BEFORE THE
STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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In the Matter of

Liberty Utilities (St. Lawrence Gas) Corp.

Case 24-G-0668

April 1, 2025

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Prepared Exhibits of:

Staff Revenue Allocation and Rate Design Panel

Sara Orsino
Utility Engineering Specialist 2

Joshua Howland
Utility Engineering Specialist 1

Jackson Harmon
Utility Engineering Specialist 1

Office of Rates and Tariffs
State of New York
Department of Public Service
Three Empire State Plaza
Albany, New York 12223-1350

List of Exhibits

Relied Upon Responses to Interrogatories (IR)
Index of Exhibit_(SRARDP-1)
(Exhibit__(SDP-1) will be filed in its entirety
on April 8, 2025)

| Summary of Revenues at Current Rates | | | |
|---|---|---|---|
| | COMPANY CU | STAFF | DIFFERENCE |
| SC-1 S | $ 10,016,520 | $10,132,038 | $ 115,519 |
| SC-1 T | $ 252,584 | $ 247,769 | $ (4,815) |
| SC-2 S S | $ 2,220,921 | $ 2,208,838 | $ (12,083) |
| SC-2 S T | $ 1,462,438 | $ 1,442,823 | $ (19,615) |
| SC-2A S | $ 501,830 | $ 493,284 | $ (8,546) |
| SC-2A T | $ 410,663 | $ 403,075 | $ (7,588) |
| SC-3 S | $ 43,695 | $ 43,695 | $ - |
| SC-3 T | $ 1,165,584 | $ 1,165,584 | $ - |
| SC-4 S<br>SC-4 T | $ 847,243 | $ 847,243 | $ - |
| SC-5 | $ 40,866 | $ 40,866 | $ - |
| MFC/DRA | $ 613,991 | $ 491,055 | $ (122,936) |
| GRT | $ 462,894 | $ 462,894 | $ - |
| Gas Cost | $ 16,243,698 | $16,265,227 | $ 21,529 |
| Misc Rev | $ 130,507 | $ 14,206 | $ (116,301) |
| Other Rev | $ 579,134 | $ 579,134 | $ - |
| Forfeited Discounts | $ 181,791 | $ 181,791 | $ - |
| Sales for Other | $ 10,388 | $ 10,388 | $ - |
| TOTAL | $ 35,184,746 | $35,029,909 | $ (154,836) |

**Summary of Staff Revised ECOS**

| Description (A) | | System Total (B) | | Residential Sales SC 1 (C) | Residential Trans SC-1 (D) | Commercial Sales SC 2 (E) | Commercial Trans SC-2 (F) | Industrial Sales SC 3 (G) | Industrial Trans SC-3 (H) |
|---|---|---|---|---|---|---|---|---|---|
| **Rate Base** | | | | | | | | | |
| Plant in Service | | $ 83,628,175 | | $ 43,923,741 | $ 588,769 | $16,131,043 | $ 8,955,435 | $ 511,348 | $13,517,839 |
| Accumulated Reserve | | $(35,677,273) | | $(19,134,574) | $(247,722) | $ (6,976,552) | $(3,732,400) | $(191,506) | $ (5,394,520) |
| Other Rate Base Items | | $(10,332,803) | | $ (5,357,935) | $ (73,410) | $ (1,981,847) | $(1,127,638) | $ (64,736) | $ (1,727,237) |
| Total Rate Base | | $ 37,618,098 | | $ 19,431,233 | $ 267,637 | $ 7,172,643 | $ 4,095,398 | $ 255,106 | $ 6,396,082 |
| **Revenues at Current Rates** | % of del rev | 100.00% | | 62.95% | 1.57% | 17.13% | 10.86% | 0.27% | 7.22% |
| Delivery Revenue | | $ 15,575,765 | | $ 9,805,543 | $ 244,658 | $ 2,668,214 | $ 1,690,767 | $ 41,749 | $ 1,124,833 |
| MFC Revenue | | $ 475,081 | | $ 178,460 | $ 1,899 | $ 144,450 | $ 32,480 | $ 6,053 | $ 111,739 |
| Gas Cost Revenue | | $ 16,311,712 | | $ 6,715,724 | $ 57,814 | $ 5,435,875 | $ 1,410,937 | $ 204,156 | $ 2,487,206 |
| SC-4 / SC-5 Margin | | $ 981,154 | | $ 617,674 | $ 15,412 | $ 168,077 | $ 106,505 | $ 2,630 | $ 70,856 |
| Revenue Tax | | $ 423,168 | | $ 259,304 | $ 5,366 | $ 94,326 | $ 37,085 | $ 2,415 | $ 24,672 |
| Miscellaneous Revenues | | $ 1,006,009 | | $ 625,158 | $ 14,329 | $ 197,452 | $ 99,023 | $ 4,170 | $ 65,878 |
| Total Revenues | | $ 34,772,889 | | $ 18,201,864 | $ 339,478 | $ 8,708,393 | $ 3,376,797 | $ 261,173 | $ 3,885,184 |
| **Expenses at Current Rates** | | | | | | | | | |
| Purchased Gas Expense | | $ 16,311,712 | | $ 6,715,724 | $ 57,814 | $ 5,435,875 | $ 1,410,937 | $ 204,156 | $ 2,487,206 |
| Operations & Maintenance Expenses | | $ 9,399,124 | | $ 5,475,511 | $ 61,000 | $ 1,900,671 | $ 841,768 | $ 45,344 | $ 1,074,830 |
| Depreciation Expense | | $ 1,494,480 | | $ 802,772 | $ 9,943 | $ 293,650 | $ 147,735 | $ 9,431 | $ 230,949 |
| Taxes Other Than Income Taxes | | $ 3,553,477 | | $ 1,903,527 | $ 24,776 | $ 677,116 | $ 372,890 | $ 20,568 | $ 554,600 |
| Income Taxes | | $ 696,692 | | $ 534,658 | $ 32,848 | $ 68,984 | $ 121,803 | $ (3,313) | $ (58,288) |
| Total Expenses - Current | | $ 31,455,485 | | $ 15,432,192 | $ 186,381 | $ 8,376,296 | $ 2,895,133 | $ 276,187 | $ 4,289,296 |
| **Current Operating Income** | | $ 3,317,403 | | $ 2,769,672 | $ 153,097 | $ 332,097 | $ 481,664 | $ (15,014) | $ (404,113) |
| **Return at Current Rates** | | 8.82% | | 14.25% | 57.20% | 4.63% | 11.76% | -5.89% | -6.32% |
| **Index Rate of Return** | | 1.00 | | 1.62 | 6.49 | 0.53 | 1.33 | (0.67) | (0.72) |
| | | | **Return at CR per SC** | 14.84% | | 7.22% | | -6.30% | |
| | | | **Index ROR per SC** | 1.68 | | 0.82 | | (0.71) | |

## Revenue Allocation

| | | |
|---|---|---|
| Total Rate Year Incremental Revenue Requirement | $ | (1,191,358) |
| System Average Decrease (Percentage) | | -7.38% |

| | Revenues at Current Rates | Company Index ROR | Staff Index ROR | Allocation Factor | Base Revenue Increase | Adjustments | Total Increase | Rate Year Revenue Targets | % Difference |
|---|---|---|---|---|---|---|---|---|---|
| SC-1 Residential Sales | $ 10,132,038 | 1.08 | 1.68 | 1.20 | $ (897,625) | $ 43,429 | $ (854,196) | $ 9,277,842 | -8.43% |
| SC-1 Residential Transport | $ 247,769 | 1.08 | 1.68 | 1.20 | $ (21,951) | $ 1,062 | $ (20,889) | $ 226,881 | -8.43% |
| SC-2 Small Commercial Sales | $ 2,208,838 | 1.40 | 0.82 | 1.00 | $ (163,072) | $ 9,468 | $ (153,605) | $ 2,055,233 | -6.95% |
| SC-2 Small Commercial Transport | $ 1,442,823 | 1.40 | 0.82 | 1.00 | $ (106,520) | $ 6,184 | $ (100,335) | $ 1,342,487 | -6.95% |
| SC-2A Large Commercial Sales | $ 493,284 | 1.40 | 0.82 | 1.00 | $ (36,418) | $ 2,114 | $ (34,303) | $ 458,981 | -6.95% |
| SC-2A Large Commercial Transport | $ 403,075 | 1.40 | 0.82 | 1.00 | $ (29,758) | $ 1,728 | $ (28,030) | $ 375,044 | -6.95% |
| SC-3 Industrial Sales | $ 43,695 | (0.05) | (0.71) | - | $ - | | $ - | $ 43,695 | 0.00% |
| SC-3 Industrial Transport | $ 1,165,584 | (0.05) | (0.71) | - | $ - | | $ - | $ 1,165,584 | 0.00% |
| **Total** | $ 16,137,105 | | | | $ (1,255,343) | $ 63,985 | $ (1,191,358) | $ 14,945,747 | |

## Summary of Rates

| | Company | | Staff Recommended | Difference | |
|---|---|---|---|---|---|
| | Current Rates | Proposed Rates | Rate Year Rates | $ | % |
| **SC No.1 Residential Sales & Transport** | | | | | |
| Minimum Charge | $ 17.00 | $ 18.25 | $ 17.00 | $ - | 0.00% |
| Administration Fee | $ 125.00 | $ 125.00 | $ 125.00 | $ - | 0.00% |
| First 4 therms, per therm | $ - | $ - | $ - | $ - | 0.00% |
| Next 36 therms, per therm | $ 0.5296 | $ 0.6238 | $ 0.4382 | $ (0.0914) | -17.25% |
| Over 40 therms, per therm | $ 0.4843 | $ 0.6194 | $ 0.4382 | $ (0.0461) | -9.51% |
| **SC No.2 Small Commercial Sales & Transport** | | | | | |
| Minimum charge | $ 28.00 | $ 29.50 | $ 28.00 | $ - | 0.00% |
| Administration Fee | $ 125.00 | $ 125.00 | $ 125.00 | $ - | 0.00% |
| First 4 Therms | $ - | $ - | $ - | $ - | 0.00% |
| Next 66 Therms | $ 0.4856 | $ 0.4250 | $ 0.4442 | $ (0.0414) | -8.52% |
| Next 4,930 Therms | $ 0.2786 | $ 0.2950 | $ 0.2549 | $ (0.0237) | -8.52% |
| Over 45,000 Therms | $ 0.1686 | $ 0.1950 | $ 0.1542 | $ (0.0144) | -8.52% |
| Over 50,000 Therms | $ 0.1686 | $ 0.1950 | $ 0.1542 | $ (0.0144) | -8.52% |
| **SC No.2A Large Commercial Sales & Transport** | | | | | |
| Minimum charge | $ 190.00 | $ 200.00 | $ 190.00 | $ - | 0.00% |
| Administration Fee | $ 125.00 | $ 125.00 | $ 125.00 | $ - | 0.00% |
| First 4 Therms | $ - | $ - | $ - | $ - | 0.00% |
| Next 66 Therms | $ 0.2856 | $ 0.2950 | $ 0.2651 | $ (0.0205) | -7.18% |
| Next 4,930 Therms | $ 0.2856 | $ 0.2950 | $ 0.2651 | $ (0.0205) | -7.18% |
| Over 45,000 Therms | $ 0.0959 | $ 0.0950 | $ 0.0890 | $ (0.0069) | -7.18% |
| Over 50,000 Therms | $ 0.0671 | $ 0.0792 | $ 0.0623 | $ (0.0048) | -7.18% |
| **SC No.3 Industrial Sales & Transport** | | | | | |
| Minimum charge | $ 500.00 | $ 550.00 | $ 500.00 | $ - | 0.00% |
| Administrative Fee | $ 125.00 | $ 125.00 | $ 125.00 | $ - | 0.00% |
| Demand Charge | $ 5.63 | $ 6.00 | $ 5.63 | $ - | 0.00% |
| Volumetric Charge - First 10 therms | $ - | $ - | $ - | $ - | 0.00% |
| Volumetric Charge - First 12 times Contract Volume | $ 0.0080 | $ 0.0210 | $ 0.0080 | $ - | 0.00% |
| Volumetric Charge - Excess therms | $ 0.0080 | $ 0.0210 | $ 0.0080 | $ - | 0.00% |

## Total Bill Impacts

SC No. 1 - Residential Sales

| Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|
| 25 | $ 40.10 | $ 38.18 | $ (1.92) | -4.79% |
| 30 | $ 45.14 | $ 42.76 | $ (2.38) | -5.26% |
| 40 | $ 55.23 | $ 51.94 | $ (3.29) | -5.96% |
| 50 | $ 64.86 | $ 61.11 | $ (3.75) | -5.78% |
| 60 | $ 74.49 | $ 70.28 | $ (4.21) | -5.65% |
| 75 | $ 88.94 | $ 84.04 | $ (4.90) | -5.51% |
| 80 | $ 93.76 | $ 88.63 | $ (5.13) | -5.47% |
| 100 | $ 113.03 | $ 106.97 | $ (6.05) | -5.36% |
| 120 | $ 132.29 | $ 125.32 | $ (6.97) | -5.27% |
| 140 | $ 151.56 | $ 143.66 | $ (7.90) | -5.21% |
| 160 | $ 170.83 | $ 162.01 | $ (8.82) | -5.16% |
| 180 | $ 190.09 | $ 180.35 | $ (9.74) | -5.12% |
| 200 | $ 209.36 | $ 198.70 | $ (10.66) | -5.09% |
| 220 | $ 228.63 | $ 217.04 | $ (11.58) | -5.07% |
| 250 | $ 257.53 | $ 244.56 | $ (12.96) | -5.03% |
| 300 | $ 305.69 | $ 290.43 | $ (15.27) | -4.99% |
| 400 | $ 402.03 | $ 382.15 | $ (19.87) | -4.94% |
| 500 | $ 498.36 | $ 473.88 | $ (24.48) | -4.91% |
| 600 | $ 594.69 | $ 565.60 | $ (29.09) | -4.89% |
| 800 | $ 787.36 | $ 749.06 | $ (38.30) | -4.86% |
| 1,000 | $ 980.02 | $ 932.51 | $ (47.52) | -4.85% |

## Total Bill Impacts (Average Annual Use)

SC No. 1 - Residential Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|---|
| November | 89 | $ 102.04 | $ 96.51 | $ (5.53) | -5.42% |
| December | 134 | $ 145.95 | $ 138.33 | $ (7.63) | -5.23% |
| January | 190 | $ 200.21 | $ 189.98 | $ (10.22) | -5.11% |
| February | 170 | $ 180.32 | $ 171.05 | $ (9.27) | -5.14% |
| March | 148 | $ 159.05 | $ 150.80 | $ (8.25) | -5.19% |
| April | 94 | $ 107.66 | $ 101.86 | $ (5.80) | -5.38% |
| May | 42 | $ 57.62 | $ 54.21 | $ (3.40) | -5.91% |
| June | 20 | $ 34.72 | $ 33.29 | $ (1.43) | -4.12% |
| July | 13 | $ 28.42 | $ 27.56 | $ (0.86) | -3.03% |
| August | 16 | $ 30.69 | $ 29.63 | $ (1.07) | -3.48% |
| September | 13 | $ 27.61 | $ 26.82 | $ (0.79) | -2.85% |
| October | 43 | $ 57.91 | $ 54.50 | $ (3.42) | -5.90% |
| Annual Total | 972 | $ 1,132.21 | $ 1,074.54 | $ (57.67) | -5.09% |

## Base Delivery Bill Impacts

SC No. 1 - Residential Sales

| Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|
| 25 | $ 28.12 | $ 26.20 | $ (1.92) | -6.82% |
| 30 | $ 30.77 | $ 28.39 | $ (2.38) | -7.72% |
| 40 | $ 36.07 | $ 32.78 | $ (3.29) | -9.12% |
| 50 | $ 40.91 | $ 37.16 | $ (3.75) | -9.17% |
| 60 | $ 45.75 | $ 41.54 | $ (4.21) | -9.20% |
| 75 | $ 53.02 | $ 48.11 | $ (4.90) | -9.25% |
| 80 | $ 55.44 | $ 50.31 | $ (5.13) | -9.26% |
| 100 | $ 65.12 | $ 59.07 | $ (6.05) | -9.30% |
| 120 | $ 74.81 | $ 67.83 | $ (6.97) | -9.32% |
| 140 | $ 84.50 | $ 76.60 | $ (7.90) | -9.35% |
| 160 | $ 94.18 | $ 85.36 | $ (8.82) | -9.36% |
| 180 | $ 103.87 | $ 94.13 | $ (9.74) | -9.38% |
| 200 | $ 113.55 | $ 102.89 | $ (10.66) | -9.39% |
| 220 | $ 123.24 | $ 111.66 | $ (11.58) | -9.40% |
| 250 | $ 137.77 | $ 124.80 | $ (12.96) | -9.41% |
| 300 | $ 161.98 | $ 146.72 | $ (15.27) | -9.43% |
| 400 | $ 210.41 | $ 190.54 | $ (19.87) | -9.45% |
| 500 | $ 258.84 | $ 234.36 | $ (24.48) | -9.46% |
| 600 | $ 307.27 | $ 278.19 | $ (29.09) | -9.47% |
| 800 | $ 404.13 | $ 365.83 | $ (38.30) | -9.48% |
| 1,000 | $ 500.99 | $ 453.48 | $ (47.52) | -9.48% |

## Base Delivery Bill Impacts (Average Annual Use)

SC No. 1 - Residential Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|---|
| November | 74 | $ 52.65 | $ 47.78 | $ (4.87) | -9.24% |
| December | 131 | $ 80.36 | $ 72.86 | $ (7.50) | -9.34% |
| January | 179 | $ 103.56 | $ 93.85 | $ (9.71) | -9.38% |
| February | 165 | $ 96.79 | $ 87.72 | $ (9.07) | -9.37% |
| March | 131 | $ 80.01 | $ 72.54 | $ (7.47) | -9.34% |
| April | 97 | $ 63.55 | $ 57.64 | $ (5.90) | -9.29% |
| May | 46 | $ 38.79 | $ 35.25 | $ (3.55) | -9.15% |
| June | 20 | $ 25.57 | $ 24.09 | $ (1.48) | -5.78% |
| July | 13 | $ 21.91 | $ 21.06 | $ (0.85) | -3.86% |
| August | 28 | $ 29.97 | $ 27.73 | $ (2.24) | -7.47% |
| September | 28 | $ 29.92 | $ 27.69 | $ (2.23) | -7.45% |
| October | 58 | $ 44.84 | $ 40.71 | $ (4.12) | -9.20% |
| Annual Total | 972 | $ 667.91 | $ 608.93 | $ (58.98) | -8.83% |

## Total Bill Impacts

SC No. 2 - Small Commercial Sales

| Sales | Bills at Present | Bills at Rate Year Recommended | Difference | |
|---|---|---|---|---|
| therms | Rates | Rates | Amount | Percent |
| 100 | $ 116.31 | $ 112.87 | $ (3.44) | -2.96% |
| 200 | $ 192.07 | $ 186.26 | $ (5.82) | -3.03% |
| 300 | $ 267.84 | $ 259.65 | $ (8.19) | -3.06% |
| 400 | $ 343.60 | $ 333.04 | $ (10.56) | -3.07% |
| 500 | $ 419.36 | $ 406.43 | $ (12.94) | -3.08% |
| 600 | $ 495.13 | $ 479.82 | $ (15.31) | -3.09% |
| 700 | $ 570.89 | $ 553.21 | $ (17.68) | -3.10% |
| 800 | $ 646.65 | $ 626.59 | $ (20.06) | -3.10% |
| 900 | $ 722.42 | $ 699.98 | $ (22.43) | -3.11% |
| 1,000 | $ 798.18 | $ 773.37 | $ (24.80) | -3.11% |
| 1,500 | $ 1,176.99 | $ 1,140.32 | $ (36.67) | -3.12% |
| 2,000 | $ 1,555.81 | $ 1,507.27 | $ (48.54) | -3.12% |
| 2,500 | $ 1,934.63 | $ 1,874.22 | $ (60.41) | -3.12% |
| 3,000 | $ 2,313.44 | $ 2,241.16 | $ (72.28) | -3.12% |
| 4,000 | $ 3,071.07 | $ 2,975.06 | $ (96.01) | -3.13% |
| 5,000 | $ 3,828.70 | $ 3,708.96 | $ (119.75) | -3.13% |
| 10,000 | $ 7,078.66 | $ 6,886.09 | $ (192.58) | -2.72% |
| 20,000 | $ 13,554.98 | $ 13,218.76 | $ (336.22) | -2.48% |
| 30,000 | $ 20,031.29 | $ 19,551.43 | $ (479.86) | -2.40% |
| 40,000 | $ 26,507.60 | $ 25,884.10 | $ (623.50) | -2.35% |
| 50,000 | $ 32,983.91 | $ 32,216.77 | $ (767.15) | -2.33% |
| 70,000 | $ 45,924.74 | $ 44,871.31 | $ (1,053.42) | -2.29% |
| 100,000 | $ 65,353.68 | $ 63,869.32 | $ (1,484.35) | -2.27% |

## Total Bill Impacts (Average Annual Use)

SC No. 2 - Small Commercial Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Percent |
|---|---|---|---|---|---|
| November | 487 | $ 409.52 | $ 396.89 | $ (12.63) | -3.08% |
| December | 803 | $ 649.28 | $ 629.14 | $ (20.14) | -3.10% |
| January | 1,123 | $ 891.39 | $ 863.66 | $ (27.73) | -3.11% |
| February | 1,177 | $ 932.02 | $ 903.02 | $ (29.00) | -3.11% |
| March | 1,009 | $ 804.87 | $ 779.85 | $ (25.01) | -3.11% |
| April | 567 | $ 470.32 | $ 455.79 | $ (14.53) | -3.09% |
| May | 353 | $ 307.68 | $ 298.24 | $ (9.44) | -3.07% |
| June | 228 | $ 213.21 | $ 206.73 | $ (6.48) | -3.04% |
| July | 154 | $ 157.10 | $ 152.38 | $ (4.72) | -3.00% |
| August | 287 | $ 257.66 | $ 249.79 | $ (7.87) | -3.05% |
| September | 150 | $ 153.91 | $ 149.29 | $ (4.62) | -3.00% |
| October | 251 | $ 230.89 | $ 223.86 | $ (7.03) | -3.05% |
| Annual Total | 6,588 | $ 5,477.85 | $ 5,308.65 | $ (169.20) | -3.09% |

## Base Delivery Bill Impacts

SC No. 2 - Small Commercial Sales

| Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Percent |
|---|---|---|---|---|
| 100 | $ 68.41 | $ 64.96 | $ (3.44) | -5.03% |
| 200 | $ 96.27 | $ 90.45 | $ (5.82) | -6.04% |
| 300 | $ 124.13 | $ 115.94 | $ (8.19) | -6.60% |
| 400 | $ 151.99 | $ 141.42 | $ (10.56) | -6.95% |
| 500 | $ 179.85 | $ 166.91 | $ (12.94) | -7.19% |
| 600 | $ 207.71 | $ 192.40 | $ (15.31) | -7.37% |
| 700 | $ 235.57 | $ 217.88 | $ (17.68) | -7.51% |
| 800 | $ 263.43 | $ 243.37 | $ (20.06) | -7.61% |
| 900 | $ 291.29 | $ 268.86 | $ (22.43) | -7.70% |
| 1,000 | $ 319.15 | $ 294.34 | $ (24.80) | -7.77% |
| 1,500 | $ 458.45 | $ 421.77 | $ (36.67) | -8.00% |
| 2,000 | $ 597.75 | $ 549.21 | $ (48.54) | -8.12% |
| 2,500 | $ 737.05 | $ 676.64 | $ (60.41) | -8.20% |
| 3,000 | $ 876.35 | $ 804.07 | $ (72.28) | -8.25% |
| 4,000 | $ 1,154.95 | $ 1,058.93 | $ (96.01) | -8.31% |
| 5,000 | $ 1,433.55 | $ 1,313.80 | $ (119.75) | -8.35% |
| 10,000 | $ 2,288.35 | $ 2,095.77 | $ (192.58) | -8.42% |
| 20,000 | $ 3,974.35 | $ 3,638.13 | $ (336.22) | -8.46% |
| 30,000 | $ 5,660.35 | $ 5,180.49 | $ (479.86) | -8.48% |
| 40,000 | $ 7,346.35 | $ 6,722.85 | $ (623.50) | -8.49% |
| 50,000 | $ 9,032.35 | $ 8,265.20 | $ (767.15) | -8.49% |
| 70,000 | $ 12,392.55 | $ 11,339.12 | $ (1,053.42) | -8.50% |
| 100,000 | $ 17,450.55 | $ 15,966.20 | $ (1,484.35) | -8.51% |

## Base Delivery Bill Impacts (Average Annual Use)

SC No. 2 - Small Commercial Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Percent |
|---|---|---|---|---|---|
| November | 711 | $ 238.51 | $ 220.58 | $ (17.94) | -7.52% |
| December | 895 | $ 289.94 | $ 267.62 | $ (22.32) | -7.70% |
| January | 1,192 | $ 372.76 | $ 343.39 | $ (29.37) | -7.88% |
| February | 1,035 | $ 328.99 | $ 303.35 | $ (25.64) | -7.79% |
| March | 691 | $ 232.97 | $ 215.50 | $ (17.46) | -7.50% |
| April | 636 | $ 217.72 | $ 201.56 | $ (16.16) | -7.42% |
| May | 404 | $ 153.05 | $ 142.39 | $ (10.65) | -6.96% |
| June | 154 | $ 83.33 | $ 78.62 | $ (4.71) | -5.66% |
| July | 134 | $ 77.95 | $ 73.69 | $ (4.26) | -5.46% |
| August | 188 | $ 93.01 | $ 87.47 | $ (5.54) | -5.95% |
| September | 170 | $ 88.03 | $ 82.92 | $ (5.11) | -5.81% |
| October | 378 | $ 145.74 | $ 135.71 | $ (10.03) | -6.88% |
| Annual Total | 6,588 | $ 2,321.99 | $ 2,152.79 | $ (169.20) | -7.29% |

## Total Bill Impacts

SC No. 2A - Large Commercial Sales

| Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|
| 100 | $ 265.32 | $ 263.35 | $ (1.97) | -0.74% |
| 200 | $ 341.78 | $ 337.76 | $ (4.02) | -1.18% |
| 300 | $ 418.25 | $ 412.17 | $ (6.07) | -1.45% |
| 400 | $ 494.71 | $ 486.58 | $ (8.13) | -1.64% |
| 500 | $ 571.17 | $ 561.00 | $ (10.18) | -1.78% |
| 600 | $ 647.64 | $ 635.41 | $ (12.23) | -1.89% |
| 700 | $ 724.10 | $ 709.82 | $ (14.28) | -1.97% |
| 800 | $ 800.56 | $ 784.23 | $ (16.33) | -2.04% |
| 900 | $ 877.03 | $ 858.64 | $ (18.39) | -2.10% |
| 1,000 | $ 953.49 | $ 933.05 | $ (20.44) | -2.14% |
| 1,500 | $ 1,335.80 | $ 1,305.11 | $ (30.70) | -2.30% |
| 2,000 | $ 1,718.12 | $ 1,677.16 | $ (40.96) | -2.38% |
| 2,500 | $ 2,100.44 | $ 2,049.22 | $ (51.22) | -2.44% |
| 3,000 | $ 2,482.75 | $ 2,421.27 | $ (61.48) | -2.48% |
| 4,000 | $ 3,247.38 | $ 3,165.38 | $ (82.00) | -2.53% |
| 5,000 | $ 4,012.01 | $ 3,909.50 | $ (102.52) | -2.56% |
| 10,000 | $ 6,893.38 | $ 6,755.93 | $ (137.45) | -1.99% |
| 20,000 | $ 12,642.70 | $ 12,436.34 | $ (206.36) | -1.63% |
| 30,000 | $ 18,392.01 | $ 18,116.75 | $ (275.26) | -1.50% |
| 40,000 | $ 24,141.32 | $ 23,797.16 | $ (344.16) | -1.43% |
| 50,000 | $ 29,890.64 | $ 29,477.57 | $ (413.07) | -1.38% |
| 70,000 | $ 40,806.55 | $ 40,297.54 | $ (509.01) | -1.25% |
| 100,000 | $ 57,190.49 | $ 56,536.85 | $ (653.64) | -1.14% |
| 300,000 | $ 166,416.74 | $ 164,798.88 | $ (1,617.86) | -0.97% |

## Total Bill Impacts (Average Annual Use)

SC No. 2A - Large Commercial Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|---|
| November | 103,977 | $ 59,362.68 | $ 58,689.86 | $ (672.82) | -1.13% |
| December | 127,369 | $ 72,137.47 | $ 71,351.88 | $ (785.59) | -1.09% |
| January | 139,378 | $ 78,696.14 | $ 77,852.65 | $ (843.49) | -1.07% |
| February | 110,030 | $ 62,668.45 | $ 61,966.45 | $ (702.00) | -1.12% |
| March | 108,550 | $ 61,859.92 | $ 61,165.06 | $ (694.86) | -1.12% |
| April | 69,138 | $ 40,336.00 | $ 39,831.15 | $ (504.85) | -1.25% |
| May | 44,063 | $ 26,477.18 | $ 26,105.02 | $ (372.16) | -1.41% |
| June | 32,096 | $ 19,596.91 | $ 19,307.21 | $ (289.70) | -1.48% |
| July | 30,760 | $ 18,828.84 | $ 18,548.35 | $ (280.50) | -1.49% |
| August | 31,355 | $ 19,171.31 | $ 18,886.71 | $ (284.60) | -1.48% |
| September | 45,485 | $ 27,294.98 | $ 26,913.02 | $ (381.96) | -1.40% |
| October | 77,586 | $ 44,949.24 | $ 44,403.67 | $ (545.58) | -1.21% |
| Annual Total | 919,788 | $ 531,379.13 | $ 525,021.03 | $ (6,358.10) | -1.20% |

## Base Delivery Bill Impacts

SC No. 2A - Large Commercial Sales

| Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|
| 100 | $ 217.42 | $ 215.45 | $ (1.97) | -0.91% |
| 200 | $ 245.98 | $ 241.96 | $ (4.02) | -1.64% |
| 300 | $ 274.54 | $ 268.46 | $ (6.07) | -2.21% |
| 400 | $ 303.10 | $ 294.97 | $ (8.13) | -2.68% |
| 500 | $ 331.66 | $ 321.48 | $ (10.18) | -3.07% |
| 600 | $ 360.22 | $ 347.99 | $ (12.23) | -3.40% |
| 700 | $ 388.78 | $ 374.50 | $ (14.28) | -3.67% |
| 800 | $ 417.34 | $ 401.00 | $ (16.33) | -3.91% |
| 900 | $ 445.90 | $ 427.51 | $ (18.39) | -4.12% |
| 1,000 | $ 474.46 | $ 454.02 | $ (20.44) | -4.31% |
| 1,500 | $ 617.26 | $ 586.56 | $ (30.70) | -4.97% |
| 2,000 | $ 760.06 | $ 719.10 | $ (40.96) | -5.39% |
| 2,500 | $ 902.86 | $ 851.64 | $ (51.22) | -5.67% |
| 3,000 | $ 1,045.66 | $ 984.18 | $ (61.48) | -5.88% |
| 4,000 | $ 1,331.26 | $ 1,249.26 | $ (82.00) | -6.16% |
| 5,000 | $ 1,616.86 | $ 1,514.34 | $ (102.52) | -6.34% |
| 10,000 | $ 2,103.07 | $ 1,965.62 | $ (137.45) | -6.54% |
| 20,000 | $ 3,062.07 | $ 2,855.71 | $ (206.36) | -6.74% |
| 30,000 | $ 4,021.07 | $ 3,745.81 | $ (275.26) | -6.85% |
| 40,000 | $ 4,980.07 | $ 4,635.91 | $ (344.16) | -6.91% |
| 50,000 | $ 5,939.07 | $ 5,526.00 | $ (413.07) | -6.96% |
| 70,000 | $ 7,274.36 | $ 6,765.35 | $ (509.01) | -7.00% |
| 100,000 | $ 9,287.36 | $ 8,633.72 | $ (653.64) | -7.04% |

## Base Delivery Bill Impacts (Average Annual Use)

SC No. 2A - Large Commercial Sales

| Month | Sales therms | Bills at Present Rates | Bills at Rate Year Recommended Rates | Difference Amount | Difference Percent |
|---|---|---|---|---|---|
| November | 102,355 | $ 9,445.37 | $ 8,780.38 | $ (664.99) | -7.04% |
| December | 130,176 | $ 11,312.15 | $ 10,513.03 | $ (799.12) | -7.06% |
| January | 143,399 | $ 12,199.45 | $ 11,336.58 | $ (862.87) | -7.07% |
| February | 115,507 | $ 10,327.86 | $ 9,599.46 | $ (728.40) | -7.05% |
| March | 108,682 | $ 9,869.95 | $ 9,174.45 | $ (695.50) | -7.05% |
| April | 62,815 | $ 6,792.23 | $ 6,317.87 | $ (474.37) | -6.98% |
| May | 39,693 | $ 4,950.66 | $ 4,608.61 | $ (342.05) | -6.91% |
| June | 34,607 | $ 4,462.86 | $ 4,155.85 | $ (307.00) | -6.88% |
| July | 34,788 | $ 4,480.22 | $ 4,171.97 | $ (308.25) | -6.88% |
| August | 28,039 | $ 3,833.00 | $ 3,571.25 | $ (261.75) | -6.83% |
| September | 39,970 | $ 4,977.16 | $ 4,633.21 | $ (343.96) | -6.91% |
| October | 79,758 | $ 7,929.09 | $ 7,373.04 | $ (556.05) | -7.01% |
| Annual Total | 919,788 | $ 90,580.01 | $ 84,235.70 | $ (6,344.31) | -7.00% |

## Base Delivery Bill Impacts

SC No. 3 - Industrial Transportation

| Customer | Usage per month (Therms) | Daily Demand (Therms) | Bill at Present Rates | Bill at Rate Year Recommended Rates | Difference | Percent Difference |
|---|---|---|---|---|---|---|
| FT 1 | 137,922 | 1,888 | $ 12,232.74 | $ 12,232.74 | $ - | 0.00% |
| FT 2 | 700,754 | 4,500 | $ 31,440.95 | $ 31,440.95 | $ - | 0.00% |
| FT 3 | 226,183 | 750 | $ 6,531.88 | $ 6,531.88 | $ - | 0.00% |
| FT 4 | 319,566 | 1,310 | $ 10,431.75 | $ 10,431.75 | $ - | 0.00% |
| FT 5 | 300,986 | 1,800 | $ 13,041.81 | $ 13,041.81 | $ - | 0.00% |
| FT 6 | 303,772 | 1,000 | $ 8,560.10 | $ 8,560.10 | $ - | 0.00% |
| FT 7 | 70,336 | 250 | $ 2,470.11 | $ 2,470.11 | $ - | 0.00% |
| FT 8 | 70,931 | 420 | $ 3,431.97 | $ 3,431.97 | $ - | 0.00% |
| FT 9 | 96,795 | 490 | $ 4,032.98 | $ 4,032.98 | $ - | 0.00% |
| FT 10 | 134,954 | 600 | $ 4,957.55 | $ 4,957.55 | $ - | 0.00% |

**Surcharge Targets**

| Surcharge Name | | Staff Targets |
|---|---|---|
| **MFC** | | |
| Gas Procurement Salary | $ | 90,915 |
| Uncollectibles* | $ | 60,553 |
| Gas Control | $ | 97,917 |
| Gas in Storage* | $ | 59,086 |
| Total | $ | 308,472 |
| **DRA** | | |
| Gas Procurement Salary | $ | 45,458 |
| Uncollectibles* | $ | 19,820 |
| Gas Control | $ | 97,917 |
| Gas in Storage* | $ | 19,389 |
| Total | $ | 182,584 |
| **RDM** | | |
| RDM SC No. 1 | $ | 9,504,723 |
| RDM SC Nos. 2 & 2A | $ | 4,231,746 |
| Total | $ | 13,736,469 |
| **IIC** | | |
| Total | $ | 847,243 |

*Figures shown are for illustrative purposes. Actual values will depend on actual costs/balances.

Liberty Utilities (St. Lawrence Gas) Corp.
Lost and Unaccounted For Gas (Actual)

| | Receipts | Deliveries | LAUF | LAUF % |
|---|---|---|---|---|
| Sep-19 | 350,305.4 | 325,693.9 | 24,611.5 | 7.03% |
| Oct-19 | 501,306.1 | 466,559.9 | 34,746.2 | 6.93% |
| Nov-19 | 798,790.5 | 613,549.1 | 185,241.4 | 23.19% |
| Dec-19 | 920,554.3 | 887,947.8 | 32,606.5 | 3.54% |
| Jan-20 | 978,949.5 | 964,979.3 | 13,970.2 | 1.43% |
| Feb-20 | 921,966.1 | 956,756.8 | (34,790.7) | -3.77% |
| Mar-20 | 781,075.7 | 840,554.4 | (59,478.7) | -7.61% |
| Apr-20 | 581,512.8 | 643,709.5 | (62,196.7) | -10.70% |
| May-20 | 428,171.3 | 478,783.2 | (50,611.9) | -11.82% |
| Jun-20 | 294,870.0 | 340,368.6 | (45,498.6) | -15.43% |
| Jul-20 | 270,117.6 | 298,155.9 | (28,038.3) | -10.38% |
| Aug-20 | 320,091.6 | 304,130.8 | 15,960.8 | 4.99% |
| **Total** | **7,147,711.0** | **7,121,189.2** | **26,521.8** | **0.37%** |
| Sep-20 | 367,298.8 | 296,337.8 | 70,961.0 | 19.32% |
| Oct-20 | 542,296.3 | 444,862.6 | 97,433.7 | 17.97% |
| Nov-20 | 628,922.7 | 513,223.0 | 115,699.7 | 18.40% |
| Dec-20 | 874,704.5 | 921,072.4 | (46,368.0) | -5.30% |
| Jan-21 | 994,766.2 | 911,420.8 | 83,345.4 | 8.38% |
| Feb-21 | 911,763.0 | 966,044.3 | (54,281.3) | -5.95% |
| Mar-21 | 818,127.0 | 910,926.6 | (92,799.6) | -11.34% |
| Apr-21 | 562,316.5 | 679,720.2 | (117,403.7) | -20.88% |
| May-21 | 435,664.7 | 455,103.0 | (19,438.3) | -4.46% |

**INCLUDING 2024, (zero'd out)**

| | |
|---|---|
| 5 year stats Aug 2020-2024 | |
| Mean LAUF % | 0.2260% |
| Std Deviation | 0.1799% |
| 2 Std Deviation | 0.3599% |
| | |
| Target & Dead Band | |
| LAUF% Target | 0.2260% |
| Upper Band (Mean + 2 SD) | 0.5859% |
| Lower Band (Mean - 2 SD) | -0.1339% |
| | |
| Target & Dead Band | |
| LAUF% Target | 0.2260% |
| Upper Band (Mean + 4 SD) | 0.9458% |
| Lower Band (0) | 0 |

| | | | | |
|---|---|---|---|---|
| Jun-21 | 340,226.3 | 361,393.4 | (21,167.1) | -6.22% |
| Jul-21 | 338,691.0 | 338,364.7 | 326.3 | 0.10% |
| Aug-21 | 336,387.3 | 338,116.8 | (1,729.5) | -0.51% |
| **Total** | **7,151,164.3** | **7,136,585.6** | **14,578.6** | **0.20%** |

| | | | | |
|---|---|---|---|---|
| Sep-21 | 345,619.1 | 335,474.4 | 10,144.7 | 2.94% |
| Oct-21 | 471,035.5 | 433,976.8 | 37,058.7 | 7.87% |
| Nov-21 | 841,004.1 | 724,030.3 | 116,973.8 | 13.91% |
| Dec-21 | 859,964.0 | 792,194.0 | 67,770.0 | 7.88% |
| Jan-22 | 1,181,982.3 | 975,931.4 | 206,050.9 | 17.43% |
| Feb-22 | 956,858.6 | 1,014,657.3 | (57,798.7) | -6.04% |
| Mar-22 | 860,747.6 | 982,325.1 | (121,577.5) | -14.12% |
| Apr-22 | 622,253.7 | 702,995.7 | (80,742.0) | -12.98% |
| May-22 | 409,457.9 | 482,480.8 | (73,022.9) | -17.83% |
| Jun-22 | 371,046.3 | 414,525.1 | (43,478.8) | -11.72% |
| Jul-22 | 333,559.5 | 321,808.5 | 11,751.0 | 3.52% |
| Aug-22 | 334,086.2 | 373,906.8 | (39,820.6) | -11.92% |
| **Total** | **7,587,614.8** | **7,554,306.2** | **33,308.6** | **0.44%** |

| | | | | |
|---|---|---|---|---|
| Sep-22 | 379,194.8 | 279,897.1 | 99,297.7 | 26.19% |
| Oct-22 | 527,008.6 | 528,221.5 | (1,212.9) | -0.23% |
| Nov-22 | 668,683.4 | 530,207.6 | 138,475.8 | 20.71% |
| Dec-22 | 882,328.6 | 717,364.3 | 164,964.3 | 18.70% |
| Jan-23 | 965,697.5 | 914,800.1 | 50,897.5 | 5.27% |
| Feb-23 | 896,235.1 | 922,942.8 | (26,707.7) | -2.98% |
| Mar-23 | 865,715.8 | 987,127.5 | (121,411.7) | -14.02% |
| Apr-23 | 573,409.9 | 665,976.7 | (92,566.8) | -16.14% |
| May-23 | 557,180.5 | 648,574.7 | (91,394.2) | -16.40% |
| Jun-23 | 335,871.9 | 423,586.7 | (87,714.8) | -26.12% |

| | | | | |
|---|---|---|---|---|
| Jul-23 | 329,700.8 | 312,342.3 | 17,358.5 | 5.26% |
| Aug-23 | 334,929.1 | 376,036.5 | (41,107.4) | -12.27% |
| **Total** | **7,315,956.1** | **7,307,077.8** | **8,878.3** | **0.12%** |

| | | | | |
|---|---|---|---|---|
| Sep-23 | 380,797.2 | 348,743.2 | 32,054.0 | 8.42% |
| Oct-23 | 496,765.1 | 417,130.2 | 79,634.9 | 16.03% |
| Nov-23 | 737,152.5 | 635,497.0 | 101,655.5 | 13.79% |
| Dec-23 | 835,591.7 | 607,270.5 | 228,321.2 | 27.32% |
| Jan-24 | 992,275.2 | 1,101,048.2 | (108,773.0) | -10.96% |
| Feb-24 | 826,210.1 | 842,737.4 | (16,527.3) | -2.00% |
| Mar-24 | 775,852.7 | 749,143.7 | 26,709.0 | 3.44% |
| Apr-24 | 593,287.1 | 689,964.7 | (96,677.6) | -16.30% |
| May-24 | 480,038.5 | 648,044.9 | (168,006.4) | -35.00% |
| Jun-24 | 361,817.4 | 395,914.6 | (34,097.2) | -9.42% |
| Jul-24 | 337,632.8 | 383,207.6 | (45,574.8) | -13.50% |
| Aug-24 | 331,126.6 | 332,014.9 | (888.3) | -0.27% |
| **Total** | **7,148,547.0** | **7,150,716.9** | **(2,169.8)** | **-0.03%** |

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NYS DEPARTMENT OF PUBLIC SERVICE

# STAFF WHITE PAPER ON
# LOST AND UNACCOUNTED FOR (LAUF) GAS

# Contents

# EXECUTIVE SUMMARY

The purpose of this White Paper is to revisit the issue of the recovery of the cost of lost and unaccounted for (LAUF) gas. The White Paper addresses proposals for standardizing the annual LAUF gas calculation methodology for all NY utilities and updating the current LAUF incentive mechanism within existing regulations.[1] Staff anticipates that the recommendations developed in this white paper will guide the treatment of LAUF in future rate cases.

With respect to the incentive mechanism we have examined:

- Whether the incentive to reduce LAUF provided by the fixed factor of adjustment has reached its economically justifiable limit and, if so, is there ways to re-structure the fixed factor of adjustment mechanism which maintains the gains in LAUF reduction thus far realized without backsliding.

- Ways of eliminating the financial swings caused by year to year variation in the commodity cost of gas when a utilities' annual factor of adjustment is relatively stable.

- And finally, re-structuring the fixed factor of adjustment mechanism in a way that alternative suppliers of the gas commodity are able to arrange for delivery of the appropriate level of gas supplies to serve their customers.

As part of our examination, information requests were sent to all the major gas local distribution companies (LDCs) including Central Hudson Gas & Electric Corporation (CHG&E), Consolidated Edison Company of New York, Inc. (Con Edison), KeySpan Gas East Corporation (KEDLI), National Fuel Gas Distribution Corporation (NFGDC), New York state Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation (NMPC), Orange and Rockland Utilities, Inc. (O&R), Rochester Gas and Electric Corporation (RG&E), and The Brooklyn Union Gas Company dba KeySpan Gas Corporation of NY (KEDNY) to get a comprehensive view of each LDC's overall

[1] 16 NYCRR § 720-6.5

pipeline system, LAUF calculation, and billing system. The Staff Team also met with each of the LDCs individually to discuss the responses to all the information requests.

Staff's recommends that the LAUF factor calculation and incentive be standardized based on total city gate receipts and total system deliveries. The only permitted adjustment to the receipts and deliveries should be the exclusion of dedicated lines where one city gate serves one customer. Further a dead band should be established around the factor of adjustment for the LAUF incentive to recognize the inherent uncertainty and natural variability in gas measurement. Lastly, the annual inequity of the over or under delivery of gas to serve firm transportation due to the fixed factor of adjustment being greater than or less than the actual factor of adjustment should be eliminated. The elimination of this inequity is to be achieved by surcharging or refunding all customers for the over or under delivered gas associated with the disparity at the LDC's average commodity cost of gas.

# BACKGROUND

The Purchased Gas Adjustment (changed to Gas Adjustment Clause (GAC) in 1973) was first approved by the New York Public Service Commission in 1953. The adjustment was designed so that variations in the cost of purchased gas could be reflected on the customers' bills without the necessity of filing new rate schedules. In 1975, an annual reconciliation was instituted to insure that the GAC recoveries equaled the GAC purchased gas costs.

Prior to 1990, LDCs in New York were permitted full recovery of actual gas expense, regardless of the disparity between the amount of gas metered into the LDC's system and the amount of gas metered out of the LDC's system. This disparity is referred to as lost and unaccounted for (LAUF) gas or simply LAUF.

In Case 21656, the Commission implemented new rules and regulations (effective September 20, 1990) concerning the recovery of actual purchased gas expense, to be adopted and become effective December 1, 1990. The new rules and regulations adopted included the creation of a factor of adjustment, fixed for the annual reconciliation, such that the cost of gas is adjusted to reflect a level of purchased gas commensurate with the actual sales and the fixed factor of adjustment. The regulations required that the fixed

factor of adjustment be determined in rate proceedings and continue until a new factor is established in the next rate proceeding.

In 1999, the GAC rules were further revised by the Commission in Case 97-G-1178 (effective April 13, 1999) to reflect the restructuring of the gas industry, to clarify some existing rules, and to reflect more accurate. As a consequence, customers buying their gas supplies from marketers were subject to similar rules regarding the recovery of LAUF and the fixed factor of adjustment was also applied to volumes brought on to the LDCs' systems by their marketers.

The establishment of the fixed factor of adjustment in the annual reconciliation of gas costs created an incentive to the LDCs to reduce LAUF since the fixed factor of adjustment set an allowed level of gas purchases based on the amount of gas sales, regardless the amount of gas purchases. To the extent that the actual gas purchases exceeded the allowed gas purchases, the LDC absorbed the cost of the extra gas purchases. Conversely, to the extent that the allowed purchases exceeded the actual purchases, the LDCs kept the gas cost recoveries for those purchases that were not necessary. With the advent of the fixed factor of adjustment, LDCs realized a gain from every reduction in LAUF through either a reduced penalty, when the actual factor of adjustment exceeded the fixed factor of adjustment, or an increased benefit, when the actual factor of adjustment was less than the fixed factor of adjustment.

The impact of the incentive, from the creation of the factor of adjustment, can be observed when the average factor of adjustment is compared between 1997 and today. In 1997, the factor of adjustment averaged 1.0348 for seven gas LDCs and currently the factor of adjustment averages 1.0183 for those same seven gas utilities. The reduction from 1.0348 to 1.0138, when applied to the $3 billion of cost for gas provided last year by all the gas LDCs, translates to an annual savings of $48 million in gas costs for the full service customers of the LDCs and equivalent savings in gas costs for the customers of marketers.

Generally the factor of adjustment has been set based on historical multi-year averages. Recently, the historical multi-year averages have become relatively stable with any year to year variation being a consequence of how the data is collected. This trend

suggests that the LDCs have or are approaching the optimum performance in minimizing LAUF as provided for in rates which limits any potential incentive.

However, the inherent year to year variation in the fix factor of adjustment is a source of financial volatility rather than an incentive. This variation of the measured factor of adjustment creates significant yearly financial swings while the net LAUF benefit/penalty over the total period is de minimis.

A primary goal of a revised approach to LAUF is to remove the financial volatility while retaining the financial incentive to minimize LAUF. Removing the financial volatility requires decoupling the LAUF incentive from the natural variability of LAUF measurement.

Natural variability is defined as the variation in LAUF measurement that would exist with zero LAUF. That variability includes both the offset of the average from zero and the standard deviation of the measurements around that average.

The natural variability of each LDC is a function of each LDC's system and how it calculates LAUF. We will begin our investigation with an examination of each LDC's system and then follow with a discussion of differences among the LDCs in LAUF calculation.

# LDC SYSTEM SUMMARY

Each LDC's system is unique in its connection to the interstate pipelines, its system's history and age, and its customer base. All these system characteristics affect LAUF and therefore staff examined the differences between the LDCs. Table 1 below lists the information regarding the city gates, local production and dedicated line customers on each LDC gas distribution system. For the purposes of this summary, local production stations are separated as a source of supply. All other supply sources are considered as a city gate station.

**Table 1.** LDC's pipeline information

| Company | City Gates | Local Production Stations | Dedicated Lines |
|---|---|---|---|
| CHG&E | 5 | 2* | - |
| Con Edison | 8 | - | - |
| KEDLI | 3** | - | - |
| KEDNY | 3 | 1*** | - |
| NFGDC | 133 | 888 | 5 |
| NMPC | 19 | - | 2 |
| NYSEG | 75 | 6 | - |
| O&R | 5 | - | - |
| RG&E | 13 | 2 | - |

* The local production of CHG&E is from LPG plants. Both are in process of retirement.
**City Gates in KEDLI System includes Goethals, Narrows and Grasmere. City Gates in KEDNY system includes South Commack, Long Beach, and Northport.
*** APC Landfill is the supply source of additional gas coming into KEDNY's system.

As can be seen in Table 1, NFGDC has the most complex system in terms of receipt points with over 133 city gates and 888 local gas producing stations providing supply into its gas distribution system. NYSEG has the most widespread system with 75 city gates distributed across the state serving numerous discrete territories. All other LDCs have less than 25 city gates serving their respective territories.

NFG and NMPC have five and two dedicated line customers (single customers fed directly from an interstate pipeline) respectively. No other NY LDCs have dedicated line customers.

Con Edison, KEDLI, and KEDNY have the most complex system in terms of operation as the three companies can be considered as distribution subsystems of the New York facility with an aggregation of 13 transfer metering stations, 10 city gate stations, one internal supply from landfill gas, and three peaking LNG plants. The transferring metering stations and the LDCs that use gas from these stations are listed in Table 2.

**Table 2. Transfer metering and gate stations for Companies part of the NY Facilities System.**

| | KEDNY | KEDLI | CON-Edison |
|---|---|---|---|
| **Transfer Metering Stations - Exchange Gas between Companies** | | | |
| Con Ed & KEDNY | Newtown | - | Newtown |
| KEDNY & KEDLI | Cambria | Cambria | - |
| Con Ed & KEDLI | - | Lake Success | Lake Success |
| KEDLI to KEDNY | Meadowmere Meter | | |
| **Gate Stations - One Company Supplies Gas from a NYFS High Pressure Transmission Main to Another Company** | | | |
| Con Ed to KEDNY | Bowery Bay | - | - |
| Con Ed to KEDNY | DOT | - | - |
| Con Ed to KEDNY | Grace #1 | - | - |
| Con Ed to KEDNY | Grace #2 | - | - |
| Con Ed to KEDNY | La Guardia Gate | - | - |
| Con Ed to KEDNY | La Guardia Gate Turbine | - | - |
| Con Ed to KEDNY | Flushing Meadow | - | - |
| KEDNY to Con Ed | - | - | Gov Island #1 |
| KEDNY to Con Ed | - | - | Gov Island #2 |

Con Edison, KEDLI, and KEDNY operate the joint New York facilities which are the transmission system which permits the LDCs to deliver natural gas to any of the LDCs' 13 transfer metering stations and 10 city gate stations.

As can be seen in Table 2, there are three metered bidirectional interconnects which provide gas exchange between the three LDCs as determined by system demands. At any moment, these three interconnects can be a receipt point or delivery point for the three LDCs. Also, there are approximately ten metered one-way interconnects for areas served by one LDC but supplied by one of the other LDCs.

For the three LDCs there is no metering between the transmission system and the LDCs' distribution systems. As a consequence, the transmission system LAUF is estimated by the LDCs. The three LDCs assume a transmission LAUF of zero on the NY Facilities system. Con Edison makes the same assumption for all customers served from their transmission system. For KEDNY and KEDLI, transmission LAUF is set to the negotiated level, which is approximately 1%.

NFGDC system is unique with the 888 local gas producing stations supplying its distribution system. Likewise NFGDC's 133 city gates might seem unique in its high number, but the high number is a consequence of its transmission system being an interstate pipeline, in most instances National Fuel Supply. NFGDC's 133 city gates are comparable to Con Ed's 82 or so regulator stations off their transmission system.

NYSEG is unique because its system is comprised of numerous isolated systems across New York State. Its 75 city gates are located as far north as Plattsburgh, as far south as Goshen, as far west as Lockport, and as far east as Brewster. Gas is supplied to NYSEG's system from the interstate pipeline and other New York State LDCs and local producers.

CHG&E, KEDNY, KEDLI, OR, and RG&E's systems are all similar in nature. A limited number of city gates provide supply to contiguous, compact service areas. The distribution systems of these LDCs are typically branched off the interstate pipelines.

**Calculation of LAUF**

*Loss Percentage versus Factor of Adjustment (FOA) Percentage*[2]

The calculation of LAUF involves the total volume of gas entering into and being disposed of on the LDC's distribution system. All LDCs report LAUF as a percentage. That percentage is calculated in two ways, NYSEG and NMPC divide LAUF by disposition to get their reported percentage and all other LDCs divide LAUF by send out[3] to get their reported percentage. While both percentages can be used to calculate the factor of adjustment, the two percentages are not the same and require different formulas to obtain the corresponding factor of adjustment.

[2] LAUF percentage equals 1 subtracted from 1 minus the loss percentage divided into 1.
[3] Total send out for LAUF calculation is limited to distribution send out for CON EDISON, KEDNY and KEDLI as a result of NY facilities.

For clarity, the two percentages should be distinguishable by name. For consistency, only one percentage should be used for reporting purposes. LAUF divided by send out shall be referred to as loss percentage and LAUF divided by dispositions shall be referred to as FOA percentage. FOA percentage shall be the reported percentage as the FOA percentage is more directly related to the factor of adjustment. The factor of adjustment equals 1 plus the FOA percentage[4].

*Determination of LAUF*

Each LDC has a distinct approach for determining LAUF. Within their distinct approaches, each LDC makes various adjustments to the total send out and total disposition to arrive at the send out and disposition used in their LAUF calculation. Table 5 below lists the adjustments made by each LDC to determine their send out and disposition as part of their LAUF calculation.

[4] The factor of adjustment equals 1divided by the difference of 1 minus the loss percentage.

**Table 3.** Adjustments to total send out and total disposition by LDCs.

| Company | Total Send out | Total Disposition |
|---|---|---|
| **CHG&E** | City Gates (+)<br>Propane (+)<br>Line Pack (+/-)<br>Conversion (+/-) | Firm Sales (+)<br>ISS (+)<br>Transportation(+)<br>Company Use (+) |
| **Con Edison** | Marketer Deliveries (+)<br>Company Deliveries (+)<br>NY Facilities*(+/-)<br>Generator Deliveries** (-)<br>Slippage (+/-) / LNG(+/-)<br>Heater Fuel (-) | Firm/Trans Sales (+)<br>IT/IS Sales (+)<br>Company Use (+) |
| **KEDLI** | City Gates (+)<br>NY Facilities *(+/-)<br>Generator Receipts **(-)<br>LNG (+/-) | Firm & Trans Sales<br>INT/TC & Trans Sales<br>Generator Deliveries<br>Unbilled Sales (+)<br>Company Use (+) |
| **KEDNY** | City Gates (+)<br>NY Facilities* (+/-)<br>Generator Deliveries** (-)<br>LNG (+/-)<br>Local Production(+) | Generator Deliveries(-)<br>Firm/Trans Sales (+)<br>TC/IT/Trans(+)<br>Unbilled Sales(+)<br>Company Use(+) |
| **NFGDC** | City Gates (+)<br>Net Storage Inj (+-)<br>Storage Adj(+/-)<br>Non-GAC Sales (-)<br>Company Use (-) | GAC Sales (1.01937)<br>Transportation (+)<br>Banked Gas (-) |
| **NMPC** | CityGates (+)<br>Cogen 7 (-)<br>SC 4 (-) | Firm Sales (+)<br>Cogen 7 (-) / SC 4 (-)<br>Transportation (+)<br>Company Use (+) |
| **NYSEG** | City Gates (+)<br>Company Use (-) | Firm Billed Sales (+)<br>ISS (+) / NGV(+)<br>Non-Daily/Daily Metered |
| **O&R** | City Gates (+)<br>SC 8 (-)<br>NYSEG Adj (-) | Firm Sales (+)<br>NYSEG Adjustments(-)<br>Company Use(+)<br>IS-SC8 (-) |
| **RGE** | City Gates (+)<br>Local Purchases (+) | Firm Sales (+)<br>Company Use (+)<br>Transportation (+) |

(+) suggests that this item is added (included) to the total send out or dispositions.
(-) suggests that this item is deducted (excluded) from total send out or dispositions.
*Gas received into the NY facilities by one LDC which is delivered to another LDC.
**Generator deliveries for Con Edison for the LAUF calculation are set at generator sales. Generator deliveries for KEDNY and KEDLI for the LAUF calculation are set at negotiated levels.

The total send out consists mostly of city gate receipts, local production stations, and gas coming into the pipeline system from storage. The total dispositions consists of mostly sales from various service class and company use. As shown above, each LDC has many unique adjustments made to their total disposition and total send outs. The different adjustments made by each LDC are discussed in detail in the next section.

*Gas for Company Use*

Examples of gas for company use include: gas used by heaters at gate and regulator stations, gas used to heat office buildings, and gas used at compressor stations. Each LDC accounts for these company uses differently. For ease of reference, gas used for heaters at gate/regulator stations will be referred to as "heater gas" and gas used at compressor stations will be referred to as "compressor gas" in this report. Table 2 shows how "company use" is reflected in the LAUF factor calculation (whether in disposition or in send out)[5] and whether heater and compressor gas are included as part of company use.

For all LDCs in NY State, gas used for heating buildings is considered as the main source of company use. The treatment of heater gas and compressor varies with each LDC, as shown Table 3.

[5] Send out is defined as gas entering the LDC's system and disposition is defined as gas exiting the LDC's system.

**Table 4.** Gas for company use.

| Company | Company Use | Heater Gas at: City Gate | Regulator Stations | Gas for Compressors |
|---|---|---|---|---|
| CHG&E | Disposition (+) | 16 Unaccounted for | - | 1 Unaccounted for |
| Con Edison | Disposition (+) | 2 Send out[1] | - | 1 Send out |
| KEDLI | Disposition (+) | 2 Send out | 5 Metered[2] | 1 Metered[2] |
| KEDNY | Disposition (+) | 3 Send out | Company Use | - |
| NFGDC | Send outs (-) | 3 Company Use | - | 1 Company Use |
| NMPC | Disposition (+) | 2 Unaccounted For | 36 Unaccounted For | - |
| NYSEG | Send outs (-) | - | - | 1 Unaccounted for |
| O&R | Disposition (+) | See Table 3 | - | - |
| RG&E | Disposition (+) | 1 Company Use | - | - |

[1] Con Edison also has one gas heater that is metered but unaccounted for in the LAUF calculation based on 2010 GAC filing.
[2]KEDLI gas use at regulators is metered but not accounted for.

Only NFGDC and NYSEG account for company use by reducing send out by metered company use volumes. This treatment assigns no losses to company use. All other utilities account for company use as a disposition where the company is treated like a typical customer.

CHG&E and NMPC have unmetered heater gas usages and thus those volumes are part of loss and unaccounted for gas. CON EDISON KEDLI and KEDNY deducted heater gas volumes from total send out and exclude them for the LAUF calculation. KEDLI has five regulator stations that use heater gas. Those volumes are metered, but they are not reflected in the LAUF calculation. KEDNY includes heater gas at regulator stations in company use. Both RG&E and NFGDC have less than three city gate stations that use heater gas. They both include those usage volumes as part of company use. NYSEG does not have any city gate stations that use heater gas.

O&R's treatment of heater gas is more complex and inconsistent. Table 4 shows how O&R is accounting for heater gas at different city gate stations.

**Table 5.** O&R's heater gas use at city gate stations.

| Interstate Pipeline | Location | Metered? | Treatment of Gas |
|---|---|---|---|
| Tennessee | Pearl River | Yes | Company Use |
| Tennessee | Tappan | Yes | Company Use |
| Algonquin | Suffern | Yes | Company Use |
| Millenium | Buena Vista | No | Unaccounted For |
| Algonquin | Stony Point | No | Unaccounted For |
| Millenium | Sloatsburg | No | Credit from Millenium |
| Millenium | Greenwood Lake | Yes | Company Use |
| Millenium | Minisink | Yes | Company Use |
| Millenium | Huguenot | No | Credit from Millenium |
| Columbia | Sparrowbush | NA | Upstream of Meter |
| Millenium | Westtown | Yes | Credit from Millenium |
| Millenium | Warwick | Yes | Credit from Millenium |
| Millenium | Tuxedo | No | Credit from Millenium |

As can be seen in Table 4, five of the thirteen city gates in O&R gas distribution systems use heater gas and the usage volumes are appropriately included in company usage. O&R receives a quarterly credit from the Millennium interstate pipeline for heater gas at five of the remaining city gates, two of which are based on metered usage and three of which are based on estimated unmetered usage. Millennium applies the credit by providing additional gas into O&R's storage. Heater fuel gas is unmetered at two of the remaining city gate stations. Therefore, system LAUF contains the volumes associated with these two stations. The last city gate, Sparrowbush, uses heater fuel gas upstream from the city gate, thus they are not part of the LDC's pipeline system.

Aside from gas usages at regulator and city gate stations to heat the facility and the natural gas in the pipeline, utilities also use gas as fuel for compressors to achieve required delivery pressures[6]. This usage may be small but needs to be properly

[6]An example is to increase pressure at natural gas vehicles (NGV) fueling stations.

accounted for. The treatment of compressor gas by each utility was shown in Table 2. NYSEG and CHG&E each have one compressor station that use gas that is unaccounted for. NFGDC includes compressor gas in company use, while CON EDISON deducts compressor gas volumes from total send out. KEDLI has one compressor station that uses gas. This volume is metered but not included in the LAUF calculation. All other utilities do not have compressor gas.

*Line pack and Heat Content Factor Adjustment*

As shown in Table 5, CHG&E adjusts the total send out to reflect heat content factor adjustments and line pack adjustments. The line pack adjustment is intended to compensate for the effect of temperature and pressure on the amount of gas. CH is the only NY utility which makes an adjustment for line pack in its LAUF calculations.

Prior to January 2010, CHG&E used a monthly average for the CCF to BTU conversion factor, which did not accurately reflect the actual heating content billed by the interstate pipeline which uses a daily Ccf to BTU conversion factor. A heat content factor adjustment was made to reconcile the differences between the two approaches. In January 2010 CHG&E adopted the interstate pipeline approach eliminating the need for the adjustment. CHG&E is the only NY utility which makes a heat content factor adjustment in its LAUF calculations.

*Dedicated Line Customers*

NFGDC and NMPC are the two LDCs that have dedicated line customers. NMPC has two dedicated line customers, one excluded from the LAUF calculation and one included in the LAUF calculation. NFGDC has five dedicated line customers, all of which are included in the LAUF calculation.

*Excluded Customers*

Con Edison, KEDLI and KEDNY exclude several special contract electric generation customers from the system LAUF calculation. These customers must provide for deliveries at a negotiated system loss rate. These customers are offered a negotiated LAUF factor, as they are served off of the company's transmission system. However, Con Edison excludes electric generation send out from the LAUF calculation at a zero

loss factor while both KEDNY and KEDLY exclude electric generation at the negotiated LAUF factor.

The three companies that operate the NY Facilities system treat each other as customers of the system. As part of the New York Facilities' agreement, gas transported by Con Edison, KEDLI and KEDNY across the system for each other is excluded from send out and disposition at a zero LAUF factor.

**Factors Affecting LAUF**

There are many factors, common to some or all of the LDCs, that can impact actual LAUF. This section discusses these factors, the LDCs affected, and their impacts on the LAUF calculation.

*Meter Issues/Error*

The natural gas industry uses four types of gas meters: diaphragm (or bladder), rotary, turbine and orifice.[7] All these meters require periodic adjustments to maintain accuracy within the allowed +/- 2%.

Diaphragm meters are commonly used for residential and small commercial utility customers. These meters are generally very accurate when measuring small volumes of gas. Rotary meters are highly affected by temperature and pressure and therefore rely on reading adjustments due to temperature and pressure. Turbine meters measure the speed of the gas moving through the meters to calculate the flow. Quality and quantity of the flow through the meter affects the accuracy. Orifice type meters rely on switching of orifice plates used at different set flow rates to achieve an acceptable accuracy. All of these meters introduce error into the LAUF calculation, because over

[7] Diaphragm Meter – A meter consisting of chambers formed by movable diaphragms, in which the gas flow is directed by internal valves. The chambers alternately fill and expel gas, producing a near continuous flow through the meter.

Orifice Meter – A gas meter consisting of a straight length of pipe inside which a precisely known orifice affects the flow.

Rotary Meter – A meter which is comprised of two figure "8" shaped lobes with rotors (also known as impellers or pistons) which spin in precise alignment. With each turn, they move a specific quantity of gas through the meter.

Turbine meter – A meter comprised of a small internal turbine which measures the speed of the gas, which is then transmitted to a counter.

time, measurements by these devices can vary from the allowed accuracy parameters. By regulation, LDC customer meters are allowed a meter reading variance of +/- 2%.[8]

Similarly, meters at a LDCs city gate are allowed a meter reading variance of +/- 2%[9]. For any given month the actual gas supply receipts at the city gate meter may be +/- 2% higher or lower than the amounts reflected in the meter read. The Pipelines which deliver the gas supply invoice the LDC per the city gate meter read, but the actual volumes received into the system may be less or more within the allowed tolerance band. This impacts the accuracy of the system receipts. This factor essentially carries into the LAUF calculation as another source of error that could swing the result either way based on its impact to company system receipts.

LDC meter accuracy at city gate receipt points may also be affected by flow volumes. Meter accuracy can be compromised if the gas flow volumes are below the normal designed operating range of the installed meter. As a result the gas leaking into the system can result in a lower loss factor or even possibly create the appearance of net positive gas production on the LDC's distribution system. This situation is more pronounced in summer periods when there is no gas being consumed by customers for space heating purposes. As an example, NYSEG has identified eighteen supply receipt meters where low usage volumes during summer months can possibly affect the meter accuracy, since the meters were designed for larger flow volumes [Case 09-G-0669].

The design, age, and size of the city gates can also impact the accuracy of metering. The majority of city gates are controlled and operated by interstate pipelines. Generally these city gates have a "cascading" type design for their metering where valves automatically open or close to combine or split the gas flow to one or more meters. The design for the operation and control of these valves affect the accuracy in determining where in its accuracy range it operates.

The age of the metering station also affects the accuracy as the newer the station meters the newer the technology and the better the accuracy. The size of the station is

[8] 16 NYCRR § 228.3.
[9] Per pipeline tariffs, all city gate meters are allowed a meter reading variance of +/- 2% for all pipelines serving NY with the exception of Texas Eastern Pipeline; which has an allowed meter reading variance of +/- 1%.

important to accuracy as well. While the volumes at each of these city gates may be significant to the LDCs total system volume, they often are insignificant to the total system volume of the interstate pipeline. Replacement or upgrading of the city gate to improve the metering accuracy may not be economically for the interstate pipeline.

*Meter Reading Issues*

An LDC's meter reading schedule can affect a utility's LAUF. Some LDCs' customers' meters are read on a bi-monthly basis instead of a monthly basis. An increase in the time between meter reads increases the variance between measured system receipts and measured system deliveries.

To recognize the timing difference between receipt and delivery meter reads, some LDCs adjusts receipts to be aligned with deliveries while other LDCs adjust deliveries to be aligned with receipts. Some LDCs choose to make no adjustments for the timing difference as they consider either the variance insignificant or the adjustments ineffective.

*Therm Billing*

All gas meters measure volumes (typically Ccf). The conversion of volumes to energy content (typically Therms) introduces additional variance. Pipelines provide the utilities with the data for volumes delivered and its associated heat content but the bill is based on the heat content[10]. The heat content is determined by periodic sampling of the gas at the city gate.

Utilities that bill their customers based on heat content introduce addition inaccuracy in accounting for LAUF. Their billing relies on the conversion of the metered volumes to heat content. This conversion is not based on heat content measurement at the customers' meters but rather at the assumed heat content.

Many LDCs have multiple city gates that receive natural gas from various production areas with differing heat content. To the extent these various gas supplies combine on the

[10] Regardless of whether the LDC bills its customers using volumes or heating content, the LDCs themselves are billed on the basis of heating content by the interstate pipelines. However, the city gate meters measures the natural gas flow by volume. Each LDC therefore monitors and verifies the heating contents of the gas delivered by using chromatographs at each city gate or receipt point into the system.

LDCs system, the heat content of the gas volume measured at a customer's meter will be different from the heat content at the city gates. These LDCs try to limit this disparity by calculating a heat content conversion for various zones (generally referred to as "therm zones") within its distribution system using heat content measurements within the distribution system as a measurement of the heat content of the gas flowing to the customers within the zones. The conversion factor for each Therm zone is determined by an assumed weighted average of the conversion factors for the city gates serving that zone.

The type of billing by LDC is shown in Table 6. For those LDCs billing in therms, the table also provides their respective therm zones.

**Table 6.** Type of billing by companies**.**

| Company | Billing | Therm Zones |
|---|---|---|
| CHG&E | Ccf | - |
| Con Edison | Therms | 5 |
| KEDLI | Therms | 3 |
| KEDNY | Therms | 8 |
| NFGDC | Ccf | - |
| NMPC | Therms | 14 |
| NYSEG | Therms | 21 |
| O&R | Ccf | - |
| RG&E | Therms | 2 |

*Condition of the Utility's Distribution System - Leaks*

The age of the distribution system affects LAUF. Natural deterioration over time results in leaks. However, technological advances in the quality of piping materials and their installation methods have reduced the rate of deterioration in newer systems.

As an example, cast iron and steel piping installed without corrosion protective measures, and certain vintage plastic piping is prone to leaks due to the effects of corrosion and cracking. Certain New York State LDC's were built after technology and methodologies were developed to minimize the effects of corrosion and cracking.

Typically, LDCs with newer distribution systems have lower LAUF than that of LDC's with older vintage distribution systems. However, the LAUF of the older vintage systems will approach the LAUF of the newer distribution systems as the cast iron and bare steel are replaced with either corrosion resistant plastic or corrosion protected steel.

*Transmission Load*

Some of the New York State LDCs have large customers that take service directly from the LDC transmission facilities. The gas delivered to the city gates for the customers connected to the LDC transmission facilities usually includes a specified amount of gas for system losses. However, this amount may or may not represent actual losses as transmission losses are unknown. This may affect the distribution system LAUF by introducing an additional amount of gas into the system that may or may not cover actual system losses.

Of the large use customers that are directly fed by the LDC's high pressure transmission facilities, the amount of gas brought to the city gate for system losses is typically a negotiated percent of each customer delivered volumes. The percentage has no measurement basis as the transmission system is not isolated from the distribution system by meters. The amount of gas out of the transmission system into the distribution system is not a meter measurement, but an assumption.

*Dedicated Lines*

There are currently two LDCs serving individual customers from a dedicated line which is distinctly separate from the distribution system. For the LDCs with dedicated line customers, the LAUF calculation currently includes all system receipts and dispositions for the dedicated line customers. Since these dedicated lines have no physical tie to the utility distribution system, inclusion of their send out and dispositions distort the LAUF calculation.

*Theft of Service*

Theft of service which is the tampering with utility equipment and/or bypassing the utility meter to steal natural gas contributes to the LDC's LAUF. Utilities make gas delivery adjustments for discovered theft of service and the adjustment amount is

included in the LAUF calculation. However, these adjustments usually represent an estimate for the amount of gas these customers have used during an estimated period of theft. In some cases, the period of theft extends over several reconciliation periods. This results in deliveries from prior periods being included in the LAUF calculation. This inherently introduces another factor of error into the LAUF calculation.

# DISCUSSION

New York State utilities reconcile their purchased gas costs to gas cost recoveries annually. In this reconciliation, the utility's annual cost of gas reflects the level of purchased gas commensurate with actual sales plus a fixed factor of adjustment for LAUF gas. The fixed factor of adjustment is determined in the utility's prior rate proceeding. Utilities can take actions to minimize sources of LAUF gas. Accordingly, a utility absorbs costs associated with LAUF gas to the extent that its actual gas loss rate is greater than the loss rate associated with the fixed factor of adjustment established in its base rate proceeding. Conversely, a utility may retain the benefit if its actual loss rate is lower than the fixed rate. This mechanism provides an economic incentive for utilities to minimize their actual loss rate. Gas utilities calculate their actual LAUF annually, based on the 12 months ended August 31. However, as previously discussed, there are numerous methods used to determine the amount of LAUF. Below are recommendations to standardize the LAUF calculations of all NY Gas LDCs.

**Standardization of LAUF Calculations**

The goal of standardization of LAUF calculations is to arrive at a method that provides a meaningful and useful measurement of the overall system performance while limiting the effect of the natural variability of the data which goes into the measurement. The natural variability of the data is due to factors such as weather, economy, and the calendar[11]. The weather and economic conditions change the year to year load distribution among the electric generation, industrial, commercial, and residential customers. The different calendars along with the weather and economy impact the year to year mismatch between actual and measured end user usage. Additional variability is

[11] There are 14 different possible annual calendars which impact billing schedules and volumes due to the number of working days and weekends in a month.

introduced by adjustments in the LAUF calculation, and should be avoided when possible.

Each LDC has unique system characteristics such as: number of city gates, metering arrangement at those city gates, load factors at those city gates, electric generation load, customers composition and load contribution behind each city gate, number of city gates serving each load area, physical system characteristics (length, size, type of pipe, age, and pressures), type of end user meters, and meter reading schedule. All these characteristics contribute to significant differences between LDCs in their actual measured LAUF performance. Therefore, standardization of LAUF calculations will not result in the ability to compare LDCs based on the factor of adjustment.

The raw data used to determine LAUF is inherently adjusted and manipulated as part of the measurement process. Meter readings are a product of calculations which translate physical measurements to volumetric usage which introduces a varying degree of error. LDCs, which bill on energy content, further adjust the volumetric usage to energy usage with additional error inherent in the assumed conversion factor.

The amount of gas metered into the system and out of the system, based on actual meter reads within the annual reconciliation period, should be how LAUF is determined. The standardization of the LAUF calculation to total metered into the system and total metered out of the system should be used to provide the measurement used to determine the LAUF incentive. Basing the LAUF incentive on total metered in and total metered out is the correct approach. Further, all natural gas is intended for an end user where LAUF increases the ultimate cost to society, whether it be through costs to heat a home, to generate electricity, to manufacture products, or to provide a service.

*Total Gas Metered Into the System*

The amount of gas metered into the system shall be defined as the final billed quantity of gas delivered to the LDC system; except receipts for dedicated line customers as discussed below. The final billed amount can reflect rebilling due to metering disputes. Delivered quantities can be from interstate pipelines, intrastate pipelines and facilities, local producers, and other LDCs.

*Total Gas Metered Out of the System*

The amount of gas metered out of the system shall be defined as the final billed quantity of gas out of the LDC system plus any metered gas for company use; except dedicated line customers' billed deliveries as discussed below. The final billed amount recognizes that some bills are based on estimates and that billing errors can require re-billing. Delivered quantities can be to end users, interstate pipelines, intrastate pipelines and facilities, and other LDCs.

*Allowed Adjustments*

Dedicated Lines

The only adjustments to the gas metered in and gas metered out shall be the metered in and metered out gas to customers served by dedicated lines. Since dedicated line customers are separate from the distribution system, the volumes associated with these customers can be excluded from the LAUF factor calculation by deducting the metered in amount from total send out. Including dedicated line customers in the system LAUF calculation can cause unnecessary variations in the system LAUF.

*Disallowed Adjustments*

The following adjustments shall be discontinued for the purpose of determining the LAUF incentive. While these adjustments attempt to achieve a more accurate LAUF, Staff believes ultimately these adjustments introduce further variability with little additional accuracy in the LAUF determination. Discontinuing these adjustments in LAUF calculations does not preclude any LDC from continuing their use for operational reasons.

Line pack and Conversion Factor

As discussed in the previous section, CHG&E is the only NY utility that currently adjusts LAUF calculation to reflect line pack. Table 7 shows the impact of line pack on LAUF for the three most recent annual gas reconciliation periods.

**Table 7.** Impact of line pack on LAUF for the three most recent annual reconciliations.

| Period (Twelve Months ending) | Total Unadjusted City Gate Receipts | Plus: Propane | Less: Line pack | Plus: Conversion | Natural Gas Available w/ Line pack | Disposition | LAUF w/ Line pack | LAUF w/o Line pack |
|---|---|---|---|---|---|---|---|---|
| Aug-08 | 16,095,611 | 1,034 | 1,712 | (341) | 16,094,592 | 15,936,740 | 0.9808% | 0.9913% |
| Aug-09 | 16,547,636 | 1,368 | (3,030) | 5 | 16,552,039 | 16,391,335 | 0.9709% | 0.9528% |
| Aug-10 | 18,883,540 | 1,504 | (304) | (55) | 18,885,293 | 18,798,357 | 0.4603% | 0.4587% |

Staff recommends that line pack should be excluded from the calculation in order to further simplify and standardize the calculation. As can be seen in Table 7, for the twelve months period ending in August 2009, when line pack was most significant of the three years, the line pack adjustment represents less than 0.02% of the annual throughput. Elimination line pack for that period results in an increase of loss percentage by 0.0181%, a negligible difference.

Not only does line pack have minimal effects on the LAUF calculation, the determination of line pack may be subjective. The relationship between pressure and line pack is based on assumed constants while the system is dynamic and ever changing.

Staff also recommends eliminating the conversation factor adjustment used by CHG&E. As previously discussed in the earlier section, since January 2010, CHG&E uses a daily volume to heat content conversion factor, thus eliminating the need for conversion factor adjustment.

Excluded Customers

As discussed above, KEDLI, KEDNY and Con Edison exclude customers from the system LAUF calculation. Keyspan – Long Island (KEDLI) and Keyspan-New York (KEDNY) exclude special contract electric generation customers from the system LAUF calculation. These customers must provide deliveries at a negotiated LAUF or loss percentage. Over the past three years approximately 50% and 20% of the system throughput has been excluded from the system LAUF calculation for KEDLI and

KEDNY respectively. Con Edison also excludes special contract electric generation customers from the system LAUF calculation. These customers also must provide deliveries at a negotiated LAUF or loss percentage. Over the past three years approximately 50% Con Edison's the system throughput has been excluded from the system LAUF calculation.

All these customers are served off the LDC's transmission system. Due to the transmission system operating at high pressure, the transmission system is assumed to have a lower LAUF percentage, than the utility distribution system LAUF percentage, since transmission system leaks are more readily detectable and require immediate repair due to the large pressure differential. However, as mentioned previously, the amount of LAUF for the transmission system is not known as no distinct metered boundary exists between the transmission system and the distribution system. Therefore system receipts and deliveries for transmission customers should be included in the LAUF calculation.

Company Use

As discussed previously, Company use is the volume of natural gas used by the company; which includes: gas used by heaters at gate and regulator stations, gas used to heat office buildings, and gas used at compressor stations. The treatment of heater and compressor gas varies depending on each LDC. Some LDC adjusts total send outs to reflect heater and compressor gas usage, while some include them as part of company use as a disposition. This study initiated an internal investigation within the LDCs and found that they neglect to account for some heater and compressor gas usage.

All metered volumes for Company use should be included in the LAUF factor calculation. Gas for company use should be included in the metered out gas, like any other end user, to be fair and consistent with other sales customers. Gas for company use should only be excluded from the metered in gas if the usage occurs before the city gate. Some LDCs have heater gas usage that is unmetered and unaccounted for. Unmetered company use should remain as LAUF as long as it continues to be unmetered.

Theft of Service

Some LDCs make adjustment to account for the volumes associated with theft of service recoveries. No adjustment for theft of service should be made to the metered out quantities. These amounts are estimated and are often out of period which distort LAUF. The degree that the estimates are over or under the actual is unknown. However GAC revenues recovered from theft of service should continue to be part of the GAC recovery. The benefit to LDCs for recovery of theft of service will be in lower LAUF going forward and higher historical LAUF, undistorted by possible out of period volumes.

**Incentive Mechanism Review**

One of the objectives of Staff's review of LAUF is to determine if the LAUF incentive mechanism is appropriate as currently structured. Since the LAUF mechanism was established, the natural gas industry has undergone significant changes. Retail competition began in the mid-1980's where larger customers were given the option to purchase gas directly from suppliers rather than their LDCs. A proceeding instituted by the Commission in 1993 culminated in unbundling and small customer aggregation programs. The outcome was that commodity service was unbundled from delivery service, which allowed marketers to offer commodity service to small customers as an aggregated group. Given these changes in the natural gas industry, the current LAUF incentive mechanism may no longer be appropriate.

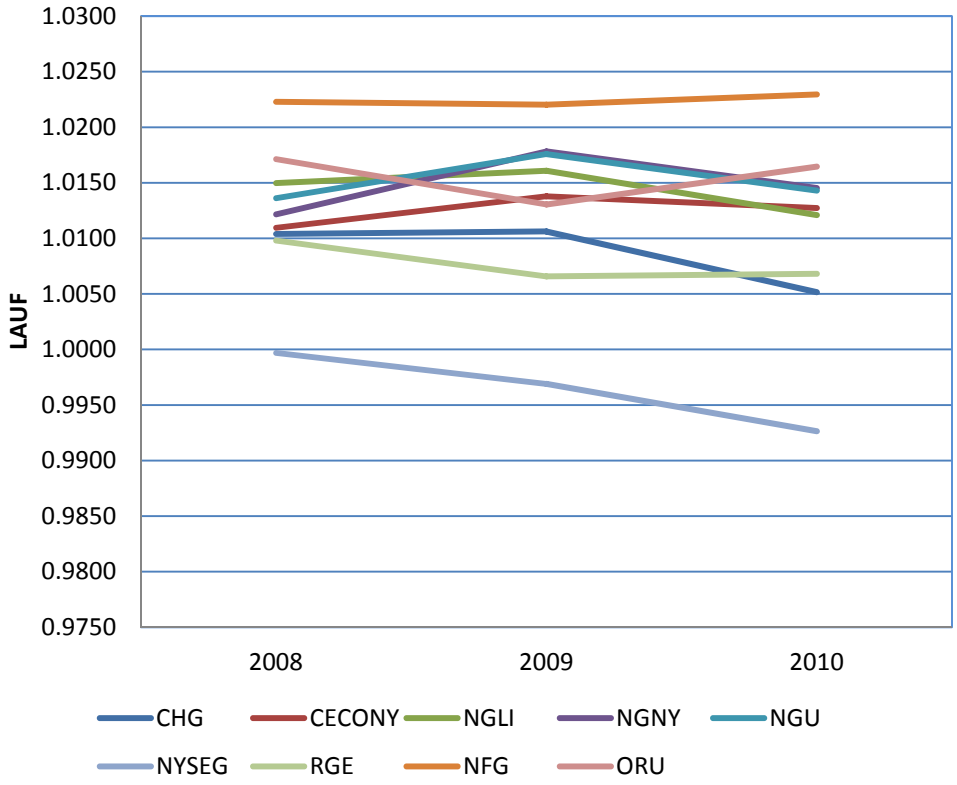
Further safety incentive mechanisms have also become a standard part of rate plans. These safety mechanisms require timely response to reported gas leaks, timely repair of gas leaks based on their severity, continuous leak surveys, and a mandatory replacement rate of leak prone pipe. All these safety requirements provide incentives for LDC action which reduces LAUF. The LAUF mechanism might be better restructured to maintain the gains in LAUF reduction while allowing these other incentive mechanisms to drive any further gains.

*Incentive Mechanism Components*

There are two components which affect the magnitude of the current incentive mechanism for each utility: the difference between the actual and allowed losses and the commodity cost of gas. A historical analysis on system loss amounts for all NY utilities

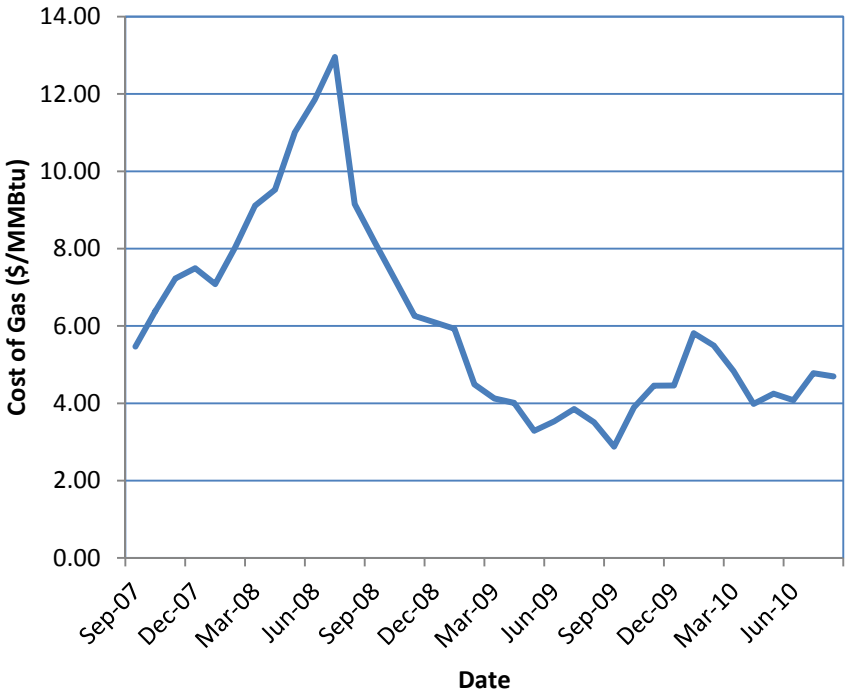
was performed. The review included calculations for three years, and indicated that during that time period actual system losses are stable. The actual system FFA for all major NY utilities can be seen in Figure 1 below.

**Figure 1.** Actual Factor of Adjustment for Major NY Utilities.




A review of the commodity costs of gas over the same three year period shows greater variation. Figure 2 shows the NYMEX settlement prices at the Henry Hub.

**Figure 2.** NYMEX Natural Gas Closing Price




These fluctuations in the market price can and have caused dramatic changes in NY utilities commodity cost of gas. All NY utilities experienced a significant drop in their commodity cost of gas for the reconciliation period ending 8/31/2010 as compared to the reconciliation period ending 8/31/09, as shown in the above figure. For some utilities, commodity costs in 2010 were less than half those of 2009. Based on the variations in the commodity cost, utilities experience revenue fluctuations due to the LAUF incentive.

The commodity part of a customer's bill for natural gas represents a significant portion of the customer's bill. Even with the significant variation in commodity prices the past three years, the commodity portion has always been more than 50% of a customer's annual bill. Recovery of the LDC's return constitutes a small percent of the delivery portion of a natural gas customer's bill. The commodity portion relative to the return portion of a customer's bill coupled with the natural variability of LAUF results in significant swings to the LDC's annual return even with a relative stable actual factor of adjustments measured each year.

The commodity price and the natural variability of LAUF are beyond the control of the utility. Revenue fluctuations due to circumstances beyond the control of the utility should be limited; however, performance standards should not be compromised. Staff believes that implementation of a dead band around the LAUF target will dampen these revenue fluctuations, while maintaining current LAUF performance.

*Dead band*

A dead band should be designed to avoid the revenue impact of natural variability. For actual utility losses within the tolerance band, the utility would recover actual commodity costs. In the event actual utility losses are outside the tolerance band, the utility would earn an incentive or incur a penalty, to the outer limit of the tolerance band.

With regard to the size of the dead band, we recommend that this dead band be two standard deviations around the average FOA percentage. The standard deviation of the average FOA percentage is limit to 0.5% should any LDC have standard deviation of great than 0.5%. Two standard deviations were chosen because it would result in the likelihood of any one year being outside that range due to natural variability being less than 1 in 6 for a three year period. The maximum range for the band is ±1.0% from the five year average.

*Negative Losses*

Staff must address negative losses because NYSEG[12] has experienced consistent negative losses for the past 3 years. Negative losses are physically impossible. However, consistent year to year calculated negative losses are possible when the offset[13] between the set of meters reading gas in and the set of meters reading gas out is negative and the natural variability is less than that offset. Additionally, natural variability in the LAUF can produce negative losses in some years for LDCs whose offset is positive.

We recommend that there should be no LAUF incentive for an actual factor of adjustment less than 1.0 in any reconciliation year. It does not make sense to reward an

[12] Case 09-G-0669
[13] Two sets of meters will never provide the same measurement. The difference between those two measurements is defined as offset.

LDC for a physical impossibility. To compensate for disallowing LAUF incentives for actual factor of adjustments below 1.0, we recommend that top of the dead band equal 1 plus four standard deviations when the bottom of the dead band is less than 1. The LAUF incentive should be calculated from the top of the dead band for penalty situations and the bottom of the dead band for reward situations.

Additionally, we recommend that 1.0 be the minimum fixed factor of adjustment. It does not make sense to require ESCOs to deliver less gas to the city gate than they sell at the burner tip.

**System Performance Adjustment Mechanism (SPAM)**

The inequity related to the over or under delivery of gas to serve firm transportation due to the fixed factor of adjustment being greater than or less than the actual factor of adjustment should be eliminated. We recommend that the inequity be eliminated by the implementation of a surcharge/refund for the commodity cost of the gas for the over or under delivered gas.

This surcharge/refund should be called the system performance adjustment mechanism (SPAM). All firm customers shall be surcharged for additional gas beyond the tariff allowance for losses and refunded for the reduced gas below the tariff allowance when the actual losses are more or less, respectively, than the tariff allowance. The additional gas shall be valued at the LDC's average commodity cost of gas. The limit of the amount surcharge shall be to the dead band.

Implementation of the SPAM is necessitated for the following reasons: 1) by the creation of the dead band, 2) by limiting the minimum fixed factor of adjustment to 1.0, and 3) by the impact of the increasing percentage of firm sales being transportation sales. Without the SPAM, full service and transportation customers would not be treated the same.

The dead band permits the Company to recover from, or refund to, full service customers for actual losses within the dead band. Correspondingly, the SPAM permits the Company to recover from, or refund to, transportation customers for actual losses within the dead band.

For negative losses, the Company recovers from full service customers only the gas costs associated with actual losses. Correspondingly, the SPAM refunds to transportation customers for actual losses below a factor of adjustment of 1.

Lastly, the SPAM addresses the effect of increased migration to transportation service. Without SPAM, as migration increases, fewer full service customers either pay for the extra losses or benefit from the reduced losses from a growing number of transportation customers. At the extreme, the magnitude of this cost or benefit can exceed the commodity cost of gas for full service customers. Appendix A shows how the amount to surcharge/refund to maintain equity grows as the percentage of firm sales as transportation service increases.

The SPAM should be applied to both full service and transportation customers through a delivery charge adjustment. In effect this will separate the gas cost recovery between recovery from the full service customers for the fixed factor of adjustment and recovery from all firm customers for any deviation of the actual factor of adjustment from the fixed factor of adjustment.

SPAM addresses the issues of setting delivery requirements for energy supply companies (ESCOs) serving transportation customers, providing proper market signals, and limiting the fixed factor of adjustment to a minimum of 1. In cases where the gas measurement into the system is less than the gas measurement out of the system, all customers will be refunded for the gas not needed to meet the system deliveries.

The one instance where the SPAM will operate outside the dead band is when the losses are negative. In this situation, the SPAM assures that all customers receive the savings as LAUF incentives are not provided for negative losses.

*Transportation Sales Impact on the LAUF Incentive*

Implementation of SPAM allows full recovery of commodity cost from firm customers within the dead band. Outside the dead band, in the current LAUF mechanism, the company assumes the commodity costs of gas for full service customers while full service customers assumes the commodity cost of gas for transportation customers.

In the examples shown in Appendix B, the combined penalty/(incentive) for full service and transportation customers for a factor of adjustment outside the dead band is $3 million. Under the existing LAUF mechanism, the Company's LAUF incentive equals the $3 million times the percentage of firm sales that are full service. For migration rates of 5%, 40% and 95%, the LAUF incentive is $2.85 million, $1.8 million and $0.15 million, respectively. This demonstrates that the LAUF incentive decreases as the amount of full service sales decrease relative to firm sales.

We recommend that the LAUF incentive equal the combined incentives for full service and transportation customers. This can be accomplished by adding the two incentives from a detailed allocation of commodity costs as shown in Appendix B and can also be approximated in the existing LAUF mechanism by dividing the current incentive by the percent of firm sales that are full service sales.

## Summary of Recommendations

After conducting a statewide review of the recovery of the cost of lost and unaccounted for (LAUF) gas for each LDC, Staff makes recommendations pertaining to the setting of utility specific fixed FOAs and the SPAM.

**Fixed FOA Recommendations**

1. We recommend that the LAUF calculation, for incentive purposes, be based on a system wide LAUF calculation. The FOA, which is used to determine the gas lost of the system, should be total metered into the system divided by total metered out of the system with no adjustments, other than conversion from volumes to energy, for systems based on therm billing. The proposed tariff FOA can be determined by averaging the previous five year's FOA. The only meter readings to be excluded are dedicated lines where the receipts and deliveries are excluded.

   We make this recommendation for the following reasons:

   a) The minimization of losses benefits everyone through lower electric generation costs, lower production costs of manufacturers, lower operation costs of businesses, lower costs to residences, and lower environmental impact from reduced natural gas losses.

b) Every adjustment introduces additional error, uncertainty, variability in the LAUF calculation. Metering in itself contains uncertainty, error, and variability. The financial impacts of variability are minimized if the variability is minimized.

Appendix A provides the system wide FOA for the 2008 to 2010 annual reconciliation periods.. Even though the proposed calculation for the FOA requires five years of data, Appendix A only provides the previous three years of data for simplicity. The average FOA for the three years are shown in Table 7.

2. We recommend that the lowest tariff FOA be 1.0000.

We make this recommendation for the following reasons:

1.) Physically, delivery of more gas than the amount of gas received is not possible. A multi-year average for actual factor of adjustment less than 1.0000 is a result of factors, such as meter error and conversion from volume metering to energy billing.
2.) A requirement to bring in fewer units than units to be sold is not reasonable.
3.) Certain LDCs have already experienced actual factor of adjustment for the distribution system being less than 1.0000 for multiple years and guidance is necessary in these instances.

**SPAM Recommendations**

1. We recommend the institution of a system performance adjustment mechanism (SPAM) charge as as a part of an existing delivery charge to recover or refund gas costs for actual LAUF greater or lesser than the tariff LAUF within the dead band. Alternatively, the surcharge/refund amount from the SPAM can be recover from full service customers through the GAC Reconciliation if the company do not have an existing DRA mechanism that collect surcharges from those customers.

We make this recommendation for the following reasons:

a) To remove the subsidy between full service and transportation customers where full service customers use transportation customers' gas when losses are less than the tariff FOA or transportation customers use full service customers' gas when losses exceed the tariff FOA.
b) Increasing migration to transportation service produces in an increasing impact of the subsidy volume on full service customers.
c) The limiting of the tariff FOA to a minimum of 1.0000 creates a persistent subsidy to full service customers from transportation customers for those LDCs measuring actual FOA consistently below 1.0000 with the type of metering currently in service. This recommendation removes this biased subsidy.

2. We recommend that the LAUF incentive include the costs/savings outside the dead band for both full service and transportation customers. We make this recommendation for the following reasons:

a) Currently full service customers assume the cost or savings of the added or avoided gas for transportation customers outside the dead band.
b) Those costs or savings were part of the LAUF incentive for those transportation customers as full service customers.
c) The result of customer migration to transportation service should not be a reduction of the LAUF incentive to the Company and an increase in costs to full service customers.
d) It makes the LAUF incentive independent of customer migration to transportation service and avoids the trivialization of the LAUF incentive due to significant migration.

3. We recommend that a dead band of two standard deviations of the previous five year's FOA be set around tariff FOA. The LAUF incentive (or disincentive) is calculated using the top of the dead band when the FOA is above the dead band. The LAUF incentive is calculated using the bottom of the dead band when FOA is below the dead band. We make this recommendation for the following reasons:

a) Factors, such as meter error, conversion from volume metering to energy billing, billing schedule variation year to year, and estimated meter reads, provide variability in the LAUF calculation which is unavoidable. Year to year variability in gas lost creates variability in financial impact to the LDC as the commodity cost of gas for the LDC is significant compared to the LDC's net margin. Over a multi-year period, the net LAUF incentive can be small while any one year's LAUF incentive can be large.
b) Setting the dead band on standard deviations recognize that each LDC's system is unique with its own inherent variability.
c) Setting the dead band at two standard deviations assure that the inherent variability would not trigger any LAUF incentive for more than 80% of any three year rate plan from inherent variability.
d) Calculation of the LAUF incentive from the dead band limits would further reduce the financial impact to only that variability beyond the natural variability.

4. We recommend that no LAUF incentive be given for an actual factor of adjustment below 1.000. We make this recommendation for the following reasons:
    a) Physically, delivery of more gas than the amount of gas received is not possible. An actual factor of adjustment below 1.0000 is a result of factors such as meter inaccuracy conversion from volume metering to energy billing, billing schedule variation year to year, and estimated meter reads.
    b) It does not seem reasonable to provide a LAUF incentive for an actual LAUF which is possible only through meter inaccuracy or operational timing mismatches.
5. We recommend that the top of the band be set at one plus four standard deviations when the bottom of the band is limited to 1.0000. We make this recommendation for the following reason:

The recommendation is consistent with recommendation #3. Once the lower band is at 1.0000 and no LAUF incentive below an actual factor of adjustment of 1.0000 is allowed, it provides symmetry to provide no LAUF incentive until actual factor of adjustment is above the upper band corresponding to when the lower band is 1.000.

For illustration purposes, the Table 7, shown below, has taken the system wide factor of adjustments for the 2008 to 2010 annual reconciliation periods from Appendix A and calculated the average FOA and standard deviation for each LDC's three years of corresponding FOA percentages. The target factor of adjustment is set to 1 plus the average FOA percentage with the bottom of the band equal to the target less two standard deviations and the top of the band equal to the target plus two standard deviations.

**Table 8**. Proposed system wide factor of adjustment.

| | **System Wide FOA Incentive** | | | **FOA %** | |
|---|---|---|---|---|---|
| | BOTTOM | FOA | TOP | 3-Year Average | Standard Deviation |
| CHG&E | 1.00203 | 1.00801 | 1.01399 | 0.801% | 0.299% |
| Con Edison | 1.00962 | 1.01249 | 1.01535 | 1.249% | 0.143% |
| KEDLI | 1.01027 | 1.01438 | 1.01849 | 1.438% | 0.206% |
| KEDNY | 1.00915 | 1.01484 | 1.02052 | 1.484% | 0.284% |
| NMPC | 1.01092 | 1.01517 | 1.01941 | 1.517% | 0.212% |
| NFGDC | 1.02147 | 1.02242 | 1.02337 | 2.242% | 0.048% |
| NYSEG | 1.00000 | 1.00000 | 1.01419 | -0.359% | 0.355% |
| O&R | 1.01117 | 1.01555 | 1.01993 | 1.555% | 0.219% |
| RG&E | 1.00414 | 1.00773 | 1.01131 | 0.773% | 0.179% |

NYSEG had the lowest average FOA percentage of -0.359% and NFGDC had the largest average LAUF percentage of 2.242% for the three years. NFGDC has the smallest standard deviation of 0.048% and NYSEG has the highest at 0.355%. NYSEG's target factor of adjustment is 1.00000 and the top of the band is 1.0 plus four standard deviations as its average LAUF percentage is negative. The bottom of the band ranges

from a low of 1.00000 for NYSEG to a high of 1.02147 for NFGDC. The top of the band ranges from a low of 1.01131 for RGE and a high of 1.02337 for NFGDC. For all LDCs shown, the top of the band would not have triggered a penalty in the 2008 to 2010 period. The bottom of the dead band would have triggered a benefit for NYSEG in all three years if the dead band was not limited to actual factor of adjustments greater than 1.0000.