



**STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

Docket No. DE 19-064

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Distribution Service Rate Case

DIRECT TESTIMONY

OF

DAVID A. HEINTZ

April 30, 2019

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ATTACHMENTS

Attachment	Title
DAH-1	Resume of David A. Heintz
DAH-2	Billing Monthly Billing Determinants, Normalized Base Revenues, Actual Base Revenues, Current Base Rates and Revenue Proof
DAH-3	Calculation of Permanent Class Revenue Targets and Rates
DAH-4	Rate M Outdoor Lighting Service Rate calculations and Impact per Fixture
DAH-5	Proposed Permanent Rates Annual Bill Impact Analysis
DAH-6	Current and Proposed Permanent Rates
DAH-7	Calculation of Proposed Step Adjustment Rates
DAH-8	Proposed Step Adjustment Annual Bill Impact Analysis
DAH-9	Monthly Residential Bill Impact Analysis, Permanent and Step

1 **I. INTRODUCTION AND BACKGROUND**

2 **Q. Mr. Heintz, please state your full name, business address, and position.**

3 A. My name is David A. Heintz. I am a Vice President with Concentric Energy Advisors,
4 293 Boston Post Road West, Suite 500, Marlborough, MA. My professional
5 qualifications and experience are provided in Attachment DAH-1.

6 **Q. Mr. Heintz, have you previously testified before the New Hampshire Public Utilities
7 Commission (“NHPUC” or the “Commission”)?**

8 A. No.

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to (a) explain the development of test year billing
11 determinants and base revenues for rate design, and (b) present and support the
12 calculations and analysis related to the Company’s proposed permanent and step
13 adjustment rates, including typical bill impact analyses.

14 **II. REVENUES**

15 **A. Test Year Revenue Proof**

16 **Q. Please explain the purpose of the test year distribution revenue proof?**

17 A. The purpose of the test year distribution revenue proof is to verify that the billing
18 determinants that I am using to design rates are accurate and suitable for use in
19 developing proposed rates and revenues in this proceeding. For this purpose, I have
20 prepared Attachment DAH-2, which shows (1) test year billing determinants, (2) test year

1 normalized revenues, (3) test year revenues calculated at the monthly effective rates, and
2 (4) the rates in effect during the test year.

3 **Q. Please describe the analysis of test year normalized revenues that you prepared.**

4 A. I prepared Attachment DAH-2 to show test year revenues calculated by applying the
5 Company's currently effective distribution rates¹ to the Company's test year billing
6 determinants. The Company's test year billing determinants are provided in Attachment
7 DAH-2, and the currently effective rates are provided in Attachment DAH-6.

8 **Q. Please describe the analysis that you prepared of test year revenues calculated at the**
9 **monthly effective rates.**

10 A. I prepared Attachment DAH-2 to show test year revenues calculated by applying (1) rates
11 that are the sum of the Company's distribution rates and the REP / VMP rates that were
12 in effect in each month of the test year, and (2) the Company's test year billing
13 determinants. The rates that were in effect in each month of the test year are provided in
14 Attachment DAH-2, pages 12 and 13. As shown on page 11 of Attachment DAH-2, the
15 calculated test year distribution revenues are \$51,681, or 0.128%, less than Company test
16 year distribution revenues. This \$51,681 difference between calculated distribution
17 revenues and the Company's distribution revenues is primarily caused by proration of the
18 base distribution rates that became effective June 1, 2018.²

¹ The Company's currently effective rates are included in the Company's tariffs, NHPUC No. 20 – ELECTRICITY DELIVERY LIBERTY UTILITIES.

² Specifically, the Company's June 2018, revenues reflect that customers' June bills were calculated by applying approved rates for May and June 1, 2018, on a prorated basis based on meter read dates. The distribution revenues shown in Attachment DAH-2, Pages 8-10 for June 2018 were calculated by applying the rates that became effective June 1 to customers' June 2018 bills.

1 **III. RATE DESIGN**

2 **A. Introduction**

3 **Q. Please describe the principles that were followed in designing the Company's**
4 **proposed rates.**

5 A. The proposed rates represent a balancing of the principles of appropriate rate design
6 which include efficiency, simplicity, continuity of rates, fairness between rate classes,
7 and corporate earnings stability.

8 **Q. Please explain your understanding of these principles.**

9 A. An efficient rate structure promotes economically justified use of the Company's sales
10 and distribution services and discourages wasteful use. As explained in the following
11 section of this testimony, the results of the Marginal Cost Study (Attachment MFB-10
12 included with the testimony of Melissa F. Bartos) were used to develop the rate design.

13 Rate design simplicity is achieved if customers understand the basis for the monthly bills
14 that they receive, especially the level of rates and the rate structure. Rate continuity
15 requires that changes to the rate structure should not be abrupt and unexpected; gradual
16 changes to the rate structure should allow customers time to modify their usage patterns.

17 A rate design is fair if no customer class pays more than the costs to serve that class. A
18 rate design provides for earnings stability if the Company has a reasonable opportunity to
19 earn its allowed rate of return during the time that the rates are in effect.

1 **B. Permanent Rates**

2 **1. Class Revenue Requirements**

3 **Q. What is the revenue requirement that was used to design the Company's proposed**
4 **permanent base rates?**

5 A. Base rates were designed to recover \$45,441,322. This amount is the sum of the
6 \$39,758,220 test year normalized revenues³ calculated in Attachment DAH-2 plus the
7 revenue deficiency of \$5,683,102 discussed in the testimony of Company witnesses
8 Philip Greene and David Simek.

9 **Q. How did you assign the total Base Revenue Requirement to each of the Company's**
10 **rate classes?**

11 A. Class revenue targets were based on the results of the marginal cost of service study
12 ("MCS") adjusting using the Equi-Proportional Method ("EPM") to recover the allowed
13 revenue requirements. As shown in Attachment MFB-10, the total delivery service
14 marginal cost is \$42,833,810⁴ Because the total delivery service marginal cost does not
15 equal the Company's revenue requirement, the delivery service marginal cost for each
16 rate class was adjusted on a pro-rata basis using the EPM. Because the EPM method
17 adjusts all marginal costs by a uniform percentage, the marginal cost-based price signals
18 are preserved. In this context, the marginal cost price signals include both the overall
19 level of the revenue target for each rate class, and the specific customer charges and

³ The test year normalized distribution revenue used for rate design purposes is different from value shown in RR-2, because the calculation of normalized distribution revenue excludes bill adjustments, cancel/re-bills, credits, and proration of distribution rates that became effective June 1, 2018.

⁴ Excluding the calculated Rate M Outdoor Lighting class marginal cost.

1 variable (per kWh and per kW) rates charged to the customers in each rate class. As
2 explained in the following section, the equi-proportionally-adjusted delivery service
3 marginal costs, by rate class, were further adjusted to reflect rate design considerations of
4 continuity of rates and fairness between rate classes.

5 **Q. Have you prepared a schedule that shows how you determined the base revenue**
6 **target and the proposed rates for each class?**

7 A. Yes. Attachment DAH-3 shows how the class base revenue targets were determined, and
8 the process that was used to determine the final proposed rates. Attachment DAH-3
9 consists of the following sections that were included to assist in the rate design process:

10 Section A shows proforma test year normalized revenue detail;

11 Section B shows billing determinant detail;

12 Section C shows the development of class revenue targets; and

13 Section D shows the development of proposed rates.

14 Columns A through I show the data and analysis by rate class and total Company.

15 **Q. Please explain how you determined class revenue targets.**

16 A. The following process was used to determine class revenue targets:

17 a. "Current" total class revenues were calculated;

18 b. "Proposed" total class marginal costs were calculated;

19 c. Class impacts were assessed by comparing Current revenues to Proposed

20 revenues, and a rate continuity cap was established to limit the amount of the

21 increase assigned to any one class;

1 d. Revenue shortfalls that resulted from the class impact cap were assigned to all
2 other classes; and

3 e. The final base revenue targets were determined, by class, including equi-
4 proportionally-adjusted class marginal costs, class impact caps, and assignments
5 of revenue shortfalls.

6 **Q. Please explain the steps (a) and (b) in determining the class base revenue target**
7 **process.**

8 A. Attachment DAH-3, Section C, shows total proforma rates by rate class at current rates.
9 Section C of Attachment DAH-3 also shows that total class targets were calculated by
10 applying an Equi-proportional Adjustment Factor (Attachment DAH-3, Line 44) to the
11 Total Class Delivery Service Marginal Costs, excluding Rate M (Attachment DAH-3,
12 Lines 35).

13 **Q. Please explain Step (c) in the class base revenue target process, which you have**
14 **described as testing class impacts by comparing current revenues to proposed**
15 **revenues.**

16 A. First, we calculated the difference by class between the proforma base revenues and the
17 proposed revenues resulting from steps (a) and (b); this difference is the “Total Potential
18 increase in Base Revenues” that is shown in Line 55 of Attachment DAH-3. We then
19 calculated the percent change, by class, that the Total Potential Increase represents,
20 relative to the current total class revenues that were calculated in Step (a). To maintain
21 rate continuity, the percent increase in base revenues was limited to 17.15 percent, which

1 is 120 percent of the total Company increase, 14.29 percent, which is shown I Column J,
2 Line 41 of Attachment DAH-3. We determined that 120 percent was a reasonable cap
3 that would promote efficiency by ensuring that the final rates to most classes would
4 represent the cost to serve that class, and that the limited level cost subsidization created
5 by the cap would not unduly distort rate efficiencies.

6 **Q. Please explain Step (d) in the process that you used to determine class base revenue**
7 **targets.**

8 A. As a result of the constraint that no class could receive an increase that exceeded 120
9 percent of the overall Company increase, the sum of the class revenue targets after Step
10 (c) was less than the delivery service revenue requirement by \$830,467 (Attachment
11 DAH-3, Line 64). This revenue shortfall was allocated to all classes that were below the
12 cap by apportioning the shortfall to each of these classes in proportion to their relative
13 contribution to total company test year revenues.

14 **Q. Please explain Step (e) in the class base revenue target process.**

15 A. As the final step, the final base revenue targets for each class were determined by
16 summing the class revenue requirements plus adjustments calculated in steps (a) through
17 (d).

18 **2. Rate Design for Permanent Rates**

19 **Q. Please explain how you designed the Company's proposed base rates.**

20 A. The following process was used to design the Company's proposed base rates:

- 1 a. The appropriate level of customer charges and demand charges (for Rates G-1 and
2 G-2) were determined based on standard rate design considerations; and
3 b. The various energy charges (per kWh) for all rate classes were determined based
4 on rate continuity, rate equity, and marginal cost considerations.

5 **Q. Please explain the first step in the rate design process, determining the appropriate**
6 **level of customer charges.**

7 A. To determine the appropriate level of customer charges for each class, we considered: (1)
8 the marginal customer costs resulting from the marginal cost study; (2) rate continuity;
9 (3) rate simplicity, and (4) customer impacts. Based on these considerations, we
10 increased the customer charges for Rate D, D-10, G-1, G-2, G-3, T and V by the
11 Company's proposed percentage increase in temporary rates, discussed in testimony of
12 Company witnesses Philip Greene and David Simek.

13 Attachment DAH-3, Line 84, demonstrates that the proposed customer charges for these
14 classes are still significantly less than the unit marginal customer costs. Although
15 Attachment DAH-3, Line 84, also indicates that the proposed Rate G-1 and G-2 class
16 customer charges exceed the marginal unit customer costs, the customer charges for these
17 rate classes were increased by the class proposed increase in temporary rates, based on
18 rate continuity considerations. Specifically, if we had not increased the customer charge
19 for these classes, large customers in these classes would experience disproportionately
20 large increases, relative to smaller customers.

1 **Q. How does the proposed customer charge rate design reflect the Company's**
2 **proposed revenue decoupling mechanism?**

3 A. The proposed rate design holds fixed charges flat after the temporary rate across-the-
4 board percentage increase. Although the MCS clearly indicates that current fixed
5 monthly rates are significantly below costs, the Company recognizes that a rate design
6 with volumetric rates may help send a price signal to conserve usage. This is a similar
7 approach to the EnergyNorth rate design that accompanied the approved decoupling
8 mechanism in that case.

9 **Q. What if the Commission denies or materially alters the proposed decoupling**
10 **mechanism?**

11 A. If that were to occur the Company would request the opportunity to propose an
12 alternative rate design that includes increases to the fixed monthly charges for each rate
13 class.

14 **Q. Please explain how you determined the appropriate level of demand charges.**

15 A. The rate structures for Rates G-1 and G-2 include the following demand-related charges:
16 (a) Demand charges for the maximum peak period kW demand, measured in accordance
17 with tariff terms and provisions; (b) High Voltage Delivery credit per kW where service
18 is metered at the Company's supply line voltage; (c) Optional Demand Surcharge, which
19 is calculated as 20% of monthly demand and energy charges; and (d) High Voltage
20 Metering Adjustment, which is a discount of 1% on monthly charges. The Rates G-1 and
21 G-2 demand charges and the High Voltage Delivery Credits were increased by the

1 proposed increase in permanent rates for that rate class, as shown on Line 101 of
2 Attachment DAH-3, based on rate continuity considerations.

3 **Q. Please explain how you determined the energy-related charges (per kWh) for all**
4 **rate classes.**

5 A. First, we determined the revenues to be recovered from the energy-related rates by
6 subtracting the customer charge revenues and the demand-related revenues at proposed
7 rates from each class's revenue target. These remaining revenues are shown on
8 Attachment DAH-3, Line 106.

9 **Q. Please continue your discussion of how you determined energy-related charges.**

10 A. The percentage increase in energy-related rates, by class, is calculated on Line 129, and
11 the proposed energy-related rates are calculated by applying the percent change to each
12 of the current energy-related rates. The proposed rates are shown on Lines 131 through
13 136.

14 **Q. Please identify where the final proposed rates are shown.**

15 A. The proposed customer charges are provided on Attachment DAH-3, Line 83. The
16 proposed demand charges are shown on Attachment DAH-3, Lines 100-103. The
17 proposed energy-related charges are shown on Attachment DAH-3, Lines 131 - 136. The
18 proposed Rate M charges per luminaire and pole are provided in Attachment DAH-4.

1 **3. Revenue Proof for Proposed Permanent Rates**

2 **Q. Has the Company prepared a proof of the revenues that the proposed rates**
3 **produce?**

4 A. Yes, we have calculated the revenues that the proposed rates would produce on Test Year
5 proforma Billing Determinants. The calculations, which are presented in Attachment
6 DAH-3, Lines 137 to 156, show that the proposed base rates produce revenues of
7 \$45,441,952, which is within \$630⁵ of the revenue requirement of \$45,441,322.

8 **4. Bill Impact Analysis for Proposed Permanent Rates**

9 **Q. Have you prepared Bill Impact analyses?**

10 A. Yes, we have prepared Attachment DAH-5 to show annual bill impact analyses by class
11 for an appropriate range of annual usage levels. These analyses demonstrate the
12 combined impact of the changes that are being proposed in this proceeding.

13 **Q. Please explain the bill impact calculations in more detail.**

14 A. For each rate class, we calculated monthly bills at current rates, which are shown in
15 Attachment DAH-6, and at proposed rates. For all rate classes except Rate D, we used 12
16 months of monthly data for each customer to calculate annual bills. For Rate D, we
17 calculated average customer billing determinants for twenty groups of customers; the
18 groups were determined by annual energy consumption, and the annual energy limits for
19 each group were determined so that each group would have an equal number of
20 customers. To calculate the bills at current rates, we used: (a) the current effective base

⁵ \$ variance due to rounding.

1 rates on June 1, 2018; (b) the current energy service rate; and (c) the current cost tracking
2 mechanism rates, all as of April 1, 2019.⁶ To calculate monthly bills at proposed rates,
3 we used (a) the proposed base rates, (b) the current energy service rate, and (c) the
4 current cost tracking mechanism rates.

5 **5. Step Adjustment Rates**

6 **Q. Have you also prepared rates and bill impact analyses related to the Company's**
7 **proposed Step Adjustment for 2019 capital investments?**

8 A. Yes, we have. The calculation of the step adjustment revenue requirement is found in
9 Attachment RR-Step of Messrs. Greene and Simek's permanent rates testimony. Rate
10 design for the step adjustment associated with 2019 capital investments was achieved by
11 applying an equal percentage increase to all rates and charges resulting from the
12 permanent rate design. The step adjustment rate design calculations are provided in
13 Attachment DAH-7, and the bill impact analyses are provided in Attachment DAH-8.

14 **Q. In addition to the annual bill impact, have you also prepared a monthly bill impact**
15 **analysis for average residential usage?**

16 A. Yes, we have. Attachment DAH-9 shows a comparison of a 650 kWh monthly
17 residential bill with distribution rates in effect in June 2018 to the permanent rates being
18 proposed. It also shows an analysis comparing the average residential monthly bill under
19 the proposed permanent rate level and the monthly bill under the permanent rate level
20 plus the step increase. Finally, it shows a comparison of the average monthly bill under

⁶ These cost tracking mechanisms include the following: Transmission Charge, Stranded Cost Charge, System Benefits Charge, and the Electricity Consumption Tax.

1 the distribution rate level in effect in June 2018 to the monthly bill including both the
2 permanent and step increases. The bill impacts are summarized in the Table 1 below.

Table 1

Total Bill Impact – Residential Customer (650 kWh)			
Current Rates	Permanent Rates	Step Increase Rates	
\$123.59	\$131.34	\$133.97	
		\$	%
		<u>Increase</u>	<u>Increase</u>
	Permanent vs. Current	\$7.75	6.27%
	Step Increase vs. Permanent	\$2.63	2.00%
	Step Increase vs. Current	\$10.38	8.40%

4

5 **Q. Does this conclude your testimony?**

6 **A. Yes.**

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