

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-35, SUB 51

In the Matter of  
Application of Western Carolina )  
University, for Adjustment of Rates )  
and Charges Applicable to Electric )  
Utility Service in North Carolina )

TESTIMONY OF  
EVAN D. LAWRENCE  
PUBLIC STAFF – NORTH  
CAROLINA UTILITIES  
COMMISSION

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ON BEHALF OF THE PUBLIC STAFF  
NORTH CAROLINA UTILITIES COMMISSION**

**AUGUST 20, 2020**

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

3 A. My name is Evan D. Lawrence. My business address is 430 North  
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am an  
5 Engineer with the Energy Division<sup>1</sup> of the Public Staff – North  
6 Carolina 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 the Public Staff's analysis  
11 and recommendations concerning:

12 1. Western Carolina University's (WCU) Cost of Service Study  
13 (COSS);

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<sup>1</sup> On August 1, 2020, the Public Staff merged the Electric Division and the Natural Gas Division to form the Public Staff Energy Division.

- 1           2.     Adjustments to the energy usage for the area lighting rate
- 2                     class;
- 3           3.     Adjustments to the load factor for the area lighting class;
- 4           4.     Adjustments to allocations for customer deposits;
- 5           5.     Adjustments to the allocation of billing and collection
- 6                     expenses;
- 7           6.     Adjustments to the allocation of total working capital; and
- 8           7.     WCU's transition to LED outdoor area lighting.

9           My recommendations are based on a review of the application and  
10           Form E-1 filed by WCU, the direct testimony and exhibits of  
11           Company witness O'Donnell, and WCU's responses to numerous  
12           data requests from the Public Staff.

13   **Q.     PLEASE     SUMMARIZE     YOUR     TESTIMONY     AND**  
14           **RECOMMENDATIONS.**

15   A.     I reviewed the testimony and exhibits of Company witness  
16           O'Donnell, along with Items 39, 42, and 45 of the Company's Form  
17           E-1 filing, various accounting adjustments, and other information  
18           provided in response to data requests, regarding the topics listed  
19           above.

1 More specifically, my testimony recommends the following:

- 2 1. That the per books usage for the area lighting rate  
3 class should be adjusted to 218,586 kWh for the test  
4 year;
- 5 2. That the load factor for the area lighting rate class  
6 should be 49.25% for the test year;
- 7 3. That customer deposits, and interest on customer  
8 deposits, should be directly assigned to the customer  
9 class that made the deposit;
- 10 4. That no billing and collection expenses should be  
11 allocated to the area lighting rate class; and
- 12 5. That total working capital should be allocated based on  
13 the cumulative monthly demand allocator.

14 **Cost of Service Study**

15 **Q. HAVE YOU REVIEWED THE COST OF SERVICE STUDY FILED**  
16 **IN THIS CASE?**

17 A. Yes, I have reviewed both the cost of service study (COSS) filed in  
18 the Company's original application, E-1, Item 45, on March 9, 2020,  
19 and an updated COSS provided to the Public Staff through  
20 discovery, which the Company used in developing the amendments  
21 filed on June 24, 2020.

1 **Q. IS THE COSS FILED IN THIS CASE SIMILAR TO THE COSS**  
2 **FILED IN THE COMPANY'S LAST RATE CASE, IN DOCKET E-35,**  
3 **SUB 45?**

4 A. Yes. The COSS filed in the current rate case is an updated version  
5 of the one filed and utilized in Docket No. E-35, Sub 45 (Sub 45).

6 **Q. DID YOU REVIEW THE COSS FILED IN THE SUB 45 DOCKET?**

7 A. Yes. While I was not part of the investigation that occurred in that  
8 case, I have reviewed the filings made in that docket, as well as  
9 supporting workpapers, to prepare for this case.

10 **Q. WHAT CHANGES DID WCU MAKE TO THE COSS FILED IN THIS**  
11 **CASE, RESULTING IN THE AMENDMENT CHANGES FILED ON**  
12 **JUNE 24, 2020?**

13 A. In the COSS filed in the Company's original application, several cost  
14 allocation factors were changed relative to the COSS filed in Sub 45.  
15 After the Public Staff inquired as to why the cost allocation factors  
16 had been modified, the Company provided the updated COSS. This  
17 update corrected errors in formulas, and modified allocation factors  
18 to bring them in line with the Sub 45 COSS.

19 **Q. CAN YOU SPEAK MORE ABOUT THE CHANGES MADE IN THE**  
20 **UPDATED COSS?**

21 A. Yes. In the updated COSS, multiple changes were made to the both  
22 the allocation factors, as well as to the underlying data used to

1 determine the allocations. First, the Company corrected an error to  
2 the customer allocation factor that uses area lighting customers.  
3 There are two customer allocation factors, one that includes lighting  
4 customers, and one that does not, which allocate costs based on the  
5 number of customers in each class. In the original filing, the number  
6 of lighting customers was set incorrectly for the class that should  
7 have included lighting customers. The Company corrected this input  
8 by setting it to 357.

9 The next change was to the “Electric Labor” category of expenses.  
10 Originally, these expenses were not allocated to lighting customers,  
11 as there are no separate lighting customers who do not have another  
12 account for electric service. However the updated COSS does  
13 allocate costs to lighting customers to reflect the fact that lighting  
14 does increase labor costs to the Company for installation,  
15 maintenance, and provision of other administrative services for  
16 customers who wish to have area lighting. The Company also  
17 updated the “Repairs and Maintenance” category for the same  
18 reason.

19 The “O&M – Billing & Collection” category was renamed “G&A –  
20 Billing and Collection”. The allocation factors themselves were not  
21 changed but the designation of these factors was altered.  
22 Additionally, the “PC & Printer Purchase” expense amount of  
23 \$17,864 was erroneously included and subsequently removed. I

1 recommend an adjustment to the allocation factors in this category,  
2 which I discuss later.

3 Next, the “Administration – Other” category was combined with the  
4 “Other O&M” category, and renamed “G&A – Administrative”. The  
5 single charge in the “Administration – Other” category for “Annual  
6 Consulting Contract” was moved to the “Misc. Contracted Service”.  
7 These costs were allocated using a combination of a customer  
8 allocator both with, and without, lighting customers. As discussed  
9 above, there was originally no difference between these two  
10 allocation factors. The update changed all of these costs to a  
11 customer allocator that correctly recognizes the impact of lighting  
12 customers.

13 **Q. DO YOU BELIEVE THE ORIGINAL COSS OR THE UPDATED**  
14 **COSS SHOULD BE USED FOR THE PURPOSES OF THIS CASE?**

15 A. The changes made by the Company to produce the updated COSS  
16 are appropriate, and a better reflection of the costs that each  
17 customer class imposes on the system; however, additional COSS  
18 updates are warranted.

19 **Q. WHAT ADDITIONAL ADJUSTMENTS DO YOU PROPOSE?**

20 A. I propose six additional adjustments: (1) an adjustment to the energy  
21 usage for the lighting class; (2) an adjustment to the load factor for  
22 the area lighting rate class (3) to directly assign the customer

1 deposits to the class that made them; (4) directly assign interest on  
2 customer deposits commensurate with the deposits themselves; (5)  
3 to change the cost allocation factor for the “G&A – Billing and  
4 Collection” cost category in the COSS; and (6) to change the cost  
5 allocation factor for the “Total Working Capital” category to the  
6 cumulative monthly demand allocator.

7 **Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE ENERGY**  
8 **USAGE OF THE LIGHTING CLASS.**

9 A. The kilowatt-hour (kWh) usage for the residential and commercial  
10 rate classes are measured at the billing meter. The energy used by  
11 the lighting class is not metered for billing purposes, and, therefore,  
12 must be estimated. In its original COSS, the Company estimated a  
13 per fixture usage of 70.1 kWh per month. The Company informed the  
14 Public Staff that this assumption is based off the operation of the  
15 Company’s 150 watt (W) high pressure sodium (HPS) fixture;  
16 however, I do not believe that usage level is representative of the  
17 HPS fixture, or the lighting class as a whole. Using publicly available  
18 data, I was able to determine that Cullowhee, North Carolina, where  
19 WCU is located, receives approximately 4,446 annual hours of day  
20 light and 4314 annual hours of night. The monthly usage of 70.1 kWh  
21 for a 150 w HPS fixture equates to approximately 5,608 hours of  
22 operation per year. The Company provided a report detailing the  
23 number and type of each lighting fixture in service at the time of the



1 report. This includes 154 HPS fixtures, 140 mercury vapor, and 74  
2 LED fixtures. As I discuss later in my testimony, WCU is only  
3 installing LED fixtures at this time. Assuming that all fixtures installed  
4 over the 357 fixtures used in the COSS for the test year was an LED  
5 fixture, then we can assume that there were 63 LED fixtures for the  
6 test year. Using these fixture counts, I have determined that the  
7 average wattage per fixture is 142 W. Using this average, and 4314  
8 operating hours, I calculate that each fixture should average 51.0  
9 kWh per month.

10 **Q. WHAT IS THE IMPACT OF THE ADJUSTMENT TO THE**  
11 **AVERAGE MONTHLY USAGE FOR THE AREA LIGHTING?**

12 A. In the Company's proposed COSS, the area lighting class has an  
13 estimated usage of 300,449 kWh for the test year. Adjusting the  
14 usage per fixture to 51.0 kWh results in a decrease of 81,863 kWh  
15 for the lighting class and a new estimated usage of 218,586 kWh for  
16 the test year.

17 **Q. PLEASE DISCUSS YOUR ADJUSTMENT TO THE LOAD**  
18 **FACTOR FOR THE AREA LIGHTING CLASS.**

19 A. Load factor is a ratio of the average load and the peak load over a  
20 time period. For lighting, the load can be assumed to be 100% while  
21 the fixture is operating. Since the only variability in the load depends  
22 on whether the fixture is on or off, the calculation simplifies to the

1 number of hours of operation divided by the number of hours in a  
2 time period. As discussed above, I believe the operating hours  
3 should be 4314 hours for the test year, which results in a load factor  
4 of 49.25%.

5 **Q. PLEASE DISCUSS YOUR PROPOSED ADJUSTMENTS TO**  
6 **CUSTOMER DEPOSITS.**

7 A. These adjustments are both related to customer deposits. The  
8 Company must track each customer that makes a deposit, and the  
9 amount made. As a result, the impacts associated with the customer  
10 deposits are easily attributable to the customer class that made the  
11 deposit. Therefore, I am recommending that the customer deposits  
12 be reassigned so that \$216,839 is attributed to the residential class,  
13 \$8,450 is attributed to the commercial class, and \$0 be attributed to  
14 area lighting. I am also recommending an adjustment to the interest  
15 on customer deposits. Likewise, the interest on customer deposits  
16 should be adjusted so that the residential class is assigned \$14,513,  
17 the commercial class is assigned \$1,339, and the area lighting  
18 assigned \$0.

19 **Q. WHAT CHANGES DO YOU PROPOSE TO THE ALLOCATION**  
20 **FACTORS FOR THE “G&A – BILLING & COLLECTION” COST**  
21 **CATEGORY?**

1 A. Currently, the allocation factor used for this cost category is based  
2 on the average number of customers, including lighting. The costs in  
3 this category, as the name suggests, are for expenses related to  
4 issuing customer bills, as well as bill collection. WCU does not serve  
5 any customers who receive a bill only for area lighting. There would  
6 be, at most, a negligible change to any of these expenses if WCU  
7 suddenly stopped offering area lighting. As such, this cost allocation  
8 should be based on the total number of customers, exclusive of  
9 lighting.

10 **Q. WHAT CHANGES DO YOU PROPOSE TO THE ALLOCATION**  
11 **FACTOR FOR THE “TOTAL WORKING CAPITAL” COST**  
12 **CATEGORY?**

13 A. The Company’s proposed COSS used the customer allocator  
14 without lighting to allocate these expenses. During discovery, the  
15 Company notified the Public Staff that it does not capitalize lighting.  
16 I have no problem with the Company choosing not to capitalize  
17 lighting specific expenses, however the area lighting class does  
18 contribute to other capital expenses not specific to the area lighting  
19 rate class. These costs are also more dependent on demand as  
20 opposed to the number of customers. Therefore, I am recommending  
21 the “Total Working Capital” category be allocated based on the  
22 cumulative monthly demand allocator.

1

**Area Lighting Transition to LED Fixtures**

2 **Q. DOES WCU CURRENTLY HAVE ANY PLANS TO TRANSITION**  
3 **ITS AREA LIGHTING TO LED FIXTURES?**

4 A. Yes. WCU stated through discovery that they are in the process of  
5 transitioning to LED area lighting.

6 **Q. PLEASE ADDRESS YOUR UNDERSTANDING OF THE PLAN IN**  
7 **PLACE FOR THIS TRANSITION?**

8 A. WCU has a single area lighting schedule in which customers do not  
9 have a choice of the light they receive. The small size and relatively  
10 few number of area lighting customers makes it difficult to cost  
11 effectively offer multiple area lighting fixture wattages and types. The  
12 Company is now offering only LED lighting to new customers.  
13 Additionally, when a lighting fixture fails the Company is replacing  
14 the fixture with an LED fixture. It is important to note that this  
15 transition will be gradual. Relying only on new installations and fixture  
16 failures for LED fixture installations will take many years because the  
17 expected service life of the non-LED fixtures is over 20 years, with  
18 some lasting up to 40 years.

19 **Q. DO YOU HAVE ANY CONCERNS WITH THE PLAN TO**  
20 **TRANSITION TO LED AREA LIGHTING?**

21 A. No. Given the size of WCU, and number of fixtures involved, I believe  
22 that this plan is satisfactory. A more aggressive plan would require

1           changing out lighting fixtures before the end of their useful life,  
2           unnecessarily raising costs for area lighting. In addition, this  
3           approach is also similar to how other utilities in the state are  
4           transitioning to LED area lighting.

5   **Q.    DOES THIS COMPLETE YOUR TESTIMONY?**

6   **A.    Yes.**

## **QUALIFICATIONS AND EXPERIENCE**

Evan D. Lawrence

I graduated from East Carolina University in Greenville, North Carolina in May of 2016 earning a Bachelor of Science degree in Engineering and a concentration in Electrical Engineering. I started my current position with the Public Staff in September of 2016. Since that time my duties and responsibilities have focused around the review of renewable energy projects, rate design, and renewable energy portfolio standards compliance. I have filed affidavits in Dominion Energy North Carolina's 2017 and 2018 REPS cost recovery proceeding, testimony in DEP's 2019 REPS cost recovery proceeding, an affidavit in DEC's 2019 REPS cost recovery proceeding, testimony in New River Light and Power's (NRLP) most recent rate case proceeding, and testimony in proceedings for applications for Certificates of Public Convenience and Necessity (CPCN) by merchant electric generating facilities (EMPs). Additionally, I am currently serving as co-chair of the National Association of State Utility and Consumer Advocates (NASUCA) DER and EE committee.