Docket No. DE 19-
Schedule TRD-1 2019 Step Adjustment

Page 1 of 5
May 1, 2019 Step Adjustment

| Rate Effective Date |  | 5/1/2019 |  |
| :---: | :---: | :---: | :---: |
| Line No. | Description | Investment Year 2018 |  |
|  | Utility Plant: |  |  |
| 1 | Beginning Utility Plant | \$ | 324,214,118 |
| 2 | Plant Additions |  | 18,361,098 |
| 3 | Retirements |  | $(1,766,899)$ |
| 4 | Ending Utility Plant |  | 340,808,317 |
| 5 | Beginning Accumulated Depreciation |  | 114,418,513 |
| 6 | Depreciation |  | 12,146,479 |
| 7 | Retirements |  | $(1,766,899)$ |
| 8 | Cost of Removal and Salvage |  | $(1,358,593)$ |
| 9 | Ending Accumulated Depreciation |  | 123,439,500 |
| 10 | Ending Net Utility Plant | \$ | 217,368,817 |
|  | Revenue Requirement: |  |  |
| 11 | Change in Net Plant | \$ | 7,573,212 |
| 12 | 80\% of Change in Net Plant |  | 6,058,570 |
| 13 | Pre-Tax Rate of Return |  | 10.15\% |
| 14 | Return and Taxes |  | 615,133 |
| 15 | Depreciation Expense on 80\% of Plant Additions ${ }^{(1)}$ |  | 640,729 |
| 16 | Property Taxes on 80\% Change in Net Plant ${ }^{(2)}$ |  | 187,210 |
| 17 | Revenue Requirement | \$ | 1,443,072 |
| 18 | $\underline{\text { Revenue Requirement Limit: }}$ |  |  |
| 19 | Revenue Requirement | \$ | 1,443,072 |
| 20 | May 1, 2017, 2018 \& 2019 Step Adjustment Revenue Requirement Cap | \$ | 4,500,000 |
| 21 | Less: May 1, 2017 Step Adjustment Revenue Requirement |  | 900,194 |
| 22 | Add: Tax Rate Reduction to May 1, 2017 Step Adjustment |  | 44,991 |
| 23 | Less: May 1, 2018 Step Adjustment Revenue Requirement |  | 3,302,989 |
| 24 | Remaining May 1, 2019 Step Adjustment Revenue Requirement Cap | \$ | 341,808 |
| 25 | Allowable Revenue Requirement (Min of Line 19 or 24) | \$ | 341,808 |

## Notes:

(1) See Annualized Depreciation from page 4
(2) 3.09\% rate (2018 Property Taxes of \$6,727,169 / 2018 Net Utility Plant of \$217,368,817)

## Docket No. DE 19Schedule TRD-1 <br> 2019 Step Adjustment <br> Page 2 of 5

## 2018 Gross Plant Detail

| Description | Beginning Balance | Additions | Retirements | Ending Balance |
| :---: | :---: | :---: | :---: | :---: |
| 301-00 Organization-E | 380 | - | - | 380 |
| 303-00 Intangible Software-5 Yea-E | 4,506,691 | 760,778 | - | 5,267,469 |
| 303-01 Intangible Software-3 Yea-E | 87,196 | - | - | 87,196 |
| 303-02 Intangible Software-10 Yea-E | 4,705,733 | - | - | 4,705,733 |
| 343-00 Prime Movers-E | 56,575 | - | - | 56,575 |
| 353-00 Transmission Station Equi-E | - | - | - | - |
| 360-01 ROW - Distribution-E | 991,116 | - | - | 991,116 |
| 360-02 ROW - Distribution-E | 1,674,812 | - | - | 1,674,812 |
| 361-00 Distribution Structures-E | 2,173,616 | - | - | 2,173,616 |
| 362-00 Distribution Station Equi-E | 45,775,957 | 482,629 | $(75,409)$ | 46,183,177 |
| 364-00 Distribution Poles, Tower-E | 61,567,986 | 4,348,899 | $(448,980)$ | 65,467,905 |
| 365-00 Distribution Overhead Con-E | 78,753,557 | 4,677,473 | $(704,772)$ | 82,726,259 |
| 366-00 Distribution Underground -E | 1,921,524 | 132,716 | $(4,292)$ | 2,049,948 |
| 367-00 Distribution Underground -E | 19,881,802 | 1,335,215 | $(93,582)$ | 21,123,436 |
| 368-00 Distribution Line Transfo-E | 26,231,769 | 1,917,442 | $(5,449)$ | 28,143,763 |
| 368-01 Transformer Installations-E | 20,391,273 | 1,877,682 | $(5,354)$ | 22,263,600 |
| 369-00 Distribution Services-E | 22,441,287 | 893,128 | $(200,440)$ | 23,133,974 |
| 370-00 Distribution Meters-E | 10,138,977 | 700,543 | - | 10,839,521 |
| 370-01 Meter Installation-E | 4,933,880 | 700,543 | - | 5,634,424 |
| 371-00 Installations on Customer-E | 2,139,641 | 246,648 | $(141,975)$ | 2,244,314 |
| 373-00 Street Lights \& Signal Sy-E | 3,320,883 | 203,123 | $(86,645)$ | 3,437,361 |
| 373-01 Street Lights \& Signal Sy-E | - | - | - | - |
| 389-00 General \& Misc. Land-E | 18,620 | - | - | 18,620 |
| 390-00 Structures-E | 4,098,562 | 12,975 | - | 4,111,537 |
| 390-01 General \& Misc. Structure-E | - | - | - | - |
| 391-01 Office Furniture \& Fixtur-E | 278,782 | $(1,696)$ | - | 277,086 |
| 391-03 Computer Equipment-E | - | - | - | - |
| 392-00 Transportation Equipment-E | 1,073,695 | - | - | 1,073,695 |
| 393-00 Stores Equipment-E | 79,908 | - | - | 79,908 |
| 394-00 Tools, Shop and garage Eq-E | 1,909,247 | 123,357 | - | 2,032,604 |
| 395-00 Laboratory Equipment-E | 852,772 | 284 | - | 853,056 |
| 397-00 Communication Equipment-E | 4,104,932 | $(50,643)$ | - | 4,054,290 |
| 398-00 Miscellaneous Equipment-E | 102,943 | - | - | 102,943 |
| 399-00 Other Intangible Plant-E | - | - | - | - |
| Grand Total | 324,214,118 | 18,361,098 | $(1,766,899)$ | 340,808,317 |

Docket No. DE 19-
Schedule TRD-1
2019 Step Adjustment
Page 3 of 5

## 2018 Accumulated Depreciation Detail

| Description | Beginning Balance | Provision | Retirements | Cost of Removal | Salvage | Ending Balance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 301-00 Organization | - | - | - | - | - | - |
| 303-00 Intangible Software-5 Year | 3,865,915 | 256,785 | - | - | - | 4,122,700 |
| 303-01 Intangible Software-3 Year | 87,196 | - | - | - | - | 87,196 |
| 303-02 Intangible Software-10 Year | 1,203,428 | 470,573 | - | - | - | 1,674,001 |
| 343-00 Prime Movers | 25,475 | 3,774 | - | - | - | 29,249 |
| 353-00 Transmission Station Equi-E | - | - | - | - | - | - |
| 360-01 ROW - Distribution-E | - | - | - | - | - | - |
| 360-02 ROW - Distribution-E | - | - | - | - | - | - |
| 361-00 Distribution Structures | 146,398 | 53,254 | - | - | - | 199,652 |
| 362-00 Distribution Station Equipme | 9,049,261 | 1,186,616 | $(75,409)$ | $(52,152)$ | - | 10,108,316 |
| 364-00 Distribution Poles, Towers \& | 23,953,300 | 2,334,398 | $(448,980)$ | $(598,930)$ | 4,607 | 25,244,394 |
| 365-00 Distribution Overhead Conduc | 24,358,610 | 2,925,997 | $(704,772)$ | $(587,509)$ | 11,454 | 26,003,780 |
| 366-00 Distribution Underground Con | 627,217 | 40,314 | $(4,292)$ | $(2,227)$ | - | 661,012 |
| 367-00 Distribution Underground Con | 5,964,162 | 521,668 | $(93,582)$ | $(81,626)$ | 785 | 6,311,408 |
| 368-00 Distribution Line Transforme | 10,167,952 | 795,176 | $(5,449)$ | $(13,420)$ | - | 10,944,259 |
| 368-01 Transformer Installations | 5,258,722 | 597,113 | $(5,354)$ | (33) | - | 5,850,448 |
| 369-00 Distribution Services | 15,510,678 | 1,286,093 | $(200,440)$ | $(26,675)$ | 79 | 16,569,734 |
| 370-00 Distribution Meters | 4,140,985 | 511,035 | - | - | - | 4,652,019 |
| 370-01 Meter Installation | 798,695 | 250,780 | - | - | - | 1,049,475 |
| 371-00 Installations on Customers P | 512,355 | 164,982 | $(141,975)$ | $(17,061)$ | 17,305 | 535,606 |
| 373-00 Street Lights \& Signal Syste | 2,451,436 | 262,867 | $(86,645)$ | $(23,992)$ | 18,459 | 2,622,126 |
| 373-01 Street Lights \& Signal Syste | - | - | - | - | - | - |
| 389-00 General \& Misc. Land | - | - | - | - | - | - |
| 390-00 Structures | 1,594,775 | 85,362 | - | - | - | 1,680,137 |
| 390-01 General \& Misc. Structures | 863 | - | - | - | - | 863 |
| 391-01 Office Furniture \& Fixtures | $(122,521)$ | 16,281 | - | - | - | $(106,240)$ |
| 391-03 Computer Equipment | 4,346 | - | - | - | - | 4,346 |
| 392-00 Transportation Equipment | 1,045,145 | - | - | - | - | 1,045,145 |
| 393-00 Stores Equipment | 58,097 | 2,685 | - | - | - | 60,782 |
| 394-00 Tools, Shop and garage Equip | 755,002 | 71,154 | - | - | - | 826,156 |
| 395-00 Laboratory Equipment | 394,803 | 33,269 | - | - | - | 428,072 |
| 397-00 Communication Equipment | 2,477,785 | 271,281 | - | $(7,658)$ | - | 2,741,408 |
| 398-00 Miscellaneous Equipment | 88,434 | 5,024 | - | - | - | 93,458 |
| 399-00 Other Tangible Property | - | - | - | - | - | - |
| Grand Total | 114,418,513 | 12,146,479 | $(1,766,899)$ | $(1,411,283)$ | 52,690 | 123,439,500 |

## Docket No. DE 19- <br> Schedule TRD-1 2019 Step Adjustment <br> Page 4 of 5

## Annualized Depreciation by FERC Account

| Description | Additions | Depreciation Rate | Annual Depreciation |
| :---: | :---: | :---: | :---: |
| 303-00 Intangible Software-5 Yea-E | 760,778 | 20.00\% | 152,156 |
| 303-02 Intangible Software-10 Yea-E | - | 10.00\% | - |
| 361-00 Distribution Structures-E | - | 2.45\% | - |
| 362-00 Distribution Station Equi-E | 482,629 | 2.60\% | 12,548 |
| 364-00 Distribution Poles, Tower-E | 4,348,899 | 3.70\% | 160,909 |
| 365-00 Distribution Overhead Con-E | 4,677,473 | 3.64\% | 170,260 |
| 366-00 Distribution Underground -E | 132,716 | 2.04\% | 2,707 |
| 367-00 Distribution Underground -E | 1,335,215 | 2.55\% | 34,048 |
| 368-00 Distribution Line Transfo-E | 1,917,442 | 3.00\% | 57,523 |
| 368-01 Transformer Installations-E | 1,877,682 | 2.89\% | 54,265 |
| 369-00 Distribution Services-E | 893,128 | 5.67\% | 50,640 |
| 370-00 Distribution Meters-E | 700,543 | 5.00\% | 35,027 |
| 370-01 Meter Installation-E | 700,543 | 5.00\% | 35,027 |
| 371-00 Installations on Customer-E | 246,648 | 7.56\% | 18,647 |
| 373-00 Street Lights \& Signal Sy-E | 203,123 | 7.79\% | 15,823 |
| 390-00 Structures-E | 12,975 | 2.08\% | 270 |
| 391-01 Office Furniture \& Fixtur-E | $(1,696)$ | 5.83\% | (99) |
| 394-00 Tools, Shop and garage Eq-E | 123,357 | 3.64\% | 4,490 |
| 395-00 Laboratory Equipment-E | 284 | 3.90\% | 11 |
| 397-00 Communication Equipment-E | $(50,643)$ | 6.60\% | $(3,342)$ |
| Grand Total | 18,361,098 | 4.36\% | 800,911 |

Docket No. DE 19
Schedule TRD-1 2019 Step Adjustment

Page 5 of 5
Pre-Tax Rate of Return December 31, 2015 Pro Forma

| Line No. | Description | Proformed Amount |  | Weight | Cost of Capital | Weighted Cost of Capital | Tax Factor ${ }^{(1)}$ | $\begin{gathered} \text { Pre-Tax } \\ \text { Cost } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Common Stock Equity | \$ | 77,284,950 | 50.97\% | 9.50\% | 4.84\% | 1.3744 | 6.65\% |
| 2 | Preferred Stock Equity |  | 189,800 | 0.13\% | 6.00\% | 0.01\% |  | 0.01\% |
| 3 | Long Term Debt |  | 74,000,000 | 48.80\% | 7.15\% | 3.49\% |  | 3.49\% |
| 4 | Short Term Debt |  | 161,783 | 0.11\% | 1.54\% | 0.00\% |  | 0.00\% |
| 5 | Total | \$ | 151,636,533 | 100.00\% |  | 8.34\% |  | 10.15\% |

Notes:
(1) Tax factor calculated using a Federal Tax Rate of 21\% and State Tax Rate of 7.9\% (effective tax rate of 27.241\%)

UNITIL ENERGY SYSTEMS, INC.
MAJOR STORM COST RESERVE COLLECTION BALANCE

Docket No. DE 19-
Schedule TRD-2
MSCR Collection Balance
Page 1 of 1

Beginning (Over)/Under Collection
Storm Costs
Transfers ${ }^{(1)}$
Customer Revenue
Interest
Ending (Over)/Under Collection
Proposed Adjustment ${ }^{(2)}$
Adjusted Ending (Over)/Under Collection

| Dec-13 |  | Dec-14 |  | Dec-15 |  | Dec-16 |  | Dec-17 |  | Dec-18 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 406,966 | \$ | 1,161,973 | \$ | 1,009,342 | \$ | 2,862,064 | \$ | 2,758,708 | \$ | 4,539,995 |
|  | 1,374,471 |  | 593,310 |  | 2,521,986 |  | 572,142 |  | 2,438,860 |  | 2,260,220 |
|  | - |  | - |  | - |  | - |  | - |  | 1,257,109 |
|  | 666,667 |  | 800,000 |  | 800,000 |  | 800,000 |  | 800,000 |  | 800,000 |
|  | 47,203 |  | 54,059 |  | 130,737 |  | 124,502 |  | 142,427 |  | 248,944 |
| \$ | 1,161,973 | \$ | 1,009,342 | \$ | 2,862,065 | \$ | 2,758,708 | \$ | 4,539,995 | \$ | 4,992,050 |
|  | - |  | - |  | - |  | - |  | - |  | 1,618,723 |
|  | 1,161,973 |  | 1,009,342 |  | 2,862,065 |  | 2,758,708 |  | 4,539,995 |  | 3,373,327 |

Note:
(1) Per Order No. 26,123, the Company moved $\$ 1,257,109$ in costs related to the 10/30/17 Windstorm Event (costs reported in the 2017 MSCR Report, plus associated carrying charges) to the SRAF
(2) Proposed adjustment to remove Winter Storm Quinn (costs reported in the 2018 MSCR Report, plus associated carrying charges) to the SRAF

# Docket No. DE 19- <br> Schedule TRD-3 SRAF Amortization 

UNITIL ENERGY SYSTEMS, INC.
Winter Storm Quinn (March 2018) Incremental Cost - Recovery
Calculation of Increment to the Storm Recovery Adjustment Factor
Effective May 1, 2019

| Description | Amount |  |
| :---: | :---: | :---: |
| Incremental Annual Recovery (Page 2) | \$ | 581,518 |
| Sales (kWh) - 12 months ending December 31, 2018 |  | 4,436,868 |
| Storm Recovery Adjustment Factor (Increment, \$/kWh)* | \$ | 0.00047 |
| * To be added to the current Storm Recovery Adjustment Factor. |  |  |
| Current SRAF (effective February 2019 | \$ | 0.00133 |
| less: recovery of December 2008 ice storm \& February 2010 wind storm (terminates effective 5/1/2019) | \$ | (0.00096) |
| plus: recovery of Winter Storm Quinn (proposed for effect 5/1/2019) | \$ | 0.00047 |
| Total SRAF for effect May 1, 2019: | \$ | 0.00084 |

# Docket No. DE 19- <br> Schedule TRD-3 SRAF Amortization <br> Page 2 of 3 

UNITIL ENERGY SYSTEMS, INC.
Winter Storm Quinn (March 2018) - Recovery Schedule

Column
Notes
(A)
Time period
(B)
(Crior period Column (D) + Prior period Column (G)
(D)
Annual Recovery
(E)
( Column (B) - Column (C) + Column (D) ) $\div 2$
(F)
(G)
Cos's Cost of Debt net of deferred taxes (E) times Column (F)
(H) Prior Year Column (H) + Current Year Column (G)

Docket No. DE 19-
Schedule TRD-3 SRAF Amortization Page 3 of 3

UNITIL ENERGY SYSTEMS, INC.
Winter Storm Quinn (March 2018) Incremental Costs

|  | $\frac{\text { Month }}{(A)}$ | Beginning Balance (B) | Winter Storm Quinn Charges (C) | Ending Balance (D) | Balance Subject to Interest (E) | Interest Rate (F) | $\frac{\text { Interest }}{(G)}$ | $\frac{\text { Balance }}{(\mathrm{H})}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | Mar-Oct 2018 | \$0 | \$1,550,964 | \$1,550,964 | \$775,482 | 5.20\% | \$27,068 | \$1,578,031 |
| (2) | Nov 2018 - Apr 2019 | \$1,578,031 | \$0 | \$1,578,031 | \$1,578,031 | 5.20\% | \$40,692 | \$1,618,723 |
|  |  |  | \$1,550,964 |  |  |  | \$67,759 | \$1,618,723 |

## Unitil Energy Systems, Inc.

PUC 308.11-F-1 Rate of Return
12 Months Ending December 31, 2018
Schedule 1: Calculation of Per Books Rate of Return

| Cost of Service | Rolling 12 Months |  | Rate Base |  |  | Period End |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Electric Service Revenue | \$ | 155,025,055 |  | Utility Plant i | ervice |  | 340,808,317 |
| Other Operating Revenue |  | 2,623,127 |  | Less: Reserv | for Depreciation \& Amortization |  | 123,439,500 |
| Total Operating Revenue |  | 157,648,182 |  | Net U | $y$ Plant |  | 217,368,817 |
| Operating Expenses: |  |  |  | Plus: |  |  |  |
| Purchased Power |  | 61,038,767 |  | M\&S Inve | ries |  | 1,794,149 |
| Transmission |  | 29,521,428 |  | Cash Wo | ng Capital |  | 2,919,467 |
| Distribution |  | 9,286,501 |  | Prepaym |  |  | 5,224,634 |
| Cust. Accounting \& Service |  | 8,506,053 |  | Regulator | Assets |  | 1,916,999 |
| Admin. \& General |  | 10,665,287 |  |  |  |  |  |
| Depreciation |  | 11,419,121 |  | Less: |  |  |  |
| Amortization |  | 3,484,160 |  | Deferred | ome Taxes |  | 39,777,804 |
| Taxes-Other Than Income |  | 6,519,710 |  | Regulator | iabilities |  | 15,621,909 |
| State \& Federal Income Taxes - Adjusted |  | 3,119,845 |  | Customer | dvances |  | 616,161 |
| Int on Customer Deposits |  | 32,204 |  | Customer | eposits |  | 670,910 |
| Total Operating Expenses |  | 143,593,074 |  | Total | Base | \$ | 172,537,282 |
| Net Operating Income | \$ | 14,055,108 |  | Utility Operating Income - Current Cost of Capital Utility Operating Income - Adjusted |  | \$ | 13,130,087 |
|  |  |  |  |  |  | \$ | 13,234,945 |
| Less: Flow-Through Oper. Inc. (Exc. Lost Base Rev.) | 820,163 |  |  |  |  |  |  |
|  |  |  |  | Operating In | me Deficiency (Surplus) | \$ | $(104,858)$ |
| Net Operating Income - Adjusted | \$ | 13,234,945 |  | Income Tax | ss-Up | \$ | $(39,259)$ |
|  |  |  |  | Revenue Deficiency (Surplus) |  | \$ | $\underline{(144,117)}$ |
|  |  |  |  | Return on R | Base - Actual |  | 7.67\% |
|  |  |  |  | Return on R | Base - Current Cost of Capital |  | 7.61\% |
|  |  |  |  | ROE - Actua |  |  | 9.65\% |
|  |  |  |  | ROE - Auth | zed DE 16-384 |  | 9.50\% |
| Schedule 2: Current Cost of Capital | Amount Outstanding |  | Percent Total | Cost Rate | Weighted Cost Rate |  |  |
| Common Equity | \$ | 83,926,900 | 44.74\% | 9.50\% | 4.25\% |  |  |
| Preferred Stock Equity | \$ | 189,300 | 0.10\% | 6.00\% | 0.01\% |  |  |
| Long Term Debt | \$ | 96,000,000 | 51.17\% | 6.30\% | 3.22\% |  |  |
| Short Term Debt (a) | \$ | 7,487,836 | 3.99\% | 3.14\% | 0.13\% |  |  |
| Total | \$ | 187,604,036 | 100.00\% |  | 7.61\% |  |  |

[^0]Unitil Energy Systems, Inc.

## Rate Design Calculation

Individual Rate Design Calculations

| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\qquad$ | Step 1 Adjustment Rates | Step 2 <br> Adjustment <br> Rates | Step 2 Tax Adjusted Rates | Tax Adjusted Revenue May 1, 2018 | Percent Change | Step 3 Adjustment $\qquad$ | Step 3 Adjustment Revenue May 1, 2019 | Percent Change |
| Residential - D |  |  |  |  |  |  |  |  |  |
| Test Year Consumers | 785,306 | \$15.24 | \$16.12 | \$16.12 | \$12,661,259 | 0.00\% | \$16.22 | \$12,735,726 | 0.59\% |
| All kWh | 497,875,828 | \$0.03566 | \$0.03773 | \$0.03537 | \$17,609,495 | -6.25\% | \$0.03558 | \$17,713,066 | 0.59\% |
| Total Design Revenue |  |  |  |  | \$30,270,754 | -3.73\% |  | \$30,448,792 | 0.59\% |
| Small General Service - G2 kWh |  |  |  |  |  |  |  |  |  |
| Test Year Consumers | 5,238 | \$17.27 | \$18.27 | \$18.27 | \$95,717 | 0.00\% | \$18.38 | \$96,280 | 0.59\% |
| Annual kWh | 607,397 | \$0.01440 | \$0.01523 | \$0.00878 | \$5,332 | -42.36\% | \$0.00883 | \$5,364 | 0.59\% |
| Total Design Revenue |  |  |  |  | \$101,050 | -3.73\% |  | \$101,644 | 0.59\% |
| Small General Service - G2 QR WH /SH |  |  |  |  |  |  |  |  |  |
| Test Year Consumers | 3,454 | \$9.14 | \$9.67 | \$9.67 | \$33,411 | 0.00\% | \$9.73 | \$33,608 | 0.59\% |
| Annual kWh | 5,742,223 | \$0.03149 | \$0.03331 | \$0.03185 | \$182,883 | -4.39\% | \$0.03204 | \$183,958 | 0.59\% |
| Total Design Revenue |  |  |  |  | \$216,294 | -3.73\% |  | \$217,566 | 0.59\% |
| Small General Service - G2 Demand |  |  |  |  |  |  |  |  |  |
| Test Year Consumers | 123,180 | \$27.43 | \$29.02 | \$29.02 | \$3,574,789 | 0.00\% | \$29.19 | \$3,595,814 | 0.59\% |
| Demand kW | 1,348,556 | \$10.35 | \$10.95 | \$10.45 | \$14,086,374 | -4.63\% | \$10.51 | \$14,169,223 | 0.59\% |
| Annual kWh | 347,811,789 | \$0.00000 | \$0.00000 | \$0.00000 | \$0 | 0.00\% | \$0.00000 | \$0 | 0.00\% |
| Total Design Revenue |  |  |  |  | \$17,661,162 | -3.73\% |  | \$17,765,037 | 0.59\% |
| G2 Demand - kW Transformer Ownership Discount |  |  |  |  |  |  |  |  |  |
| Test Year kW | 50,269 | (\$0.50) | (\$0.50) | (\$0.50) | -\$25,134 |  | (\$0.50) | -\$25,134 |  |
| Total Design Revenue |  |  |  |  | -\$25,134 | 0.00\% |  | -\$25,134 | 0.00\% |
| Subtotal G2 Demand inc. Transformer Ownership Discount |  |  |  |  |  |  |  |  |  |
| Total Design Revenue |  |  |  |  | \$17,636,028 | -3.73\% |  | \$17,739,903 | 0.59\% |
| Large General Service - G1 |  |  |  |  |  |  |  |  |  |
| Test Year Consumers Secondary | 1,497 | \$152.40 | \$161.23 | \$161.23 | \$241,357 |  | \$162.18 | \$242,776 |  |
| Test Year Consumers Primary | 381 | \$81.28 | \$85.99 | \$85.99 | \$32,761 |  | \$86.49 | \$32,954 |  |
| Demand kVA | 1,022,850 | \$7.42 | \$7.85 | \$7.55 | \$7,723,570 |  | \$7.60 | \$7,768,997 |  |
| Annual kWh | 353,924,392 | \$0.00000 | \$0.00000 | \$0.00000 | \$0 |  | \$0.00000 | \$0 |  |
| Total Design Revenue |  |  |  |  | \$7,997,688 | -3.64\% |  | \$8,044,727 | 0.59\% |
| G1-kVA Transformer Ownership Discount |  |  |  |  |  |  |  |  |  |
| Test Year kVA | 415,470 | (\$0.50) | (\$0.50) | (\$0.50) | -\$207,735 |  | (\$0.50) | -\$207,735 |  |
| Total Design Revenue |  |  |  |  | -\$207,735 | 0.00\% |  | -\$207,735 | 0.00\% |
| Subtotal G1 inc. Transformer Ownership Discount |  |  |  |  |  |  |  |  |  |
| Total Design Revenue |  |  |  |  | \$7,789,953 | -3.73\% |  | \$7,836,992 | 0.60\% |

## Unitil Energy Systems, Inc. <br> Rate Design Calculation <br> Individual Rate Design Calculations

| (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Test Year 2015 Billing Units | Step 1 Adjustment Rates | Step 2 Adjustment Rates | Step 2 Tax Adjusted Rates | Tax Adjusted Revenue May 1, 2018 | Percent <br> Change | Step 3 Adjustment Rates | Step 3 Adjustment Revenue May 1, 2019 | Percent <br> Change |
| Outdoor Lighting - OL |  |  |  |  |  |  |  |  |  |
| Delivery charge - Annual kWh | 8,241,454 | \$0.00000 | \$0.00000 | \$0.00000 | \$0 |  | \$0.00000 | \$0 |  |
| Fixture revenue |  |  |  |  |  |  |  |  |  |
| 100W Mercury Vapor Street | 17,494 | \$12.96 | \$13.72 | \$13.20 | \$230,973 |  | \$13.28 | \$232,331 |  |
| 175W Mercury Vapor Street | 894 | \$15.37 | \$16.26 | \$15.66 | \$13,999 |  | \$15.75 | \$14,081 |  |
| 250W Mercury Vapor Street | 945 | \$17.42 | \$18.43 | \$17.75 | \$16,771 |  | \$17.85 | \$16,869 |  |
| 400W Mercury Vapor Street | 1,940 | \$20.75 | \$21.95 | \$21.13 | \$40,994 |  | \$21.25 | \$41,235 |  |
| 1000W Mercury Vapor Street | 24 | \$41.19 | \$43.57 | \$41.95 | \$1,007 |  | \$42.19 | \$1,013 |  |
| 250W Mercury Vapor Flood | 850 | \$18.56 | \$19.64 | \$18.90 | \$16,062 |  | \$19.02 | \$16,157 |  |
| 400W Mercury Vapor Flood | 1,403 | \$22.21 | \$23.50 | \$22.62 | \$31,740 |  | \$22.75 | \$31,926 |  |
| 1000W Mercury Vapor Flood | 272 | \$36.80 | \$38.93 | \$37.48 | \$10,200 |  | \$37.70 | \$10,260 |  |
| 100W Mercury Vapor Power Bracket | 4,860 | \$13.09 | \$13.84 | \$13.33 | \$64,773 |  | \$13.41 | \$65,154 |  |
| 175W Mercury Vapor Power Bracket | 715 | \$14.52 | \$15.36 | \$14.79 | \$10,573 |  | \$14.87 | \$10,635 |  |
| 50W Sodium Vapor Street | 41,383 | \$13.20 | \$13.96 | \$13.44 | \$556,227 |  | \$13.52 | \$559,499 |  |
| 100W Sodium Vapor Street | 1,182 | \$14.85 | \$15.71 | \$15.13 | \$17,879 |  | \$15.22 | \$17,985 |  |
| 150W Sodium Vapor Street | 4,221 | \$14.92 | \$15.78 | \$15.19 | \$64,121 |  | \$15.28 | \$64,498 |  |
| 250W Sodium Vapor Street | 13,250 | \$18.68 | \$19.77 | \$19.03 | \$252,123 |  | \$19.14 | \$253,606 |  |
| 400W Sodium Vapor Street | 3,106 | \$23.55 | \$24.91 | \$23.98 | \$74,508 |  | \$24.13 | \$74,946 |  |
| 1000W Sodium Vapor Street | 1,728 | \$40.67 | \$43.03 | \$41.42 | \$71,575 |  | \$41.66 | \$71,996 |  |
| 150W Sodium Vapor Flood | 2,796 | \$17.19 | \$18.19 | \$17.51 | \$48,947 |  | \$17.61 | \$49,235 |  |
| 250W Sodium Vapor Flood | 3,708 | \$20.27 | \$21.44 | \$20.64 | \$76,549 |  | \$20.76 | \$76,999 |  |
| 400W Sodium Vapor Flood | 4,724 | \$23.02 | \$24.36 | \$23.45 | \$110,756 |  | \$23.58 | \$111,408 |  |
| 1000W Sodium Vapor Flood | 2,789 | \$41.03 | \$43.40 | \$41.78 | \$116,532 |  | \$42.03 | \$117,217 |  |
| 50W Sodium Vapor Power Bracket | 1,304 | \$12.21 | \$12.92 | \$12.44 | \$16,222 |  | \$12.51 | \$16,318 |  |
| 100W Sodium Vapor Power Bracket | 777 | \$13.71 | \$14.50 | \$13.96 | \$10,844 |  | \$14.04 | \$10,908 |  |
| 175W Metal Halide Street | 19 | \$19.44 | \$20.56 | \$19.79 | \$374 |  | \$19.91 | \$376 |  |
| 250W Metal Halide Street | 0 | \$21.13 | \$22.36 | \$21.52 | \$0 |  | \$21.65 | \$0 |  |
| 400W Metal Halide Street | 0 | \$21.92 | \$23.18 | \$22.32 | \$0 |  | \$22.45 | \$0 |  |
| 175W Metal Halide Flood | 0 | \$22.45 | \$23.75 | \$22.87 | \$0 |  | \$23.00 | \$0 |  |
| 250W Metal Halide Flood | 0 | \$24.24 | \$25.65 | \$24.69 | \$0 |  | \$24.83 | \$0 |  |
| 400W Metal Halide Flood | 0 | \$24.28 | \$25.69 | \$24.73 | \$0 |  | \$24.88 | \$0 |  |
| 1000W Metal Halide Flood | 465 | \$31.46 | \$33.28 | \$32.03 | \$14,882 |  | \$32.22 | \$14,970 |  |
| 175W Metal Halide Power Bracket | 0 | \$18.19 | \$19.24 | \$18.52 | \$0 |  | \$18.63 | \$0 |  |
| 250W Metal Halide Power Bracket | 0 | \$19.34 | \$20.45 | \$19.69 | \$0 |  | \$19.81 | \$0 |  |
| 400W Metal Halide Power Bracket | 0 | \$20.67 | \$21.86 | \$21.05 | \$0 |  | \$21.17 | \$0 |  |

Docket No. DE 19-
Schedule TRD-5 Rate Design Page 3 of 3

## Unitil Energy Systems, Inc. <br> Rate Design Calculation <br> Individual Rate Design Calculations

| (a) | (b) | (c) | (d) | (e) | (f) |  | (g) |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |



Docket No. DE 18-


Docket No. DE 18-
Schedule TRD-6
Bill Impacts
Page 3 of 6

| Unitil Energy Systems, Inc. <br> Typical Bill Impacts - January 1, 2019 vs. May 1, 2019 <br> Step Adjustment Filing - February 28, 2019 Impact on G2 kWh Meter Rate Customers |  |  |  |
| :---: | :---: | :---: | :---: |
| Average Total Bill | Total Bill |  | \% |
| Monthly Using Rates | Using Rates | Total | Total |
| kWh $\quad$ 1/1/2019 | 5/1/2019 | Difference | Difference |
| 15 \$20.44 | \$20.54 | \$0.10 | 0.5\% |
| 75 \$29.12 | \$29.20 | \$0.08 | 0.3\% |
| 150 \$39.98 | \$40.02 | \$0.04 | 0.1\% |
| 250 \$54.45 | \$54.45 | \$0.00 | 0.0\% |
| 350 \$68.93 | \$68.88 | (\$0.04) | (0.1\%) |
| 450 \$83.40 | \$83.31 | (\$0.09) | (0.1\%) |
| 550 \$97.87 | \$97.74 | (\$0.13) | (0.1\%) |
| 650 \$112.34 | \$112.17 | (\$0.18) | (0.2\%) |
| 750 \$126.82 | \$126.60 | (\$0.22) | (0.2\%) |
| $900 \quad \$ 148.53$ | \$148.24 | (\$0.29) | (0.2\%) |
|  |  |  |  |
|  |  |  |  |
|  | Rates - Effective January 1, 2019 | Rates - Proposed May 1, 2019 | Difference |
| kWh Meter Customer Charge | \$18.27 | \$18.38 | \$0.11 |
|  | All kWh | All kWh | All kWh |
| Distribution Charge | \$0.00878 | \$0.00883 | \$0.00005 |
| External Delivery Charge | \$0.02389 | \$0.02389 | \$0.00000 |
| Stranded Cost Charge | (\$0.00101) | (\$0.00101) | \$0.00000 |
| Storm Recovery Adjustment Factor | \$0.00133 | \$0.00084 | (\$0.00049) |
| System Benefits Charge | \$0.00576 | \$0.00576 | \$0.00000 |
| Default Service Charge | \$0.10598 | \$0.10598 | \$0.00000 |
| TOTAL | \$0.14473 | \$0.14429 | (\$0.00044) |


| Unitil Energy Systems, Inc. <br> Typical Bill Impacts - January 1, 2019 vs. May 1, 2019 <br> Step Adjustment Filing - February 28, 2019 Impact on G2 QRWH and SH Rate Customers |  |  |  |
| :---: | :---: | :---: | :---: |
| Total Bill | Total Bill |  | \% |
| Average Using Rates | Using Rates | Total | Total |
| kWh $\quad \underline{1 / 1 / 2019}$ | 5/1/2019 | Difference | Difference |
| 100 \$26.45 | \$26.48 | \$0.03 | 0.1\% |
| 200 \$43.23 | \$43.23 | \$0.00 | 0.0\% |
| 300 \$60.01 | \$59.98 | (\$0.03) | (0.0\%) |
| $400 \quad \$ 76.79$ | \$76.73 | (\$0.06) | (0.1\%) |
| 500 \$93.57 | \$93.48 | (\$0.09) | (0.1\%) |
| 750 \$135.52 | \$135.36 | (\$0.16) | (0.1\%) |
| 1,000 \$177.47 | \$177.23 | (\$0.24) | (0.1\%) |
| 1,500 \$261.37 | \$260.98 | (\$0.39) | (0.1\%) |
| 2,000 \$345.27 | \$344.73 | (\$0.54) | (0.2\%) |
| 2,500 \$429.17 | \$428.48 | (\$0.69) | (0.2\%) |
|  |  |  |  |
|  | Rates - Effective January 1, 2019 | Rates - Proposed <br> May 1, 2019 | Difference |
| Customer Charge | \$9.67 | \$9.73 | \$0.06 |
|  | All kWh | All kWh | All kWh |
| Distribution Charge | \$0.03185 | \$0.03204 | \$0.00019 |
| External Delivery Charge | \$0.02389 | \$0.02389 | \$0.00000 |
| Stranded Cost Charge | (\$0.00101) | (\$0.00101) | \$0.00000 |
| Storm Recovery Adjustment Factor | \$0.00133 | \$0.00084 | (\$0.00049) |
| System Benefits Charge | \$0.00576 | \$0.00576 | \$0.00000 |
| Default Service Charge | \$0.10598 | \$0.10598 | \$0.00000 |
| TOTAL | \$0.16780 | \$0.16750 | (\$0.00030) |





[^0]:    (a) Excluding Accrued Revenue, Power Supply Working Capital and CWIP

