITMENT DECISION IS**
8 **ECONOMIC?**

9 A. No. System lambda is a calculation of *instantaneous* system *incremental* cost,
10 whereas unit commitment decisions are appropriately made based on the *total*
11 variable cost of generation over a *multi-day* period. If a unit is projected to
12 provide benefit to customers over a multi-day period based on the total variable
13 cost of generation, then the unit is placed online. Once online, the unit is
14 dispatched based on the instantaneous system incremental cost. In other words,
15 system lambda is the appropriate price signal for dispatch decisions but not for
16 unit commitment decisions. Witness Glick fundamentally misunderstands the
17 Company’s unit commitment methodology.

18 **Q. WITNESS GLICK OFFERS A COMPARISON OF CERTAIN UNITS’**
19 **MONTHLY AVERAGE COST OF GENERATION TO A MONTHLY**
20 **AVERAGE SYSTEM LAMBDA.⁵ IS THIS AN APPROPRIATE**
21 **COMPARISON?**

⁴ Glick Direct Testimony, at 13.

⁵ Glick Direct, at 21.

1 A. No. This comparison is not meaningful and provides no useful information.
2 First, system lambda is the instantaneous marginal cost on the system and
3 varies, sometimes substantially, over the course of day and certainly over the
4 course of a month. To average all of these instantaneous values ignores the
5 actually experienced variability. Averaging these values over a month has even
6 less value, as it is ignoring the fact that delivering energy to a customer is a 24
7 hour a day, 7 days a week, 365 days a year obligation. Averaging instantaneous
8 data into a monthly comparison ignores the fact that the unit may have been
9 critical to supplying customer demand at certain critical periods of time. Stated
10 simply, a unit with a higher average cost is still often critical in ensuring
11 reliability during a high price period on the system even where the average
12 system lambda is lower than the average cost of the unit. Witness Glick paints
13 with a broad brush with no appreciation for the actual minute by minute
14 dispatch decisions made by the Company to ensure reliable and economic
15 service.
16
17 Second, the average cost of generation cited by Witness Glick is also misleading
18 because average costs are not the prices on which the Company makes dispatch
19 decisions. A generating unit's marginal cost on which dispatch decisions are
20 made is lower than its average cost of generation because average cost of
21 generation includes fixed fuel transportation costs, start-up fuel costs and no-
22 load cost (which is the cost of fuel needed to produce steam pressure sufficient
23 to synchronize the generator to the grid), all of which are sunk costs.

1 **Q. IS THE PRACTICE OF UNIT COMMITMENT PLANNING AND**
2 **DISPATCHING UNITS BASED ON VARIABLE COSTS CONSISTENT**
3 **WITH GOOD UTILITY PRACTICE?**

4 A. Yes. Fixed fuel-related costs are “sunk,” meaning that the cost will be incurred
5 whether or not a unit is committed and dispatched. It is therefore entirely
6 reasonable, and consistent with industry practice, to only utilize variable costs
7 when making commitment and dispatch decisions.

8 **Q. WHAT OTHER ASPECTS OF THE COMMITMENT AND DISPATCH**
9 **PROCESS DOES WITNESS GLICK OVERSIMPLIFY OR IGNORE?**

10 A. Witness Glick presents an oversimplified view of unit commitment and
11 dispatch decisions but ignores the real world decisions made by the Company
12 to ensure reliable service—that is, the necessity of maintaining day-ahead
13 planning reserves, operating reserves, and regulating reserves in order to
14 maintain system reliability. The Company’s unit commitment plans include
15 1,770 MW of capacity above and beyond DEC’s expected peak load. Capacity
16 must be online (or available) within a short period of time. A coal unit will
17 provide energy and capacity during the peak. The Company recognizes that the
18 capacity factors of its coal fleet are declining. For example, Allen Station’s
19 operation strategy has shifted from a baseload to a cycling resource. However,
20 the Company requires cycling resources, which operate at lower capacity
21 factors, to provide reliable service to customers in periods of high demand. If
22 a needed coal unit were not online then the Company would have to start more
23 expensive additional CTs and/or purchase more expensive energy and capacity

1 from the market (assuming that capacity was even available in the market
2 during such a time).

3 **Q. PLEASE RESPOND TO WITNESS GLICK'S ASSERTIONS**
4 **REGARDING THE "PERFORMANCE" OF THE COMPANY'S COAL**
5 **UNITS.**

6 A. Witness Glick repeatedly refers to the "performance" of the Company's coal
7 units when assessing the capacity factors of the units. As an initial matter,
8 assessing the capacity factors of units and their value to the system is not
9 relevant to a fuel proceeding, and witness Glick's testimony in this respect
10 should be ignored.

11

12 Nevertheless, it is worth noting that witness Glick's description of a unit's
13 "performance" is misleading. There is certainly no dispute that certain of the
14 Company's coal units have low capacity factors. But this does not equate to
15 poor performance. The Company maintains required capacity resources to
16 meet its system requirements and obligations, and the fact that certain units are
17 not required to operate at times does not equate to poor performance or mean
18 that the units are not necessary to ensure reliability. Witness Glick's
19 characterization and comparisons ignore the Company's capacity reserve
20 requirements and obligations and the fact the annualized capacity factors of
21 certain coal units are lower because the Company committed and dispatched
22 other more cost effective units or, if available purchased energy and capacity
23 from the bi-lateral power market before committing and dispatching such units.

1 However, a low capacity factor in a particular year does not, by itself, eliminate
2 the need for these units.

3 Q. WHAT IS YOUR RESPONSE TO WITNESS GLICK’S SUGGESTION
4 THAT THE COMPANY COULD HAVE PROVIDED LESS COSTLY
5 CUSTOMER SERVICE BY NOT COMMITTING ITS COAL UNITS
6 BUT INSTEAD SERVING RETAIL LOAD WITH “OTHER
7 RESOURCES”?²⁶

8 A. Witness Glick does not attempt to offer a credible or specific explanation of
9 how the Company could have replaced the approximately 6,934 MW of reliable
10 generation energy and capacity provided by the Company's coal units nor does
11 she identify which specific "other resources" she believes should have been
12 dispatched to serve customers.

13 **III. COAL UNIT COSTS**

14 **Q. PLEASE RESPOND TO WITNESS GLICK'S ASSERTIONS**
15 **CONCERNING THE COMPANY'S CLASSIFICATION OF FIXED**
16 **AND VARIABLE COSTS?**

17 A. Sierra Club witness Glick refers to “underrepresented costs” (a term that she
18 never explains) and then states “[i]f DEC updated its marginal costs to represent
19 a larger portion of the production cost of each unit, its coal units would shift
20 higher on the supply stack.”⁷ While it is common sense that shifting more costs
21 from fixed to variable will cause a resource to move higher in the stack, witness

⁶ Glick Direct, at 9.

⁷ Glick Direct, at 29.

1 Glick utterly fails to identify any specific cost that DEC is allegedly mis-
2 categorizing.

3

4 When making unit commitment and dispatch decisions, the Company evaluates
5 all generation cost types and appropriately categorizes them as fixed or variable.

6 Witness Glick has provided no specific examples of costs categorized as fixed
7 that she believes should be categorized as variable. It would be inappropriate
8 and potentially result in a less economic commitment and dispatch outcome to
9 assign fixed costs as variable for inclusion into unit commitment and dispatch
10 prices just to achieve witness Glick's apparently desired result of seeing coal
11 units shift higher on the supply stack.

12 **Q. DOES WITNESS GLICK, IN HER TESTIMONY, EVER DISCUSS OR**
13 **ACKNOWLEDGE THE ABILITY OF THE COMPANY'S COAL**
14 **FLEET TO OPERATE ON NATURAL GAS?**

15 A. No, despite being provided cost of generation for natural gas, natural gas burns
16 and natural gas production costs related to dual fuel operations at Cliffside Units
17 5&6, Belews Creek Unit 1, and Marshall Units 3&4, witness Glick never
18 discusses the dual fuel operation of these units.

19 **Q. HOW DOES THE COMPANY RESPOND TO WITNESS GLICK'S**
20 **ASSERTION THAT THE COMPANY OMITTED FUEL AND**
21 **VARIABLE COSTS REPRESENTING 40% OF THE COMPANY'S**
22 **ACTUAL PRODUCTION COSTS?**

23 A. Based on the working sheet providing by Sierra Club in response to the
24 Company's data request, it appears that witness Glick took the Average Coal

1 Cost of Generation (\$/MWh) and multiplied that by the total daily Net
2 Generation (MWh) aggregated by month including dual fuel natural gas
3 generation. This calculation produced witness Glick's production costs of
4 \$558M. However, witness Glick's calculation excludes the Average Natural
5 Gas Cost of Generation (\$/MWh) for the dual fuel units of Belews Creek,
6 Cliffside and Marshall which were provided to Sierra Club as part of Data 1-
7 3f&j. In other words, it appears that witness Glick's calculations in this respect
8 were fundamentally flawed by ignoring the gas operation of these units.

9
10 Beyond this exclusion, it is not entirely clear what costs witness Glick is
11 referring to that are being omitted. If witness Glick is referring to the omission
12 of variable costs in the unit commitment and dispatch process, the Company
13 vigorously disagrees with the assertion. As previously outlined, the Company
14 includes all variable costs in its unit commitment and dispatch process and
15 excludes fixed costs that would be incurred regardless of whether a unit ran or
16 not.

17 **Q. WITNESS GLICK ALLEGES THAT THE COMPANY INCURRED \$8.5**
18 **MILLION IN AVOIDABLE OPERATIONAL BASED ON A**
19 **COMPARISON OF "MONTHLY PRODUCTION COSTS RELATIVE**
20 **TO SYSTEM LAMBDA."**⁸ **PLEASE RESPOND.**

21 **A.** I fundamentally disagree with this allegation. Witness Glick's testimony in this
22 instance once again utilizes average monthly numbers (average production
23 costs and average system lambda) in a completely inappropriate manner that

⁸ Glick Rebuttal, at 38.

1 ignores the way in which a utility actually operates its system on an hourly basis
2 to ensure reliable and economic service. The average system lambda does not
3 provide the real picture concerning the hours in which the units in question were
4 called up on to operate when needed.

5 **Q. HOW DOES THE COMPANY RESPOND TO WITNESS GLICK'S**
6 **ASSERTION THAT THE COMPANY DID NOT PROVIDE THE 7 DAY**
7 **AHEAD UNIT COMMITMENT FORECAST?⁹**

8 A. Witness Glick's assertion in this respect is simply incorrect, as in fact the
9 Company provided every 7 day ahead unit commitment forecast published in
10 the year 2020 (1,078 individual forecasts) to Sierra Club in the supplemental
11 response to discovery request Sierra Club DR1-9b. These forecasts were
12 delivered to Sierra Club on May 7, 2021. These files are the output of the
13 GenTrader model and indicated the hourly optimized unit commitment and
14 dispatch plan for the next seven days.

15 **Q. IN WHAT WAYS IS SIERRA CLUB TESTIMONY IN THIS**
16 **PROCEEDING SIMILAR TO ITS TESTIMONY IN THE RECENT DEC**
17 **RATE CASE IN DOCKET NO. E-7, SUB 1214?**

18 A. In the DEC rate case in Docket No. E-7, Sub 1214, Sierra Club's witness made
19 a number of outlandish recommendations concerning the Company's coal units,
20 all of which were rejected by the Commission. In rejecting the Sierra Club's
21 witnesses recommendations, the Commission observed, in part, that the Sierra
22 Club witness had, by her own admission, failed to "evaluate what replacement
23 alternatives the Company should have chosen instead of making the

⁹ Glick Direct, at 39.

1 investments, and did not identify any particular investment DEC should not
2 have made.” The Commission also noted that the Sierra Club witness had
3 acknowledged that “she did not analyze whether shutting the units down was a
4 feasible path DEC could have chosen and still have been able to meet its service
5 obligations.”

6
7 While in this proceeding the Sierra Club witness has not made an actual
8 disallowance recommendation, there are substantial similarities with the Sierra
9 Club positions from the DEC rate case, in that the Sierra Club witness in this
10 proceeding has failed to identify any specific examples of ways in which the
11 Company should have operated its system differently during the test period or
12 identified any specific decision that is imprudent. The Sierra Club’s witness
13 does not undertake a meaningful assessment of reliability and has utterly failed
14 to identify a single decision by the Company during the test period that should
15 have been different.

16
17 **Q. WHAT OTHER GENERAL OBSERVATIONS DO YOU HAVE**
18 **CONCERNING WITNESS GLICK’S TESTIMONY?**

19 A. Sierra Club witness Glick also makes general conclusory assertions with little
20 to no hard evidence to support such assertions. For instance, Witness Glick
21 asserts that “in the past utilities operated their coal-fired plants as baseload
22 resources with little thought given to whether the plants should be turned on or
23 off.” I categorically reject this assertion as it relates to DEC’s operation of its
24 generating facilities—there has been no period of time in which DEC operated
25 its plants “with little thought given to whether the plants should be turned on or

1 off.” When asked in discovery to produce “all analysis, workpapers,
2 documents and supporting data” for such statement, Sierra Club asserted that
3 “[t]his statement is supported by Ms. Glick’s experience reviewing the changes
4 in the operation and performance of coal-fired power plants across historical
5 and current data.” In other words, witness Glick has made a sweeping assertion
6 of a general lack of prudence across all utilities and yet is not able to offer a
7 single concrete piece of evidence to support this assertion.

8
9 Witness Glick also makes generalized recommendations concerning the
10 Company’s coal and transportation contracting strategies. For instance, witness
11 Glick asserts that a “...responsible utility manager should seek to minimize the
12 portion of average costs that falls into these categories and are therefore omitted
13 from the unit commitment process. Specifically, this can be done by (1)
14 securing fuel and transportation contracts that are flexible and have minimal
15 locked-in or must-take provisions; (2) carefully reviewing the costs of fuel
16 contracts relative to alternatives, including reduced operation and retirement of
17 the plant, prior to signing any new fuel contracts...” Yet, when asked in
18 discovery, witness Glick failed to identify a single instance of a fuel or
19 transportation contract at issue in this proceeding that DEC should not have
20 entered. Furthermore, witness Glick acknowledged in discovery response that
21 she has never been “responsible for the negotiation of a fuel or transportation
22 contract in connection with the operation of coal-fired generating facility.” In
23 other words, witness Glick seeks to opine on technical topics regarding which

1 she has no personal experience and for which she is unable to even attempt to
2 identify an alleged imprudent decision.

3
4 **Q. PLEASE COMMENT GENERALLY ON THE PURPOSE OF THIS**
5 **PROCEEDING AS IT RELATES TO THE TESTIMONY OF SIERRA**
6 **CLUB WITNESS GLICK.**

7 A. Once again, the purpose of this proceeding is to establish fuel rates for
8 DEC. Witness Glick has not recommended any changes to the fuel rates
9 proposed by DEC. Instead, witness Glick has sought to leverage this
10 proceeding into an opportunity to opine on a number of topics that are either
11 properly addressed in other proceedings or have previously been rejected by the
12 Commission. In the Company's view, such efforts are not an efficient use of
13 regulatory resources.

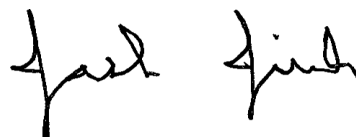
14 **Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL**
15 **TESTIMONY?**

16 A. Yes, it does.
17

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC's Rebuttal Testimony, in Docket No. E-7, Sub 1250, has been served by electronic mail, hand delivery, or by depositing a copy in the United States mail, postage prepaid, properly addressed to parties of record.

This the 27th day of May, 2021.

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

Jack E. Jirak
Deputy General Counsel
Duke Energy Corporation
P.O. Box 1551/NCRH 20
Raleigh, North Carolina 27602
(919) 546-3257
Jack.jirak@duke-energy.com