

1 IX. SCHEDULES & ATTACHMENTS:

- 2 A. Schedule REN-1 Ron Nelson Resume Summary
- 3 B. Schedule REN-2 Modified Attachment LU Response to OCA 3-5 GHT-  
4 Table 5
- 5 C. Schedule REN-3 Modified Attachment LU Response to OCA 3-1
- 6 D. Attachment REN-1 LU Response to OCA 3-5 GHT-Attach.3
- 7 E. Attachment REN-2 LU Response to OCA 5-23
- 8 F. Attachment REN-3 LU Response to OCA 7-55b.2
- 9 G. Attachment REN-4 LU Response to OCA 6-15

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## PROFESSIONAL BACKGROUND AND EDUCATION

### EDUCATION

- M.S. Agricultural and Resource Economics**  
Colorado State University, Fort Collins, CO, 2013
- Minor **Mathematics**  
Western Washington University, Bellingham, WA, 2011
- B.A. Environmental Economics**  
Western Washington University, Bellingham, WA, 2006

### EMPLOYMENT

- |                |   |
|----------------|---|
| 2018 - Present | Senior Manager, Strategen Consulting  |
| 2013 – 2017    | Utilities Economist, Antitrust and Utilities Division, Office of the Minnesota Attorney General |
| 2012 – 2013    | Consulting Economist, United States Geological Survey   |
| 2011 – 2013    | Economic Research Assistant, Colorado State University  |

### PREVIOUS TESTIMONY

<b>Company</b>	<b>Docket No.</b>	<b>Subject</b>
Oklahoma Gas and Electric	201800140	CCOSS and Rate Design
Public Service Company of Oklahoma	201800096	Rate Design and Performance-Based Regulation
Vectren Energy Delivery of Ohio	18-0298-GA-AIR	CCOSS and Rate Design
Commonwealth Edison	18-0753	Distributed Generation Rebates
Ameren Illinois Company	18-0537	Distributed Generation Rebates
Oklahoma Gas and Electric	201700496	CCOSS and Revenue Apportionment
Minnesota Power	E-002/GR-16-664	CCOSS, Rate Design, and the Utility Business Model
Otter Tail Power	E-002/GR-15-1033	Marginal and Embedded CCOSS and Rate Design
Xcel Energy	E-002/GR-15-826	CCOSS, Rate Design, and Performance-Based Regulation
Minnesota Energy Resources Corp.	G-011/GR-15-736	CCOSS and Rate Design
CenterPoint Energy	E-002/GR-15-424	CCOSS and Rate Design
Dakota Energy Association	E-002/GR-14-482	CCOSS and Rate Design
Xcel Energy	E-002/GR-13-868	CCOSS and Rate Design
Minnesota Energy Resources Corp.	G-011/GR-13-617	CCOSS
CenterPoint Energy	G-008/GR-13-316	CCOSS

Date Request Received: 07/15/19  
Request No. OCA 3-5

Liberty Utilities (Granite State Electric) Corp.  
d/b/a Liberty Utilities  
DOCKET NO. DE 19-064

Response: 07/15/2019  
Witness: Gregg Therrien

Billing Year	DOD2	D10	G01	G02	G03	T00	V00	Total Company Adjustment	Per kWh Adjustment
2015	\$53,919	\$8,168	(\$79,535)	(\$5,413)	\$92,027	\$28,286	\$1,922	\$99,374	\$ 0.000108
2016	\$10,855	(\$5,690)	(\$39,654)	(\$1,313)	\$211,250	(\$22,254)	\$3,395	\$156,589	\$ 0.000172
2017	(\$420,090)	(\$12,178)	(\$77,773)	(\$18,227)	\$122,229	(\$31,807)	\$3,275	(\$434,571)	\$ (0.000481)
2018	(\$484,645)	(\$10,152)	(\$101,752)	(\$38,209)	\$49,493	(\$30,574)	\$4,052	(\$611,788)	\$ (0.000687)
2019	\$47,784	(\$3,495)	(\$75,644)	(\$37,824)	\$75,291	(\$22,772)	\$3,858	(\$12,803)	\$ (0.000014)

**OCA Schedule REN-3  
Electric Vehicle Meter  
Computation of Revenue Requirement**

1	Total Investment	\$105	
2			
3	<b><u>Deferred Tax Calculation</u></b>		
4	Book Depreciation Rate	5.00%	
5	Federal Tax Depreciation Rate	3.75%	
6	FEDERAL Vintage Year Tax Depreciation:		
7	CY 2020 Spend	\$4	
8	Annual Tax Depreciation	\$4	
9	Cumulative Tax Depreciation	\$4	
10			
11	STATE Vintage Year Tax Depreciation:		
12	CY 2020 Spend	\$4	
13	Annual Tax Depreciation	\$4	
14	Cumulative Tax Depreciation	\$4	
15			
16	Book Depreciation	\$5	
17	Cumulative Book Depreciation	\$5	
18			
19	Book/Tax Timer (Federal)	(\$1)	
20	less: Deferred Tax Reserve (State)	(\$0)	
21	Net Book/Tax Timer (Federal)	(\$1)	
22	Effective Tax Rate (Federal)	21.00%	
23	Deferred Tax Reserve (Federal)	(\$0)	
24	Book/Tax Timer (State)	(\$1)	
25	Effective Tax Rate (State)	7.70%	
26	Deferred Tax Reserve (State)	(\$0)	
27	TOTAL Deferred Tax Reserve	(\$0)	
28			
29	<b><u>Rate Base Calculation</u></b>		
30	Plant In Service	\$105	
31	Accumulated Book Depreciation	(\$5)	
32	Deferred Tax Reserve	\$0	
33	Year End Rate Base	\$100	
34			
35	<b><u>Revenue Requirement Calculation</u></b>		
36	Year End Rate Base	\$100	
37	Pre-Tax ROR	9.78%	
38	Return and Taxes	\$10	
39	Book Depreciation	\$5	
40	Property Taxes	3.23% \$3	
41	Annual Revenue Requirement	\$18	
42			
43	Adjusted Annual Revenue Requirement	\$18	
44	Monthly Payment	\$ 1.52	
45			
46	<b><u>Imputed Capital Structure (e)</u></b>		
47		Ratio	Weighted
48	Long Term Debt	45.00%	Rate Pre Tax
49	Common Equity	55.00%	Rate Pre Tax
50		100.00%	7.86% 9.78%
51			

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

DE 19-064  
Distribution Service Rate Case

OCA Data Requests - Set 3

Date Request Received: 7/15/19  
Request No. OCA 3-5

Date of Response: 7/29/19  
Respondent: Gregg Therrien

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**REQUEST:**

Provide all schedules and workpapers associated with the Company's proposed revenue decoupling mechanism. Provide your answer in a live Excel spreadsheet with all links and formula intact.

**RESPONSE:**

Please see Attachment OCA 3-5.xlsx, which has all links and formulas intact and contains four tabs:

- 1) GHT-Attach. 2
- 2) GHT-Attach. 3
- 3) GHT – Table 4
- 4) GHT – Table 5

Date Request Received: 07/15/19  
Request No. OCA 3-5

Liberty Utilities (Granite State Electric) Corp.  
d/b/a Liberty Utilities  
DOCKET NO. DE 19-064

Response: 07/15/2019  
Witness: Gregg Therrien

<u>Ln.</u>		DOD2	D10	G01	G02	G03	T00	V00	
1	Size of Adjustment Per Customer in 2015	\$ 1.55	\$ 18.36	\$ (583.67)	\$ (6.20)	\$ 16.75	\$ 25.63	\$ 106.68	= (2014 RPC - 2013 RPC)
2	Size of Adjustment Per Customer in 2016	\$ 0.32	\$ (13.11)	\$ (295.10)	\$ (1.52)	\$ 40.40	\$ (21.20)	\$ 215.54	= (2015 RPC - 2013 RPC)
3	Size of Adjustment Per Customer in 2017	\$ (12.26)	\$ (27.67)	\$ (565.66)	\$ (20.57)	\$ 23.08	\$ (32.46)	\$ 215.79	= (2016 RPC - 2013 RPC)
4	Size of Adjustment Per Customer in 2018	\$ (14.09)	\$ (23.06)	\$ (736.31)	\$ (42.77)	\$ 9.31	\$ (31.68)	\$ 266.93	= (2017 RPC - 2013 RPC)
5	Size of Adjustment Per Customer in 2019	\$ 1.39	\$ (7.96)	\$ (543.55)	\$ (42.13)	\$ 14.11	\$ (23.89)	\$ 254.35	= (2018 RPC - 2013 RPC)
6									
7									
	<b>Billing Year</b>	<b>DOD2</b>	<b>D10</b>	<b>G01</b>	<b>G02</b>	<b>G03</b>	<b>T00</b>	<b>V00</b>	
8	2015	\$ 53,919	\$ 8,168	\$ (79,535)	\$ (5,413)	\$ 92,027	\$ 28,286	\$ 1,922	= Adjustment per Customer * 2014 Customers
9	2016	\$ 10,855	\$ (5,690)	\$ (39,654)	\$ (1,313)	\$ 211,250	\$ (22,254)	\$ 3,395	= Adjustment per Customer * 2015 Customers
10	2017	\$ (420,090)	\$ (12,178)	\$ (77,773)	\$ (18,227)	\$ 122,229	\$ (31,807)	\$ 3,275	= Adjustment per Customer * 2016 Customers
11	2018	\$ (484,645)	\$ (10,152)	\$ (101,752)	\$ (38,209)	\$ 49,493	\$ (30,574)	\$ 4,052	= Adjustment per Customer * 2017 Customers
12	2019	\$ 47,784	\$ (3,495)	\$ (75,644)	\$ (37,824)	\$ 75,291	\$ (22,772)	\$ 3,858	= Adjustment per Customer * 2018 Customers
13									
	<b>Total</b>								
	<b>Company</b>								
	<b>Billing Year</b>	<b>Adjustment</b>							
14	2015	\$ 99,374							= sum(Ln 8)
15	2016	\$ 156,589							= sum(Ln 9)
16	2017	\$ (434,571)							= sum(Ln 10)
17	2018	\$ (611,788)							= sum(Ln 11)
18	2019	\$ (12,803)							= sum(Ln 12)
19									
20									
	<b>per kWh</b>								
	<b>Billing Year</b>	<b>Adjustment</b>							
21	2015	\$ 0.0001080							= (Ln15) / 2014 Sales
22	2016	\$ 0.0001719							= (Ln16) / 2015 Sales
23	2017	\$ (0.0004814)							= (Ln17) / 2016 Sales
24	2018	\$ (0.0006865)							= (Ln18) / 2017 Sales
25	2019	\$ (0.0000140)							= (Ln19) / 2018 Sales
26									

## Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

DE 19-064  
Distribution Service Rate Case

## OCA Data Requests - Set 5

Date Request Received: 7/26/19  
Request No. OCA 5-23

Date of Response: 8/8/19  
Respondent: Melissa F. Bartos

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**REQUEST:**

Reference the Direct Testimony of Melissa M. Bartos, Bates Page 395, Lines 16-19, stating “While the marginal cost study filed in DE 16-383 used three year historical average costs for 11 out of 14 cost categories because the results of the regression analyses were not considered to be reasonable, in this marginal cost study regression analyses were used for all 14 cost categories, as described in more detail below.”

- a. Did the Company conduct any analysis that compared the two approaches for this case? If yes, please provide and summarize the analysis. If not, please explain why not.
- b. For the 11 cost categories that were determined using the three year historical average cost in the previous case and regression analysis in this case, please provide a comparison of the results between cases.

**RESPONSE:**

- a. No, the Company did not conduct any analysis that compared the two approaches for this case because the preferred approach to developing a marginal cost study is to use regression analysis. Since reasonable regression results were developed in this case, there was no need to compare those regression results with three-year historical average costs.
- b. Table 1 compares the three-year historical average cost used in DE 16-383 with the regression results used in this case for the 11 cost categories.

**Table 1**

	<i>Marginal Cost Categories</i>	This Case	Last Case (DOCKET DE 16-383)
		Regression Coefficient	3 Year Average (2013-2015)
	<b>Marginal Distribution Plant-Related Costs</b>		
1	Primary System	\$115,690 per MW	\$385,700 per MW
2	Secondary System	\$ 82,116 per MW	\$76,282 per MW
3	Line Transformers	\$ 84,022 per MW	\$68,983 per MW
	<b>Marginal Distribution Operations Expense</b>		
4	Primary System	\$ 35,927 per MW	\$ 9,152 per MW
5	Secondary System	\$ 3,410 per MW	\$ 3,555 per MW
6	Line Transformers	\$ 1,458 per MW	\$849 per MW
	<b>Marginal Distribution Maintenance Expense</b>		
7	Primary System	\$ 16,349 per MW	\$ 5,559 per MW
8	Secondary System	\$ 9,625 per MW	\$ 2,116 per MW
9	Line Transformers	\$ 2,846 per MW	\$999 per MW
10	<b>Marginal Distribution Operations and Maintenance Expense: Customer Related</b>	\$132.40 per customer	\$50.43 per customer
11	<b>Marginal Customer Accounts</b>	\$109.64 per customer	\$55.11 per customer

## Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

DE 19-064

Distribution Service Rate Case

OCA Data Requests - Set 7

Date Request Received: 9/26/19  
Request No. OCA 7-55

Date of Response: 10/10/19  
Respondent: Steven E. Mullen

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**REQUEST:**

Address the following regarding rate case expense included in the Company's filing:

- a. Provide the amount of rate case expense by Company witness and reconcile to the amount of expense included in the rate case (and show amounts by account number).
- b. Provide copies of contracts for all Company witnesses and explain if any contracts include retainer charges, explain if they are on a "not-to-exceed" basis, or if on an actual as incurred basis (without any limitation).
- c. Provide the billing rate for each consultant.
- d. Provide copies of RFPs issued by the Company in support of the witnesses, and explain how the specific witnesses were selected.
- e. Provide the amount of costs incurred to date for each witness, and identify the most recent billed months included in this billing.
- f. For each witness, provide a copy of the two largest invoices.

**RESPONSE:**

- a. Costs associated with internal Company witnesses are not charged to the rate case. Only incremental costs are included in rate case expenses, such as outside consultants, printing, court reports, legal notices, etc. Rate case costs will also include the costs of consultants hired by the Commission Staff and the Office of the Consumer Advocate that are billed to the Company, so those must be included in any assessment of rate case costs. An estimate of the overall rate case costs was provided in the initial rate case filing (see Bates II-136) although at that time the amount to be incurred for consultants hired by the Staff and the OCA was not known. Please see Attachment OCA 7-55.e for the rate case expense by witness.

Rate case expenses are deferred on the books until approval is received from the Commission to recover the costs through a surcharge, typically following an audit of the costs by the Commission's Audit Staff. There are no rate case costs included in the test year, so there is nothing to which to reconcile.

Docket No. DE 19-064 Request No. OCA 7-55

- b. Please see the following attachments for copies of the outside consultant contracts currently available to the Company, which are all on a not-to-exceed basis:
- Attachment OCA 7-55.b.1 – Alliance Consulting Group
  - Attachment OCA 7-55.b.2 – Concentric Energy Advisors
  - Attachment OCA 7-55.b.3 – FTI Consulting
  - Attachment OCA 7-55.b.4 – Blue Ridge Consulting (Staff)
  - Attachment OCA 7-55.b.5 – J. Randall Woolridge (Staff)
  - Attachment OCA 7-55.b.6 – The Brattle Group (Staff)
  - Attachment OCA 7-55.b.7 – Bion Ostrander (OCA)
- c. The billing rates for each consultant can be found in the contracts provided in part b. of this response.
- d. Please see Attachment OCA 7-55.d for a copy of the RFP(s). The witnesses were selected based on a combination of factors as described in section 11 of the RFP.
- e. Pursuant to Puc 1905.01, the Company is required to file updated totals of actual and estimated rate case expenses every 90 days following the initial rate case filing. The most recent of those filings was made on July 29, 2019, and can be found at: [https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-064/LETTERS-MEMOS-TARIFFS/19-064\\_2019-07-30\\_GSEC\\_RATE\\_CASE\\_EXPENSES.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-064/LETTERS-MEMOS-TARIFFS/19-064_2019-07-30_GSEC_RATE_CASE_EXPENSES.PDF).
- For an interim update of that filing, as of October 5, 2019, including all components of rate case expenses, please see Attachment OCA 7-55.e.
- f. Please see the following attachments for copies of the two largest invoices for those consultants who have submitted invoices to this point in the proceeding:
- Attachment OCA 7-55.f.1 – Alliance Consulting Group
  - Attachment OCA 7-55.f.2 – Concentric Energy Advisors
  - Attachment OCA 7-55.f.3 – FTI Consulting (one invoice)
  - Attachment OCA 7-55.f.4 – Blue Ridge Consulting (Staff)

additional distribution demand during peak conditions and (2) to additional customers. Marginal distribution capacity-related costs will be estimated on an overall basis and adjusted to each rate class based on class load characteristics from available system class load data. Marginal customer-related costs will be estimated by rate class. Concentric will classify Liberty Utilities' distribution capacity-related plant additions and expenses as being related to primary distribution, secondary distribution, or line transformers according to Liberty Utilities' practices.

Finally, given the results of Concentric's marginal distribution cost analyses, Concentric will adjust for losses and calculate the marginal cost to provide primary distribution, secondary distribution, and line transformers to each of the Company's major rate classes, as appropriate.

Concentric will convert marginal capital costs to annual capacity-related costs by applying levelized fixed charge factors that reflect ratemaking costs: Liberty Utilities' cost of capital, approved or proposed asset depreciation life, estimated property tax, and allowance for state and federal income and other applicable taxes.

We plan to use historical Company FERC Form 1 data that is readily available, if the data is consistent and produces meaningful and appropriate results.<sup>1</sup> Concentric will estimate Marginal Distribution Operating Costs from our analysis of the historical data. Based on our experience using regression analyses in marginal cost studies, Concentric understands the need to use creative and innovative approaches to deal with shifts in expense and plant data that relate to changes in company operations or record keeping practices. As described in another section of this proposal, Concentric has been responsible for many projects that require rigorous statistical analysis; we will use the experience that we have accumulated on these projects to develop accurate estimates<sup>2</sup> of the Company's marginal costs. Similar to the MCS Concentric developed for Granite State Electric's 2016 rate case, if the regression analysis does not produce reasonable results, Concentric will estimate marginal costs using alternative analyses of historical data.

The marginal costs derived in our analyses will be "loaded" costs reflecting the addition of Working Capital, Uncollectibles, and Administrative and General Expenses to Operating Costs. The results of Concentric's marginal distribution cost analyses will be provided in detail for the component pieces for each major class.

Consistent with the marginal cost study that Concentric developed for Granite State Electric's 2016 rate case, Concentric will prepare the following MCS schedules:

<sup>1</sup> For example, we will carefully examine expense and plant data around the time that Liberty Utilities acquired Granite State Electric from National Grid. If we identify significant shifts and discontinuities, we will develop appropriate approaches that will produce meaningful marginal cost estimates, just as Concentric did when we prepared the 2016 Granite State Electric marginal cost study.

<sup>2</sup> Concentric routinely tests for and corrects conditions that compromise the accuracy of regression analyses, including multicollinearity, heteroskedasticity, and autocorrelation.

## Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

DE 19-064  
Distribution Service Rate Case

## OCA Data Requests - Set 6

Date Request Received: 9/12/19  
Request No. OCA 6-15Date of Response: 9/25/19  
Respondent: Melissa F. Bartos**REQUEST:**

Reference OCA 5-23. Provide the three-year historical average costs, using 2016-2018 data, for the 14 cost categories. Where applicable, provide your response in a live Excel spreadsheet with all links and formula intact.

**RESPONSE:**

Table 1 below contains the 2016–2018 unit cost averages for 13 of the 14 cost categories. Unit cost averages cannot be calculated for A&G since there are two relevant units of service (O&M expense excluding A&G and Utility Plant) and there is no way to accurately determine what portion of the changes in A&G should be attributed to changes in each of the two relevant units of service.

**Table 1**

	<b>Cost Category</b>		<b>2016-2018 Per Unit Average</b>
1	Plant Additions	Primary	\$236,767 <i>per MW</i>
2	Plant Additions	Secondary	\$52,808 <i>per MW</i>
3	Plant Additions	Line Transformers	\$70,892 <i>per MW</i>
4	Operations	Primary	\$8,587 <i>per MW</i>
5	Operations	Secondary	\$3,000 <i>per MW</i>
6	Operations	Line Transformers	\$498 <i>per MW</i>
7	Maintenance	Primary	\$8,047 <i>per MW</i>
8	Maintenance	Secondary	\$3,052 <i>per MW</i>
9	Maintenance	Line Transformers	\$1,480 <i>per MW</i>
10	O&M	Customer	\$74.8 <i>per customer</i>
11	Customer Accounts Expense		\$54.9 <i>per customer</i>
12	A&G		NA NA
13	M&S		\$0.015 <i>per \$ of Utility Plant</i>
14	General Plant		\$0.087 <i>per \$ of Utility Plant (excl Gen Plant)</i>

Please also see Confidential Attachment OCA 6-15.xlsx, which links to Confidential Attachment OCA 1-2.2.xls, for the underlying data and the average unit cost calculations.

Confidential Attachment OCA 6-15.xlsx includes links to Confidential Attachment OCA 1-2.2.xlsx, which contains proprietary information of the Company's consultant, Concentric Energy Advisors that is "confidential, commercial, or financial information" protected from disclosure by RSA 91-A:5, IV. Specifically, Concentric has used the same methodology to prepare multiple marginal cost studies and has developed and refined these spreadsheet files over the past 12 years in support of those studies. Concentric's competitive position would be harmed if other firms had unrestricted access to these files. Therefore, pursuant to Puc 203.08(d), the Company has a good faith basis to seek confidential treatment of this information and will submit a motion seeking confidential treatment prior to the final hearing in this docket. Confidential Attachment OCA 6-15.xlsx is provided in electronic working spreadsheet (Microsoft Excel) format to OCA and Staff counsel. Redacted versions will not be provided.