BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1146

In the Matter of		
Application of Duke Energy Carolinas,	)	TESTIMONY OF
LLC, for Adjustment of Rates and	)	SCOTT J. SAILLOR
Charges Applicable to Electric Utility	)	PUBLIC STAFF – NORTH
Service in North Carolina	)	CAROLINA UTILITIES
	)	COMMISSION

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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TESTIMONY OF SCOTT J. SAILLOR
ON BEHALF OF THE PUBLIC STAFF
NORTH CAROLINA UTILITIES COMMISSION

JANUARY 23, 2018

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

2 **PRESENT POSITION.**

3 A. My name is Scott J. Saillor. My business address is 430 North

4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am an

5 engineer with the Electric Division of the Public Staff – North Carolina

6 Utilities Commission.

7 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

8 A. My qualifications and duties are included in Appendix A.

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

10 A. The purpose of my testimony is to present to the Commission my

11 recommendations on customer growth.

1 **Q. PLEASE EXPLAIN THE CUSTOMER GROWTH ADJUSTMENT.**

2 A.   The customer growth adjustment adjusts per books revenues and

3   expenses by an amount which represents the growth in kilowatt-hour

4   (kWh) sales due to the change in the number of customers. The

5   revenue adjustment is calculated by multiplying the total kWh

6   adjustment by average customer class rates based on annualized

7   revenues divided by per book sales.

8 **Q. HOW DID THE COMPANY ADJUST FOR CUSTOMER GROWTH?**

9 A.   In its direct testimony, for the Residential, Lighting and

10   Miscellaneous rate classes, DEC used regression analysis to derive

11   equations that best fit historic billing data ending December 31, 2016.

12   The Company fit 12-, 24-, 36- and 48-month data to linear,

13   exponential, power, logarithmic, quadratic, cubic and quartic

14   equations. The equation with the highest adjusted r-square[1] value

15   was used to calculate the representative end-of-period (EOP) level

16   of customers for each rate class. The change in the number of

17   customers was determined by taking the difference between the

18   calculated EOP level of customers and the actual bills for each month

19   of the test period. The monthly average usage per customer for each

20   month of the test period was multiplied by the corresponding change

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[1] R-square measures the goodness of fit of the regression equations to the billing data.

1   in number of customers for each month of the test period, and the

2   results for each month were then summed to produce the total kWh

3   usage adjustment for each customer class.

4   For the Small General Service (SGS), Large General Service (LGS)

5   and Industrial customer classes, DEC applied a customer-by-

6   customer approach whereby individual accounts were evaluated to

7   identify customers that established new service or discontinued

8   service during the test period. DEC determined the average monthly

9   usage for each new customer using the months during the test period

10   when the customer was on the system, and then multiplied the

11   average usage by the number of months within the test period when

12   the customer was not on the system. These unrealized kWh sales

13   were added to the adjustment. The kWh usage consumed by lost

14   customers during the test period was removed from the adjustment.

15   The results of the Company's regression analysis and customer-by-

16   customer approach are shown in Exhibit SJS-1. The customer

17   growth adjustment proposed by DEC results in an increase to per

18   book sales of 133,348,621 kWh, as shown in Column (e) of Exhibit

19   SJS-1. This adjustment increases the Company's operating

20   revenues by $13,480,336.[2]

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[2] McManeus Exhibit No. 1, page 3, line 4, column 1. Adjustment "NC-0400" in Form E-1, Item 10, provides the details associated with the calculations.

1 **Q. DO YOU AGREE WITH DEC'S METHOD FOR DETERMINING THE**

2 **CUSTOMER GROWTH ADJUSTMENT?**

3 A. Yes, generally, except for the modifications I discuss below. This

4 method for calculating customer growth is consistent with the method

5 approved by the Commission for use in the Company's most recent

6 fuel case.

7 **Q. WHAT MODIFICATIONS DO YOU PROPOSE TO THE TEST**

8 **PERIOD CUSTOMER GROWTH ADJUSTMENT FILED BY DEC?**

9 A. During my review, I found the Company did not include a revenue

10 amount for Traffic Signal Service in its adjustment. By inserting the

11 annualized revenues for Traffic Signal Service into DEC's

12 calculations, operating revenues were increased from $13,480,336

13 to $13,489,131.

14 I also replaced the actual test period sales with weather-normalized

15 sales in DEC's calculations for the Residential customer growth

16 adjustment to correspond with the weather normalization adjustment

17 DEC made to the residential class. This increased sales by

18 1,492,905 kWh as shown in Column (e) of Exhibit SJS-2.

19 For the SGS, LGS and Industrial customer-by-customer approach,

20 DEC determined the average monthly usage for each new customer

1   using the months during the test period when the customer was on

2   the system, which could range from one to 11 months and include a

3   partial first month of service.   This calculation could distort the

4   unrealized kWh sales added to the test period by basing the average

5   on monthly usage that was not typical for the customer, such as

6   usage from a short initial month, usage during a ramp-up period, or

7   single-season usage for a customer with seasonal variation.

8   In response to a data request, DEC provided the Public Staff with

9   monthly billing data through November 2017 for each new customer

10   added during the test year. I used this monthly data to recalculate

11   the monthly average usage for the new customers by summing 12

12   months of billing data ending November 2017 and dividing by 12.

13   For customers added after November 30, 2016, I removed the initial

14   month of billing data and calculated the average using the remaining

15   months of data.   I believe this is a more precise representation of

16   the customer's typical monthly usage for use in the adjustment. This

17   resulted in an increased usage adjustment for SGS and LGS of

18   23,112,502 kWh, and for Industrial of 1,610,107 kWh, both of which

19   are shown in Column (e) of Exhibit SJS-2.

20   My net sales adjustment is 26,215,514 kWh, shown in the "Total" line

21   of Column (e) of Exhibit SJS-2.

1 **Q. DID YOU MAKE ANY FURTHER ADJUSTMENTS TO CUSTOMER**

2 **SALES?**

3 A. Yes. To account for changes in sales per customer, I calculated a

4 usage adjustment for the Residential rate class. The usage

5 adjustment was based on the difference in the weather-normalized

6 annual average usage per customer between the test year and the

7 year ended 2015. The difference was then multiplied by the EOP

8 level of customers. The total usage adjustment increased sales by

9 29,329,823 kWh, as shown in Column (f) of Exhibit SJS-2.

10 **Q. DO YOU HAVE ANY ADDITIONAL CHANGES TO THE**

11 **CUSTOMER GROWTH ADJUSTMENT?**

12 A. Yes. I extended the customer growth adjustment from the end of the

13 test period to the end of November 2017 (Extended Period) to

14 correspond with the Company's decision to update for plant additions

15 and related expenses beyond the test year through November 30,

16 2017.

17 **Q. PLEASE DESCRIBE THE EXTENDED PERIOD CUSTOMER**

18 **GROWTH ADJUSTMENT.**

19 A. In response to a data request, DEC provided the Public Staff with the

20 necessary customer data for the Extended Period to allow me to

21 perform the same regression analysis and customer-by-customer

1   approach described above.

2   Regression analysis was performed using historical billing data

3   ending November 30, 2017, to establish a new November 2017 EOP

4   level of customers. The kWh adjustment was then calculated by

5   multiplying the monthly per-customer usage for each month of the

6   test period by the difference between the November 2017 EOP level

7   of customers and the December 2016 EOP level.

8   DEC used the customer-by-customer approach to identify new and

9   lost SGS, LGS and Industrial customers from January 1, 2017, to

10   November 30, 2017. The unrealized kWh sales added to the test

11   period were calculated by determining the average monthly usage

12   for each new customer and multiplying by 12. For customers with

13   two or more months of billing data, I removed the initial month of

14   service from the usage calculation. This added 12 months of

15   unrealized sales to the test period for each new customer at the

16   average usage rate. The kWh usage consumed during the test

17   period for customers lost within the Extended Period was removed.

18   I also removed unrealized kWh sales for new accounts added during

19   the test year that were later closed during the Extended Period.

20   The Extended Period customer growth adjustment increases test-

21   period sales by 492,912,078 kWh, as shown in the "Total" line of

1   Column (e) of Exhibit SJS-3.

2   I also calculated a usage adjustment for the Extended Period based

3   on the usage for the Residential rate class for the 24-month period

4   ended November 2017. The adjustment was based on the difference

5   in the weather-normalized monthly average usage per customer

6   between the 12-month period ended November 2016 and the 12-

7   month period ended November 2017. To shift the usage adjustment

8   by one month to match up with the test period ended December

9   2016, one-twelfth of the difference between the corresponding

10   months of the 24-month period was subtracted from the monthly

11   differences. The average usage differences were summed and

12   multiplied by the November 2107 EOP level of customers. The total

13   usage adjustment decreased sales by 314,916,793 kWh, as shown

14   in Column (f) of Exhibit SJS-3.

15   When DEC's proposed adjustment, as well as the revised Traffic

16   Signal Service, Residential and new customer adjustments, are

17   combined with my usage adjustments, there is an overall kWh

18   adjustment of 366,889,242 kWh, for a total adjustment of

19   $34,236,969 instead of DEC's original adjustment of $13,480,336.

20   The revenue adjustments for customer growth and usage, shown in

21   Exhibits SJS-4 and SJS-5 respectively, were provided to Public Staff

22   witness Boswell for incorporation into her schedules.

1 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

2 A.   Yes, it does.

SCOTT J. SAILLOR

I graduated from North Carolina State University with a Bachelor of Science degree in Electrical Engineering. I was employed by the Communications Division of the Public Staff beginning in 1998, where I worked on issues associated with the quality of service offered by telephone and payphone service providers, arbitration proceedings, compliance reporting and certification filings. Since joining the Electric Division in 2011, my responsibilities have focused on the areas of demand side management and energy efficiency measures, renewable portfolio standards compliance, applications for resale of electric service and non-utility generating facilities, and revenue and customer growth analysis.

DEC's Customer Growth Adjustment

Rate Schedule (a)	Per Books kWh Sales (b)	Change in # of Bills[1] (c)	Dec 2016 EOP Level of Customers (d)	Customer Growth Adjustment (kWh) (e)	Adjusted Per Books kWh Sales (f)
Residential	21,292,252,754	121,281	1,680,030	130,715,151	21,422,967,905
SGS and LGS	22,623,391,895	(25,864)		(7,897,494)	22,615,494,401
T2	476,973,424	9,246	278,694	1,330,596	478,304,020
Miscellaneous	12,777,316	3,866	7,153	704,237	13,481,553
T	247,999,863	1,114	5,889	4,002,564	252,002,427
TS	10,468,482	395	5,953	58,750	10,527,232
Industrial	12,878,498,535	(122)		4,434,816	12,882,933,351
Total	57,542,362,269			133,348,621	57,675,710,890

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[1] For the SGS, LGS and Industrial customer classes, the change in the number of bills equals the number of bills added to the test period for new accounts minus the number of bills removed from the test period for closed accounts.

Customer Growth Adjustments to the Residential Rate Class and the New Customer Spreadsheets and Usage Adjustment

Rate Schedule (a)	Adjusted Per Books kWh Sales (b)	Change in # of Bills[1] (c)	Dec 2016 EOP Level of Customers (d)	Customer Growth Adjustment (kWh) (e)	Usage Adjustment (kWh) (f)	2nd Adjusted Per Books kWh Sales (g)
Residential	21,422,967,905	--	1,680,030	1,492,905	29,329,823	21,453,790,633
SGS and LGS	22,615,494,401	--		23,112,502		22,638,606,904
T2	478,304,020	--	278,694	-		478,304,020
Misc	13,481,553	--	7,153	-		13,481,553
T	252,002,427	--	5,889	-		252,002,427
TS	10,527,232	--	5,953	-		10,527,232
Industrial	12,882,933,351	--		1,610,107		12,884,543,458
Total	57,675,710,890			26,215,514	29,329,823	57,731,256,227

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[1] For the MGS and LGS customer classes, the change in the number of bills equals the number of bills added to the test period for new accounts minus the number of bills removed from the test period for closed accounts.

Customer Growth and Usage Adjustments through November 30, 2017

Rate Schedule (a)	2nd Adjusted Per Books kWh Sales (b)	Change in # of Bills[1] (c)	Nov 2017 EOP Level of Customers (d)	Customer Growth Adjustment (kWh) (e)	Usage Adjustment (kWh) (f)	Final Adjusted Per Books kWh Sales (g)
Residential	21,453,790,633	287,748	1,704,009	304,101,678	(314,916,793)	21,442,975,518
SGS and LGS	22,638,606,904	(15,635)		161,495,449		22,800,102,353
T2	478,304,020	(4,440)	278,324	(635,290)		477,668,730
Misc	13,481,553	4,452	7,524	699,706		14,181,259
T	252,002,427	2,088	6,063	7,445,634		259,448,061
TS	10,527,232	60	5,958	9,020		10,536,252
Industrial	12,884,543,458	36		19,795,881		12,904,339,339
Total	57,731,256,227			492,912,078	(314,916,793)	57,909,251,511

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[1] For the MGS and LGS customer classes, the change in the number of bills equals the number of bills added to the test period for new accounts minus the number of bills removed from the test period for closed accounts.

Calculation of Customer Growth Revenue Adjustment

Rate Schedule (a)	NC Retail KWH Adjustment (b)	Cents Per KWH[1] (c)	Revenue Adjustment[2] (d) = ((b) x (c) / 100,000)
Total NC Residential	436,309,734	9.81	$42,797
SGS and LGS	176,710,458	7.16	12,645
T2	695,306	18.35	128
Miscellaneous	1,403,943	17.52	246
Total NC General	178,809,707		13,019
T	11,448,198	14.76	1,690
TS	67,770	14.97	10
Total NC Street Lighting	11,515,968		1,700
Total NC Industrial	25,840,804	5.96	1,539
Total NC Retail	652,476,212		$59,055

[1] Average customer class rates are based on annualized revenues divided by per book sales.
[2] Dollars in thousands.

Calculation of Usage Revenue Adjustment

Rate Schedule (a)	NC Retail KWH Adjustment (b)	Cents Per KWH[1] (c)	Revenue Adjustment[2] (d) = ((b) x (c) / 100,000)
Total NC Residential	(285,586,970)	8.69	($24,818)
Total NC Retail	(285,586,970)		($24,818)

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[1] Average customer class rates are based on annualized revenues divided by per book sales. Annualized revenues for the usage adjustment do not include basic facilities charges.

[2] Dollars in thousands.