

UNITIL ENERGY SYSTEMS, INC.

AMENDED JOINT TESTIMONY OF:

KAREN M. ASBURY

JUSTIN C. EISFELLER

ROBERT S. FURINO

New Hampshire Public Utilities Commission

Docket No.: DE 11-105

September 30, 2011

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Schedule UES-1: Customer Billing Detail

Schedule UES-2: Refund Summary and Impacts

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1 **I. INTRODUCTION OF PANEL**

2 **Q. Please state your name and business address.**

3 A. My name is Karen M. Asbury. My business address is 6 Liberty Lane West,  
4 Hampton, New Hampshire 03842.

5

6 **Q. By whom are you employed and in what capacity?**

7 A. I am Director of Regulatory Services for Unitil Service Corp. ("USC"), which  
8 provides centralized management and administrative services to all Unitil  
9 affiliates, including Unitil Energy Systems, Inc. ("UES").

10

11 **Q. Please describe your business and educational background.**

12 A. In 1987, I graduated *magna cum laude* from the University of New Hampshire  
13 with a Bachelor of Science Degree in Mathematics. I joined USC in January  
14 1988 and have held various positions in the regulatory/rate department. I have  
15 been involved in regulatory compliance and rate analysis for electric and gas  
16 utilities for over twenty years. In my current position, I am responsible for  
17 directing regulatory filings, pricing research, analysis, and design, tariff  
18 administration, revenue requirements and cost of service calculations,  
19 customer research, and other analytical services.

20

21 **Q. Have you previously testified before the New Hampshire Public Utilities**  
22 **Commission ("Commission")?**

1 A. Yes. I have testified on numerous occasions before the Commission. I have  
2 also testified before the Massachusetts Department of Public Utilities and  
3 participated in the preparation of filings for the Federal Energy Regulatory  
4 Commission ("FERC").

5

6 **Q. Please state your name and business affiliation.**

7 A. My name is Justin C. Eisfeller and I am the Director of Energy Measurement  
8 and Control at USC. As Director of Energy Measurement and Control  
9 ("EM&C") I am responsible for daily operations of the metering, substation,  
10 and gas and electric dispatching areas. These responsibilities have involved  
11 shaping the company's direction in areas of advanced metering applications  
12 and regulatory actions due to EPACT and distributed generation. My business  
13 address is 325 West Road, in Portsmouth, NH.

14

15 **Q. Please summarize your qualifications and current position with USC.**

16 A. I received my Bachelor of Science Degree in Electrical Engineering (Power  
17 Option) from Northeastern University in 1990 and my Master of Business  
18 Administration from UNH in 2005. I have also been a Registered  
19 Professional Engineer in the State of New Hampshire (License No. 9066)  
20 since 1996. I joined USC in 2002 as Manager of Distribution Engineering  
21 with responsibility for distribution system design and support. In 2004, I  
22 assumed the responsibilities of Director of Engineering with responsibilities

1 for distribution engineering, planning, transmission and substation  
2 engineering, system protection and control, computer aided design, and  
3 geographic information systems. In 2008 I assumed responsibilities for my  
4 current position. The functions of the Director, EM&C include responsibility  
5 for the installation, operation, and maintenance of equipment necessary to  
6 provide for metering, dispatching and substation systems as well as equipment  
7 and systems necessary for the implementation of new energy technology, the  
8 digitization and automation of the electric system, equipment  
9 communications, system performance data gathering, demand response, and  
10 the enabling of other displacement energy technologies.

11  
12 **Q. Have you previously testified before the Commission?**

13 A. Yes. I have testified on several occasions before the Commission. I have also  
14 testified before the Massachusetts Department of Public Utilities.

15  
16 **Q. Please state your name and business address.**

17 A. My name is Robert S. Furino. My business address is 6 Liberty Lane West,  
18 Hampton, NH.

19  
20 **Q. By whom are you employed and in what capacity?**

21 A. I am employed by USC as Director of the Energy Contracts department.

22  
23 **Q. Please briefly describe your educational and business experience.**

1 A. I received my Bachelor of Arts Degree in Economics from the University of  
2 Maine in 1991. I joined USC in March 1994 as an Associate DSM Analyst in  
3 the Regulatory Services Department and have worked in the Regulatory,  
4 Product Development, Finance and Energy Contracts Departments. Currently,  
5 my primary responsibilities involve energy supply planning and acquisition,  
6 including the procurement of electric Default Service for UES and its affiliate  
7 Fitchburg Gas and Electric Light Company (Fitchburg), and natural gas  
8 supply for both Fitchburg and for Northern Utilities, Inc.

9

10 **Q. Have you previously testified before the Commission?**

11 A. Yes. I have testified before the Commission on many occasions.

12

13 **II. PURPOSE OF TESTIMONY**

14 **Q. Please describe the purpose of this joint testimony in this proceeding?**

15 A. The purpose of this testimony is to: present and explain the nature of a large  
16 overbilling error that occurred with respect to a customer of UES, the  
17 Riverwoods at Exeter ("Riverwoods"); to describe UES's calculation of the  
18 refund provided to the customer; and to describe and support the request for  
19 approval to adjust the account balances in the External Delivery Charge  
20 ("EDC"), the Stranded Cost Charge ("SCC"), the System Benefits Charge  
21 ("SBC") and the Non-G1 Default Service Charge. Adjusting these account

1 balances would allow UES to recover from its customers the amount by which  
2 they benefited as the result of the above-referenced overbilling.

3

4 **III. BACKGROUND**

5 **Q. Please describe the nature of the billing error and how it was discovered.**

6 A. During November and December 2010, USC's Business Development  
7 department had been working with the customer to identify ways of reducing  
8 the energy consumption at the customer's three facilities. One facility in  
9 particular had a higher consumption than the other two facilities. Through the  
10 monitoring of the sub-panels at the facility, the Company was able to identify  
11 a potential of a billing inaccuracy at this location.

12

13 Several visits to the customer site were made to first verify the meter was  
14 working correctly, then several sets of measurements were taken of the  
15 metering transformers to verify their function. On Monday, February 7, 2011  
16 metering personnel confirmed that the meter and current transformers ("CT")  
17 were found to be working correctly. However, the metering personnel  
18 discovered that the CTs were mislabeled. As the result of the mislabeled CTs,  
19 billing was double the actual usage.

20

21 **Q. How long had this customer been inaccurately billed?**

1 A. Billing has been incorrect for this location since September 10, 2004, the date  
2 of the initial installation of the mislabeled CTs and the initiation of the  
3 customer's account for this location. The meter constant was programmed at  
4 the time the meter was set in accordance with the (mis)labeling on the  
5 installed CTs. Since the labeling was incorrect, billing has been incorrect  
6 since the initial installation.

7

8 **Q. What are CTs and why are they needed for this installation?**

9 A. In order to meter large customer loads, utilities must install instruments that  
10 transform the large currents into quantities measurable by the meters. This  
11 device is called a current transformer or CT. One CT is installed for each  
12 phase of the electric service. These devices are installed around the service  
13 wires and have output leads that are connected to the meter. The output of the  
14 CTs are a ratio of the actual load. The meter uses this reduced current output  
15 to measure energy usage. In order to determine billable usage, the metered  
16 values are multiplied by this ratio (or meter constant) to calculate the actual  
17 energy consumption.

18

19 **Q. Please explain how the installation of a CT can lead to a billing error?**

20 A. If the meter constant is incorrect, the billing system will calculate usage that is  
21 different from actual consumption.

22

1 At this particular customer site, UES installed dual ratio CTs, which provided  
2 for either a 3000:5 ratio or a 1500:5 ratio. The ratio is selected by changing  
3 the connections for the output wiring based on which of two labeled taps are  
4 chosen. The output wiring at this site was connected to the tap labeled  
5 “3000:5” resulting in a meter constant of 600. Since the CT was mislabeled it  
6 was actually transforming at a ratio of 1500:5 or a meter constant of 300.  
7 Because the metered values were multiplied by the incorrect constant, the  
8 customer’s bill was based on double the amount of the customer’s actual  
9 usage.

10  
11 **Q. Does UES test meters upon installation or periodically to ensure accurate**  
12 **readings?**

13 A. UES regularly tests its meters in accordance with the requirements of the Puc  
14 300 rules. All meters are either tested at the factory or in UES’s facilities,  
15 consistent with Puc Rule 305. The meter at this location had been tested and  
16 found to be accurate on a number of occasions during the period in question.

17  
18 UES performs connection verification tests of installations as required by Puc  
19 Rule 305.01(g). UES relies on the manufacturer’s specifications and test  
20 results of the CT ratio. All polyphase transformer meters are tested every four  
21 years following the initial installation, which complies with Puc Rule  
22 305.03(c)(4).

1

2

Periodic inspections and testing of instrumented sites include an inspection of the CT, but does not require actual ratio measurement, as these devices are static, contain no moving parts, and are basically a coil of wire with a specific set of unchanging characteristics. Additionally, these devices may be difficult to physically access, require special equipment or line crew assistance to measure, and field measurements can sometimes be misleading (verifying with instantaneous checks can provide erroneous results during rapid load changes).

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7

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10

11 **Q. When were the CT and the meter initially installed at this location?**

12

A. The CT and meter were initially installed on September 10, 2004. As required, the meter was tested prior to installation. UES relied on the CT manufacturer's test of accuracy and performed the installation according to the labeling on the CT.

13

14

15

16

17 **Q. Was the meter ever changed at this location during the period in**  
18 **question?**

19

A. Yes. The meter was changed on January 4, 2007, as part of the company's deployment of its Automated Metering Infrastructure ("AMI") project. This change occurred one year prior to the scheduled four year cycle for testing and verification. Subsequently, on March 11, 2008, the meter was changed again,

20

21

22

1 in response to the customers request to install KYZ pulse output metering. On  
2 both of these occasions the new meter was tested prior to installation, but the  
3 setting of the CT, which had been based upon the manufacturer's  
4 specifications, was not changed.

5

6 **Q. Were subsequent meter tests performed?**

7 A. Yes. In early November 2010, the customer contacted the Company,  
8 concerned that usage at this one location was running twice as high as at its  
9 two other locations, and requested that UES test the meter. The meter was  
10 tested and its accuracy verified. In January 2011, the Company's meter  
11 department checked the pulse weight and pulse multiplier calculations. The  
12 meter department also inspected the meter and CT configuration and  
13 confirmed that the CT wiring was in fact on the 3000:5 terminals. Finally, in  
14 early February 2011, the results of a subpanel metering report, which was  
15 undertaken as part of an energy audit, indicated that this location was  
16 consuming only half of what the meter was reporting. It was at this point that  
17 it was determined that the CTs were marked incorrectly. Special equipment  
18 was brought in to the site, and the CT ratios were measured and confirmed to  
19 be 1500:5, not 3000:5.

20

21 **Q. Once the mislabeling of the CT was discovered, what steps were taken?**

1 A. On February 8, 2011 UES changed the billing multiplier in the billing system  
2 for this meter from 600 to 300. UES also performed a full meter test,  
3 including tests of all CTs at the customer's other facilities to ensure that no  
4 other issues existed.

5

6 **Q. What steps is UES taking to prevent a future occurrence of this error at**  
7 **other similarly instrumented sites?**

8 A. UES has completed a full review of all dual ratio CT installations at its larger  
9 accounts. No locations were found with dual ratio CT's of the type used at  
10 Riverwoods, nor did we find any issues with mislabeling. In addition, visual  
11 inspection and testing of *all* instrumented installations (any installations with  
12 CT's or "potential transformers (PT's), whether or not they are larger  
13 installations that "could be" dual ratio), was undertaken by the Company. To  
14 date, this review is about half-way through the entire population of 910  
15 instrumented locations. As mentioned previously, the procedures for initial  
16 installation and periodic testing have been revised to include testing beyond  
17 the manufacture's test results as relied on previously.

18

19 **IV. CALCULATION OF OVERPAYMENT, REFUND AMOUNT AND**  
20 **PROPOSED ACCOUNT ADJUSTMENTS**

21 **Q. Please describe how the overpayment was calculated.**

1 A. UES has prepared a detailed spreadsheet with the customer's billing history  
2 from September 2004 through January 2011, the time period over which the  
3 billing error occurred. The customer was on Default Service for the period  
4 September 2004 through July 2006. Thereafter, the customer was served by a  
5 third-party supplier, so UES obtained the customer's energy billings from  
6 their third-party supplier for the period August 2006 through January 2011.  
7 All of this information is included in the calculations that appear in the  
8 spreadsheet which is provided as Schedule UES-1. The monthly billing detail  
9 is shown in columns 1 through 12.

10  
11 **Q. What is total amount over-collected from the customer?**

12 A. As shown in column 8, page 2 of 2 of Schedule UES-1, the customer paid  
13 total charges of \$3,613,338 over the period September 2004 through January  
14 2011. The total over-collected amount, which is half of all charges, excluding  
15 customer charges, is \$1,801,504. As shown in columns 13, 14, and 15, the  
16 breakdown of the over-collection is as follows:

17	Distribution Charge:	\$185,663
18	Other Delivery Charges:	\$299,751
19	Supply Charges:	\$1,316,090

20  
21 **Q. Please provide more detail concerning the over-collected amount for**  
22 **Other Delivery Charges.**

1 A. The amount related to Other Delivery Charges is further broken down as  
2 follows:

3	Restructuring Surcharge:	\$592
4	Rate Case Surcharge:	\$4,696
5	System Benefits Charge - Energy Efficiency ("SBC EE"):	\$23,253
6	System Benefits Charge -	
7	Low Income-Electric Assistance Program ("SBC LI"):	\$18,001
8	Stranded Cost Charge:	\$103,558
9	Fuel Purchased Power Adjustment Charge ("FPPAC")	
10	Underrecovery:	\$4,380
11	External Delivery Charge:	\$137,970
12	Subtotal Delivery Charges:	\$292,450
13	Consumption Tax:	\$7,301
14	Total including Consumption Tax:	\$299,751 <sup>1</sup>

15

16 **Q. Has UES provided a refund to the customer?**

17 A. UES initially provided a refund of \$611,699 to the customer concurrent with  
18 the filing of its initial Petition in this docket on May 13, 2011. Subsequently,  
19 on August 30, 2011, upon reaching a settlement agreement with Riverwoods,  
20 UES provided an additional refund of \$1,459,721, for a total refund of  
21 \$2,071,420 (\$1,801,504 plus interest charges of \$269,916). The amount  
22 refunded includes \$213,480 (\$185,663 plus interest of \$27,817) of distribution  
23 charge over-collection, \$1,513,277 (\$1,316,090 plus interest of \$197,187) of  
24 supply charges, and \$344,662 (\$299,751 plus interest of \$44,911) of other  
25 delivery charges.

26

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<sup>1</sup> Page 3 of Schedule UES-1 provides the monthly detail for this amount.

1 **Q. Please explain why the Company is requesting authorization to adjust its**  
2 **account balances for the period of time for which reparations are made to**  
3 **the customer.**

4 A. Due to the reconciling nature of the delivery costs, all customers benefitted  
5 from this customer's overpayment, since the overpayment was reflected in the  
6 delivery charge account balances, thus lowering the amounts due from all  
7 customers. In the case of the SBC, which is a fixed rate, the overpayment  
8 increased the amount of funds available for EE and LI programs. In the case  
9 of the supply related overpayment, as explained below, UES's Non-G1  
10 customers benefitted as they received power that they didn't pay for.  
11 Accordingly, UES seeks recovery of the delivery charge refund and the  
12 portion of the supply charge refund above through the normal operation of its  
13 reconciling clauses.<sup>2</sup>

14

15 **Q. Please more fully describe UES's request to adjust its delivery charge**  
16 **reconciling mechanisms to recognize the refund.**

17 A. UES seeks to make an accounting entry that removes the overpayment from  
18 revenue in the External Delivery Charge ("EDC") and Stranded Cost Charge  
19 ("SCC"). The end result would be decreases to EDC revenue of \$158,642  
20 (\$137,970 plus interest of \$20,672) and SCC revenue of \$119,073 (\$103,558

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<sup>2</sup> The consumption tax amount remitted to the State of New Hampshire would be lowered when the refund is made.

1 plus interest of \$15,516). UES also proposes to decrease SBC EE revenue of  
2 \$26,737 (\$23,253 plus interest of \$3,484) and SBC LI revenue of \$18,001,  
3 reflecting the refund of the SBC amounts. Finally, UES proposes to decrease  
4 EDC revenue by: \$681 (\$592 plus interest of \$89) for the Restructuring  
5 Surcharge; \$4,696 for the Rate Case Surcharge; and \$5,036 (\$4,380 plus  
6 interest of \$656) for the FPPAC Underrecovery.<sup>3</sup>

7

8 **Q. When would UES's EDC and SCC rates include these adjustments?**

9 A. If approved, the adjustments to the EDC and SCC would be reflected in  
10 UES's next annual EDC/SCC rate filing scheduled for June 2012 for rates  
11 effective August 1, 2012. The net impact of the adjustments to the EDC and  
12 SCC would be approximately \$0.00024 per kWh or \$0.14 for a residential  
13 customer using 600 kWh per month.

14

15 **Q. Please describe the impact of the proposal on the SBC EE and SBC LI**  
16 **accounts.**

17 A. As the SBC is a fixed rate, the proposed SBC EE and SBC LI adjustments will  
18 have no rate impact on customers, but rather will affect the account balances  
19 for these programs. In the case of SBC LI, the adjustment would lower the

---

<sup>3</sup> As the Restructuring Surcharge, Rate Case Surcharge and FPPAC Underrecovery surcharge no longer exist, UES proposes to adjust the EDC for these amounts.

1 amount to be remitted to the State of New Hampshire in the month that the  
2 adjustment was made.<sup>4</sup>

3

4 **Q. Please describe UES's proposal with respect to supply charges.**

5 A. With respect to the supply charge overcharges, UES seeks to make an  
6 accounting entry in the amount of \$1,325,169 (\$1,152,493 plus interest of  
7 \$172,676) that increases costs in the Non-G1 Default Service Charge. This  
8 amount is less than the full supply charge refund amount, reflecting what the  
9 Non-G1 Default Service supply charges would have been if the error had not  
10 occurred. This calculation was performed by pricing out the overbilled kWh  
11 sales by the Non-G1 Default Service rates in effect at the time. This  
12 calculation results in lower supply charges to the Non-G1 class.

13

14 **Q. Why is UES proposing to charge the Non-G1 Default Service Charge by**  
15 **an amount less than it is proposing to refund to the customer for the**  
16 **supply charge portion of the over-collection?**

17 A. The reason for adjusting Non-G1 Default Service for the supply charge refund  
18 as described above is because the error shifted costs from Non-G1 Default  
19 Service to the customer. UES utilizes a load allocation process in order to  
20 assign load obligations associated with customer consumption to the

---

<sup>4</sup> UES's SBC LI revenues are generally higher than LI-EAP costs, resulting in a monthly remittance to the State of New Hampshire.

1 numerous suppliers on its system. These load obligations are reported to ISO  
2 New England for the proper assessment of wholesale cost. As part of the load  
3 allocation process, UES must either use actual meter readings or estimate  
4 usage for all customers on an hourly basis. For load allocation purposes, there  
5 are two types of customers: those with interval meters, which provide hourly  
6 reads, and those with standard meters, which provide monthly reads. Under  
7 UES's tariff, G1 customers such as this customer receive interval metering  
8 and Non-G1 customers receive monthly metering.

9  
10 For each hour, UES must match the sum of all customer loads, adjusted for  
11 distribution losses, to the tie point total which measures power flowing into  
12 the system, including adjustments for power generated within the system. The  
13 loads of G1 customers are known since they are metered on an hourly basis,  
14 providing "interval data." The loads of Non-G1 customers are estimated  
15 initially based upon customer class load profiles and usage factors. For each  
16 hour, the sum of the interval data for G1 customers and the estimated data for  
17 Non-G1 customers is netted from the tie point data. The difference, referred  
18 to as residual load, is then allocated on a pro-rata basis to all Non-G1  
19 customers.

20  
21 The customer's interval meter data was overstated during the period of the  
22 meter error, and due to the application of residual load to Non-G1 customers,

1 the Non-G1 customer loads were correspondingly understated. Had the meter  
2 error not occurred, the Non-G1 loads reported to ISO-NE would have been  
3 higher than reported and the Non-G1 customers would have paid additional  
4 supply cost.

5  
6 The difference in actual supply costs paid by the customer and what would  
7 have been paid by Non-G1 Default Service relates to differences in retail  
8 rates. For the two-year period for which the refund is calculated, while being  
9 served by third party supplier, the customer over-paid \$1,316,090 in supply  
10 costs. By comparison, Non-G1 supply costs during this period would have  
11 been \$1,152,493. UES has decided that it will absorb the refund of the  
12 difference, \$163,597 (plus interest of \$24,511, for a total of \$188,108), to the  
13 customer, though it did not profit from the over-collection of this amount.

14  
15 **Q. When would UES's Non-G1 Default Service rates include this**  
16 **adjustment?**

17 A. UES proposes to include this adjustment in its next annual reconciliation  
18 filing for non-G1 Default Service, scheduled for March 2012 for rates  
19 effective May 1, 2012. UES proposes to include the adjustment in rates for a  
20 twelve month period. The impact to the Non-G1 Default Service rate would  
21 be approximately \$0.00166 per kWh or \$0.99 for a residential customer using  
22 600 kWh per month. Combined with the impact to the EDC and SCC, a

1 residential customer using 600 kWh per month would see a bill impact of  
2 \$1.14 or 1.36 percent.

3

4 **Q. Have you provided a schedule showing a summary of these calculations**  
5 **and the estimated rate impact?**

6 A. Yes. Schedule UES-2 provides a summary of the figures and rate impact  
7 calculations discussed above. Table A summarizes the amounts billed to the  
8 customer and refund amount by component for the total period. Table B  
9 shows the impact to the reconciling mechanisms and associated rate and bill  
10 impact to a residential customer using 600 kWh per month. As discussed  
11 above, the customer impacts exclude a portion of the supply charge refund.  
12 Table C shows the UES impact, which includes the refund of distribution  
13 charges as well as the difference for supply costs. Table D provides a further  
14 breakdown of these impacts as a percentage of UES's annual revenue by rate  
15 component.

16

17 **V. CONCLUSION**

18 **Q. Does that conclude your testimony?**

19 A. Yes, it does.