

BEFORE THE
WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

UG-__
GENERAL RATE APPLICATION
OF
NORTHWEST NATURAL GAS COMPANY

December 31, 2018

Direct Exhibit of Kevin S. McVay

REVENUE REQUIREMENT

Exh. KSM-4

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018

| Line No. | Washington Allocated Results | | | | | |
|-------------------------------------|--|----------------------|---------------------|------------------------|-----------------------------------|----------------------|
| | Test Year Results | Adjustments | Test Year Adjusted | Proposed Rate Increase | Test Year at 10.30% Equity Return | |
| | (a) | (b) | (c) | (d) | (e) | |
| Operating Revenues | | | | | | |
| 1 | Sale of Gas | \$67,314,413 | (\$3,593,725) | \$63,720,688 | \$8,312,044 | \$72,032,732 |
| 2 | Transportation | 2,370,981 | (9,877) | 2,361,104 | 0 | 2,361,104 |
| 3 | Miscellaneous Revenues | (2,048,364) | 2,287,568 | 239,204 | 0 | 239,204 |
| 4 | Total Operating Revenues | 67,637,030 | (1,316,034) | 66,320,996 | 8,312,044 | 74,633,040 |
| Operating Revenue Deductions | | | | | | |
| 5 | Gas Purchased | 25,772,083 | (1,327,405) | 24,444,678 | 0 | 24,444,678 |
| 6 | Uncollectible Accrual for Gas Sales | 58,166 | 17,476 | 75,642 | 8,774 | 84,416 |
| 7 | Other Operating & Maintenance Expenses | 17,639,305 | 419,002 | 18,058,307 | 0 | 18,058,307 |
| 8 | Total Operating & Maintenance Expense | 43,469,553 | (890,926) | 42,578,627 | 8,774 | 42,587,401 |
| 9 | Federal Income Tax | 1,360,922 | (286,902) | 1,074,020 | 1,672,958 | 2,746,978 |
| 10 | Property Taxes | 1,268,490 | 228,144 | 1,496,634 | 0 | 1,496,634 |
| 11 | Other Taxes | 3,687,322 | (12,115) | 3,675,207 | 336,804 | 4,012,011 |
| 12 | Depreciation & Amortization | 9,434,311 | 129,240 | 9,563,551 | 0 | 9,563,551 |
| 13 | Total Operating Revenue Deductions | 59,220,599 | (832,559) | 58,388,040 | 2,018,536 | 60,406,575 |
| 14 | Net Operating Revenues | \$8,416,431 | (\$483,475) | \$7,932,956 | \$6,293,509 | \$14,226,465 |
| 15 | Total Rate Base | \$162,928,776 | \$23,550,167 | \$186,478,943 | \$0 | \$186,478,943 |
| 16 | Rate of Return | 5.17% | | 4.25% | | 7.63% |
| 17 | Return on Common Equity | 5.33% | | 3.48% | | 10.30% |

NW Natural
Adjustments to Test Period
Test Year Based on Twelve Months Ended September 30, 2018

| Line No. | Restating | Restating | Restating | Restating | Restating | Restating | Restating | Restating | Restating | Restating | Total Restating | Pro Forma | |
|-------------------------------------|--|------------------------------|----------------------|-----------------------------|---------------------------------------|--------------------------------|--|-----------------------|--------------------------|-------------------------|---------------------------------|------------------------|------------------|
| | Weather Normalized Gas Sales & Purchases (a) | Misc Revenues Adjustment (b) | Bonus Adjustment (c) | Property Tax Adjustment (d) | Uncollectible Accounts Adjustment (e) | Working Capital Adjustment (f) | Marketing and Cust. Comm. Adjustment (g) | Claims Adjustment (h) | Rate Case Adjustment (i) | Clearing Adjustment (j) | Total Restating Adjustments (k) | Pavroll Adjustment (l) | |
| Operating Revenues | | | | | | | | | | | | | |
| 1 | Sale of Gas | (3,593,725) | | | | | | | | | (3,593,725) | | |
| 2 | Transportation | (9,877) | | | | | | | | | (9,877) | | |
| 3 | Miscellaneous Revenues | | 2,287,568 | | | | | | | | 2,287,568 | | |
| 4 | Total Operating Revenues | (3,603,602) | 2,287,568 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (1,316,034) | 0 | |
| Operating Revenue Deductions | | | | | | | | | | | | | |
| 5 | Gas Purchased | (1,327,405) | | | | | | | | | (1,327,405) | | |
| 6 | Uncollectible Accrual | (3,804) | | | 21,280 | | | | | | 17,476 | | |
| 7 | Other Operating & Maintenance Expenses | | | (160,538) | | | (287,523) | 35,323 | 137,833 | 16,363 | (258,543) | 538,699 | |
| 8 | Total Operating & Maintenance Expense | (1,331,208) | 0 | (160,538) | 21,280 | 0 | (287,523) | 35,323 | 137,833 | 16,363 | (1,568,471) | 538,699 | |
| 9 | Federal Income Tax | (446,539) | 460,924 | 34,540 | (47,910) | (4,469) | (67,568) | 60,380 | (7,402) | (28,945) | (4,777) | (51,766) | (113,127) |
| 10 | Property Taxes | | | | 228,144 | | | | | | | 228,144 | |
| 11 | Other Taxes | (146,018) | 92,692 | | | | | | | | | (53,326) | |
| 12 | Depreciation & Amortization | | | | | | | | | | | 0 | |
| 13 | Total Operating Revenue Deductions | (1,923,765) | 553,616 | (125,998) | 180,234 | 16,811 | (67,568) | (227,143) | 27,921 | 108,888 | 11,586 | (1,445,419) | 425,572 |
| 14 | Net Operating Revenues | (1,679,837) | 1,733,952 | 125,998 | (180,234) | (16,811) | 67,568 | 227,143 | (27,921) | (108,888) | (11,586) | 129,385 | (425,572) |
| Average Rate Base | | | | | | | | | | | | | |
| 15 | Utility Plant in Service | | | (155,750) | | | 12,717,540 | | (2,895) | | 252,298 | 12,811,193 | |
| 16 | Accumulated Depreciation | | | | | | | | | | | 0 | |
| 17 | Net Utility Plant | 0 | 0 | (155,750) | 0 | 0 | 12,717,540 | 0 | (2,895) | 0 | 252,298 | 12,811,193 | 0 |
| 18 | Storage Gas | | | | | | | | | | | 0 | |
| 19 | Aid in Advance of Construction | | | | | | | | | | | 0 | |
| 20 | Leasehold Improvements | | | | | | | | | | | 0 | |
| 21 | Accumulated Deferred Income Taxes | | | | | | | | | | | 0 | |
| 22 | Total Rate Base | 0 | 0 | (155,750) | 0 | 0 | 12,717,540 | 0 | (2,895) | 0 | 252,298 | 12,811,193 | 0 |
| 23 | Interest Coordination | 0 | 0 | (3,940) | 0 | 0 | 321,754 | 0 | (73) | 0 | 6,383 | 324,123 | 0 |

NW Natural
Adjustments to Test Period
Test Year Based on Twelve Months Ended September 31

Page 2

| Line No. | Pro Forma | Pro Forma | Pro Forma | Pro Forma | Pro Forma | Pro Forma | Total Pro Forma | Total |
|-------------------------------------|---------------------------------|-----------------------------|---------------------------------------|----------------------------------|-----------------------|-------------------------|---------------------------------|-----------------------|
| | Payroll Overhead Adjustment (m) | Depreciation Adjustment (n) | Post Test Year Capital Adjustment (o) | EDIT Amortization Adjustment (p) | Holdco Adjustment (q) | Director Adjustment (r) | Total Pro Forma Adjustments (s) | Total Adjustments (t) |
| Operating Revenues | | | | | | | | |
| 1 | | | | | | | 0 | (3,593,725) |
| 2 | | | | | | | 0 | (9,877) |
| 3 | | | | | | | 0 | 2,287,568 |
| 4 | | 0 | 0 | 0 | 0 | 0 | 0 | (1,316,034) |
| Operating Revenue Deductions | | | | | | | | |
| 5 | | | | | | | 0 | (1,327,405) |
| 6 | | | | | | | 0 | 17,476 |
| 7 | 157,153 | | | | (37,467) | 19,160 | 677,545 | 419,002 |
| 8 | 157,153 | 0 | 0 | 0 | (37,467) | 19,160 | 677,545 | (890,926) |
| 9 | (41,656) | 35,583 | (116,861) | (2,919) | 7,868 | (4,024) | (235,136) | (286,902) |
| 10 | | | | | | | 0 | 228,144 |
| 11 | 41,210 | | | | | | 41,210 | (12,115) |
| 12 | | (169,444) | 298,684 | 0 | | | 129,240 | 129,240 |
| 13 | 156,708 | (133,861) | 181,823 | (2,919) | (29,599) | 15,136 | 612,860 | (832,559) |
| 14 | (156,708) | 133,861 | (181,823) | 2,919 | 29,599 | (15,136) | (612,860) | (483,475) |
| Average Rate Base | | | | | | | | |
| 15 | | | 10,189,608 | 0 | | | 10,189,608 | 23,000,801 |
| 16 | | | | | | | 0 | 0 |
| 17 | 0 | 0 | 10,189,608 | 0 | 0 | 0 | 10,189,608 | 23,000,801 |
| 18 | | | | | | | 0 | 0 |
| 19 | | | | | | | 0 | 0 |
| 20 | | | | | | | 0 | 0 |
| 21 | | | | 549,366 | | | 549,366 | 549,366 |
| 22 | 0 | 0 | 10,189,608 | 549,366 | 0 | 0 | 10,738,974 | 23,550,167 |
| 23 | 0 | 0 | 257,797 | 13,899 | 0 | 0 | 271,696 | 317,741 |

Northwest Natural Gas Company
Adjustments to Test Period
Test Year Based on Twelve Months Ended September 30, 2018
(\$000)

| Line No. | Income Tax Calculations | Weather Normalized Gas Sales & Purchases (a) | Misc Revenues Adjustment (b) | Bonus Adjustment (c) | Property Tax Adjustment (d) | Uncollectible Accounts Adjustment (e) | Working Capital Adjustment (f) | Marketing and Cust. Comm. Adjustment (g) | Claims Adjustment (h) | Rate Case Adjustment (i) | Clearing Adjustment (j) | Total Restating Adjustments (k) | Payroll Adjustment (l) |
|----------|---|--|------------------------------|----------------------|-----------------------------|---------------------------------------|--------------------------------|--|-----------------------|--------------------------|-------------------------|---------------------------------|------------------------|
| 1 | Book Revenues | (3,603,602) | 2,287,568 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 2 | Book Expenses before Deprec. & Interest | (1,477,226) | 92,692 | (160,538) | 228,144 | 21,280 | 0 | (287,523) | 35,323 | 137,833 | 16,363 | | 538,699 |
| 3 | State Tax Depreciation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 4 | Interest Expense (Income) | 0 | 0 | (3,940) | 0 | 0 | 321,754 | 0 | (73) | 0 | 6,383 | | 0 |
| 5 | Book/Tax Differences (Sched. M) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 6 | Federal Taxable Income | (2,126,376) | 2,194,876 | 164,478 | (228,144) | (21,280) | (321,754) | 287,523 | (35,250) | (137,833) | (22,746) | | (538,699) |
| 7 | Federal Income Tax [1] | (446,539) | 460,924 | 34,540 | (47,910) | (4,469) | (67,568) | 60,380 | (7,402) | (28,945) | (4,777) | | (113,127) |
| 8 | ITC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 9 | Current Federal Tax | (446,539) | 460,924 | 34,540 | (47,910) | (4,469) | (67,568) | 60,380 | (7,402) | (28,945) | (4,777) | | (113,127) |
| 10 | Deferred Income Tax - Federal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 11 | Deferred Income Tax - State | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 12 | ITC Restored (Deferred) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 13 | Total Federal Tax | (446,539) | 460,924 | 34,540 | (47,910) | (4,469) | (67,568) | 60,380 | (7,402) | (28,945) | (4,777) | | (113,127) |

Northwest Natural Gas Company
Adjustments to Test Period
Test Year Based on Twelve Months Ended September 30, 20
(\$000)

| Line No. | Income Tax Calculations | Payroll Overhead Adjustment (m) | Depreciation Adjustment (n) | Post Test Year Capital Adjustment (o) | EDIT Amortization Adjustment (p) | Washington Hedging Adjustment (q) | Washington Hedging Adjustment (r) | Total Pro Forma Adjustments (s) | Total Adjustments (t) |
|----------|---|---------------------------------|-----------------------------|---------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|---------------------------------|-----------------------|
| 1 | Book Revenues | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2 | Book Expenses before Deprec. & Interest | 198,364 | 0 | 0 | 0 | (37,467) | 19,160 | | |
| 3 | State Tax Depreciation | 0 | (169,444) | 298,684 | 0 | 0 | 0 | | |
| 4 | Interest Expense (Income) | 0 | 0 | 257,797 | 13,899 | 0 | 0 | | |
| 5 | Book/Tax Differences (Sched. M) | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6 | Federal Taxable Income | (198,364) | 169,444 | (556,481) | (13,899) | 37,467 | (19,160) | | |
| 7 | Federal Income Tax [1] | (41,656) | 35,583 | (116,861) | (2,919) | 7,868 | (4,024) | | |
| 8 | ITC | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 9 | Current Federal Tax | (41,656) | 35,583 | (116,861) | (2,919) | 7,868 | (4,024) | | |
| 10 | Deferred Income Tax - Federal | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 11 | Deferred Income Tax - State | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 12 | ITC Restored (Deferred) | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 13 | Total Federal Tax | (41,656) | 35,583 | (116,861) | (2,919) | 7,868 | (4,024) | | |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Weather Normalized Gas Sales and Purchases Adjustment

| Revenues | Actual | | | Normalized | | | Adjustment |
|--|------------------|-------------------------------|---------------------|------------------|-------------------------------|---------------------|---------------|
| | Therm Deliveries | Average Class Price Per Therm | Revenues and Margin | Therm Deliveries | Average Class Price Per Therm | Revenues and Margin | |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) |
| Sales Volumes and Revenues | | | | | | | |
| 1 Residential | 50,068,986 | 0.93166 | \$46,647,052 | 50,368,669 | 0.87489 | \$44,067,223 | |
| 2 Commercial | 21,738,480 | 0.83207 | \$18,087,986 | 21,869,677 | 0.78588 | \$17,187,046 | |
| 3 Industrial Firm | 3,052,386 | 0.64441 | \$1,966,975 | 3,064,902 | 0.62388 | \$1,912,138 | |
| 4 Interruptible | 1,319,198 | 0.41212 | \$543,668 | 1,319,198 | 0.42016 | \$554,280 | |
| 5 Total Sales of Gas Revenues | 76,179,050 | | \$67,245,682 | 76,622,447 | | \$63,720,688 | (\$3,524,994) |
| 6 Unbilled amounts | 117,158 | | \$68,731 | | | | (\$68,731) |
| 7 Unaccounted For Gas | 228,702 | | | | | | |
| Transportation Volumes and Revenues | | | | | | | |
| 8 Firm | 7,065,720 | 0.16811 | \$1,187,790 | 7,065,720 | 0.16734 | \$1,182,353 | |
| 9 Interruptible | 10,909,907 | 0.08649 | \$943,569 | 10,908,382 | 0.08609 | \$939,123 | |
| 10 Special Contracts - Firm | 2,813,155 | 0.08518 | \$239,621 | 2,813,155 | 0.08518 | \$239,628 | |
| 11 Total Transportation | 20,788,782 | | \$2,370,981 | 20,787,257 | | \$2,361,104 | (\$9,877) |
| 12 Total Deliveries and Revenues | 97,313,692 | | \$69,685,394 | 97,409,704 | | \$66,081,791 | (\$3,603,602) |
| Gas Costs | | | | | | | |
| 13 Demand Charges (Net of Deferral) | | | \$8,770,697 | | | \$8,063,564 | |
| 14 Commodity Charges (Net of Deferral) | | | 19,856,051 | | | 16,381,114 | |
| 15 Commodity and Demand Amortizations | | | (2,854,665) | | | 0 | |
| 16 Total Cost of Gas | | | \$25,772,083 | | | \$24,444,678 | (\$1,327,405) |
| 17 Total Margin | | | \$43,913,311 | | | \$41,637,113 | |

Worksheet b

NW Natural
Washington Rate Case
Test Year Based on Twelve Months Ended September 30, 2018
Adjustments to Miscellaneous Revenues

| <u>Line No.</u> | | <u>Actual</u> (a) | <u>Normalized</u> (b) | <u>Adjustment</u> (c) |
|--|--|----------------------|--------------------------|--------------------------|
| Revenue & Technical Adjustments | | | | |
| 1 | DSM - Amortization | (\$2,032,720) | \$0 | \$2,032,720 |
| 2 | WA GREAT, WA-LIEE | (\$304,443) | \$0 | \$304,443 |
| 3 | Subtotal | (\$2,337,162) | \$0 | \$2,337,162 |
| Other Miscellaneous Revenues | | | | |
| 4 | FORFEITED DISCOUNTS-LATE PAYMENT CHARGE | \$89,244 | \$90,177 | \$933 |
| 5 | MISC SERVICE REVENUES-AUTOMATED PAYMENT | \$5,723 | \$5,951 | \$228 |
| 6 | MISC SERVICE REVENUES-DELINQ RECONN FEE | \$1,500 | \$1,500 | \$0 |
| 7 | MISC SERVICE REVENUES-FIELD COLLECTION C | \$33,220 | \$33,220 | \$0 |
| 8 | MISC SERVICE REVENUES-GAS DIVERSIONS | \$1,383 | \$1,383 | \$0 |
| 9 | MISC SERVICE REVENUES-RECONN CHG-CR-AFTE | \$34,700 | \$34,433 | (\$267) |
| 10 | MISC SERVICE REVENUES-RECONN CHG-CR-DURI | \$15,900 | \$15,900 | \$0 |
| 11 | MISC SERVICE REVENUES-RECONN CHG-SEAS-AF | \$1,200 | \$1,717 | \$517 |
| 12 | MISC SERVICE REVENUES-RECONN CHG-SEAS-DU | \$550 | \$550 | \$0 |
| 13 | MISC SERVICE REVENUES-RETURNED CHECK CHA | \$11,658 | \$11,658 | \$0 |
| 14 | MISC SERVICE REVENUES-SEAS RECONN FEE | \$300 | \$300 | \$0 |
| 15 | MISC SERVICE REVENUES-SUMMARY BILL SVCS | \$0 | (\$8) | (\$8) |
| 16 | OTHER GAS REVENUES-METER RENTALS | \$18,356 | \$19,365 | \$1,008 |
| 17 | OTHER GAS REV-LNG SALES & OTHER MISC REV | \$600 | \$1,370 | \$770 |
| 18 | RENT FROM GAS PROPERTY-RENT - UTILITY PR | \$74,465 | \$21,689 | (\$52,776) |
| 13 | Subtotal | \$288,798 | \$239,204 | (\$49,594) |
| 14 | Total | (\$2,048,364) | \$239,204 | \$2,287,568 |

Northwest Natural Gas Company
Test Year Based on Twelve Months Ended September 30, 2018
Bonus Adjustment

| <u>Line No.</u> | <u>2015 paid in 2016</u> | <u>2016 paid in 2017</u> | <u>2017 paid in 2018</u> | <u>Three Year Average</u> | <u>Test Year Accrual</u> | <u>Adjustment</u> | |
|------------------------------------|---|--------------------------|--------------------------|---------------------------|--------------------------|-------------------|--------------------|
| | (a) | (b) | (c) | (d) | (e) | (f)=(d)-(e) | |
| <hr/> Officers/Exempt <hr/> | | | | | | | |
| 1 | Performance Bonus - O & M | \$6,213,593 | \$5,597,391 | \$6,107,412 | \$5,972,799 | \$6,572,483 | (\$599,685) |
| 2 | Performance Bonus - Construction | 2,580,181 | 2,594,415 | 2,952,686 | 2,709,094 | 3,587,548 | (878,454) |
| <hr/> Clerical/Hourly <hr/> | | | | | | | |
| 3 | Key Goals Bonus - O & M | 0 | 597,200 | 1,105,922 | 567,707 | 1,400,378 | (832,671) |
| 4 | Key Goals Bonus - Construction | 0 | 358,883 | 534,668 | 297,850 | 764,387 | (466,537) |
| 5 | Total | <u>8,793,774</u> | <u>9,147,889</u> | <u>10,700,688</u> | <u>9,547,450</u> | <u>12,324,796</u> | <u>(2,777,346)</u> |
| 6 | Total Adjusted O & M (line 3 + line 9) | | | | | | (\$1,432,355) |
| 7 | Washington Allocation Factor | | | | Employee Cost | | <u>11.21%</u> |
| 8 | Adjustment to Washington - O&M | | | | | | <u>(\$160,538)</u> |
| 9 | Total Adjusted Construction (line 6 + line 12) | | | | | | (\$1,344,991) |
| 10 | Washington Allocation Factor | | | | Gross Plant | | <u>11.58%</u> |
| 11 | Adjustment to Washington - Rate Base | | | | | | <u>(\$155,750)</u> |

Adjustment takes expense from test period accrual to 3 year paid average

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Property Tax Adjustment

Worksheet d

| <u>Line</u> <u>No.</u> | <u>Expense</u> <u>(a)</u> |
|--|------------------------------|
| 1 Property Taxes - Test Period Expense | \$1,268,490 |
| 2 Property Taxes - Paid During 2018 | 1,509,613 |
| 3 Property Taxes - Capitalized | <u>12,979</u> |
| 4 Adjustment | <u><u>\$228,144</u></u> |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Uncollectible Accounts Adjustments

Worksheet e

| Line No. | 2016 - 2018 Total | 12 Months Ended September | | | |
|-------------------------------------|--|---------------------------|--------------------|--------------------|--------------------|
| | | 2018 Actual | 2017 Actual | 2016 Actual | |
| | | (a) | (b) | (c) | (d) |
| Gas Revenues | | | | | |
| 1 | Residential | \$1,279,892,130 | \$422,699,759 | \$454,168,194 | \$403,024,176 |
| 2 | Commercial | 636,944,211 | 208,617,626 | 227,807,903 | 200,518,682 |
| 3 | Industrial | 65,643,595 | 21,527,710 | 22,807,945 | 21,307,940 |
| 4 | Interruptible | 62,809,074 | 20,395,258 | 22,239,876 | 20,173,941 |
| 5 | Total | 2,045,289,010 | 673,240,352 | 727,023,918 | 645,024,739 |
| Net Write-Offs | | | | | |
| 6 | Residential | 1,732,214 | 430,995 | 694,701 | 606,517 |
| 7 | Commercial | 275,086 | 86,089 | 95,298 | 93,699 |
| 8 | Industrial | 151,544 | 2,307 | 27,123 | 122,114 |
| 9 | Interruptible | 0 | 0 | 0 | 0 |
| 10 | Total | 2,158,844 | 519,392 | 817,122 | 822,330 |
| Write-Off % - 3-Year Average | | | | | |
| 11 | Residential | 0.135% | 0.102% | 0.153% | 0.150% |
| 12 | Commercial | 0.043% | 0.041% | 0.042% | 0.047% |
| 13 | Industrial | 0.231% | 0.011% | 0.119% | 0.573% |
| 14 | Interruptible | 0.000% | 0.000% | 0.000% | 0.000% |
| 15 | Weighted Total [1] | 0.106% | 0.077% | 0.112% | 0.127% |
| Normalized Uncollectible | | | | | |
| 16 | Residential | \$572,084 | | | |
| 17 | Commercial | 90,099 | | | |
| 18 | Industrial | 49,699 | | | |
| 19 | Interruptible | 0 | | | |
| 20 | Total | \$711,882 | | | |
| 21 | Allocation Factor (Customers - All) | 11.16% | | | |
| 22 | Washington Normalized Amount | \$79,446 | | | |
| 23 | Washington Allocation of Accrued Amount | \$58,166 | | | |
| 24 | Adjustment (Normalized less Accrued) | \$21,280 | | | |

[1] Weighted uncollectible rate of

0.106% is used on page 1, column (b)

NW Natural
Washington Rate Case
Working Capital Calculation

Worksheet f

| | | <u>AMA</u> |
|----|--|-----------------------------|
| | Average Invested Capital | |
| 1 | Common Equity | 776,767,236 |
| 2 | Preferred Stock | - |
| 3 | Miscellaneous Debt | 813,733,020 |
| 4 | Deferred ITC | 322 |
| 5 | Deferred Liabilities | 16,505,113 |
| 6 | Total Invested Capital | <u>1,607,005,690</u> |
| | Average Investments | |
| | Utility Operating Investments | |
| 7 | Plant in Service | 2,981,614,839 |
| 8 | Accumulated Depreciation | (1,327,857,300) |
| 9 | Deferred Income Taxes | (362,148,977) |
| 10 | Gas Stored Underground - Cushion Gas | 18,056,545 |
| 11 | Property Held for Future Use | 960,295 |
| 12 | Customer Advances | (5,072,451) |
| 13 | Contributions in Aid of Construction | (4,207,252) |
| 14 | Investment in Gas Reserves | 114,848,596 |
| 15 | Total Operating Investments | <u>1,416,194,296</u> |
| | Other Investments | |
| 16 | Construction Work In Process | 186,480,461 |
| 17 | Non-Utility Property | 52,659,384 |
| 18 | Accumulated Depreciation - non utility | (19,054,381) |
| 19 | Deferred Income Tax - non-utility & Oregon | (130,058,467) |
| 20 | Investments in Subsidiary Companies | 58,304,491 |
| 21 | Temporary Cash Investments | 3,298,275 |
| 22 | Deferred Gas Costs | (21,270,245) |
| 23 | Other Deferred Debits | 113,293,024 |
| 24 | Total Other Investments | <u>243,652,542</u> |
| 25 | Total Average Investments (In 15 + In 24) | 1,659,846,838 |
| 26 | Less CWIP (In 16) | (186,480,461) |
| 27 | Less Deferred Gas Costs (In 22) | 21,270,245 |
| 28 | Total Base Investment - System | <u>1,494,636,622</u> |
| 29 | Investor Supplied Working Capital (In 6 - In 28) | \$ 112,369,069 |
| 30 | Less Working Gas Inventory | 34,231,890 |
| 31 | Allowable Working Capital - System | <u>\$ 78,137,179</u> |
| 32 | Working Capital Percentage Allowable (In 31 / In 28) | 5.27% |
| 33 | Washington Rate Base (excludes WC - includes adjustments) | \$173,761,403 |
| 34 | Allowable Investor Supplied Working Capital (In 33 X In 32) | \$ 9,150,577 |
| 35 | Working Gas Inventory | \$ 34,231,890 |
| 36 | Inventory allocation % - firm delivered | 10.42% |
| 37 | Washington Gas Inventory (In 35 X In 36) | <u>\$ 3,566,963</u> |
| 38 | Total Working Capital Allowance (In 37 + In 34) | <u><u>\$ 12,717,540</u></u> |
| | Washington Rate Base (excludes WC - includes adjustments) | \$173,761,403 |

Worksheet g

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Marketing and Customer Communications Adjustment

| Line No. | Marketing | Washington Allocated Amount (a) | Disallowance Percent (b) | Disallowed Amount (c) |
|----------|---|--|---|--|
| 1 | Marketing Expenses - Account 912 | <u>\$236,575</u> | 100% | <u>(\$236,575)</u> |
| | Advertising | System Expensed Amount (a) | Allocation Factor (Residential Customers) (b) | Disallowed Washington Allocated Amount (c) |
| 2 | Expenses not qualifying under 480-90-223 | <u>\$452,073</u> | 11.27% | <u>(\$50,949)</u> |
| | <u>Total Marketing and Advertising</u> | | | |
| 3 | Total Adjustment for Marketing & Communications | | | <u>(\$287,523)</u> |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Claims Expense Adjustment

Worksheet h

| <u>Line No.</u> | <u>O&M Expense</u> (a) | <u>Construction</u> (b) |
|---|-------------------------------|----------------------------|
| 1 Expensed during Test period | \$112,509 | \$145,967 |
| Normalized Expenses | | |
| 2 Actual Claims - Ordinary (Paid) | 186,612 | 120,967 |
| 3 3-Year Average Claims - Extraordinary 1/ | 240,998 | 0 |
| 4 Subtotal | <u>427,610</u> | <u>120,967</u> |
| 5 Adjustment - System (line 4 - line 1) | 315,101 | (25,000) |
| 6 Allocation to Washington (O&M on 3-factor, const on gross plant) | <u>11.21%</u> | <u>11.58%</u> |
| 7 Adjustment | <u><u>\$35,323</u></u> | <u><u>(\$2,895)</u></u> |

| 1/ Extraordinary Claims | <u>TME December</u> |
|-------------------------|---------------------|
| TME 9/30/16 | 298,383 |
| TME 9/30/17 | 358,715 |
| TME 9/30/18 | <u>65,897</u> |
| 3-Year Average | 240,998 |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Rate Case Expense Adjustment

Worksheet i

| <u>Line</u> <u>No.</u> | <u>O&M Expense</u> <u>(a)</u> |
|---|--------------------------------------|
| 1 Outside Services - Washington Rate Case | <u>\$413,500</u> |
| 2 3-Year Average for rate case frequency | <u>\$137,833</u> |
| Return on Equity Consultant | 83,500 |
| Cost of Service / Rate Design Consultant | 130,000 |
| Outside Legal | <u>200,000</u> |
| Total | 413,500 |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Elimination of Clearing Account Balances

Worksheet j

| <u>Line No.</u> | <u>Amount</u> |
|------------------------------|---------------|
| 1 Adjustment to O&M | \$16,363 |
| 2 Adjustment to Construction | \$252,298 |

Northwest Natural Gas Company
 Test Year Based on Twelve Months Ended September 30, 2018
 Payroll Adjustment - Excluding Bonuses

| Line No. | Total 1/ (a) | Officers 2/ (b) | NBU (c) | BU (d) |
|--|-----------------|--------------------|------------|------------|
| 1 12 Months Payroll - 9/30/2018 | 103,089,048 | 3,681,313 | 51,335,877 | 48,071,858 |
| 2 Payroll - Annualized 3/ | 104,449,105 | 3,620,846 | 51,757,006 | 49,071,253 |
| 3 Annualized 2018 Wage Increases (5 months) NBU | 791,392 | | 791,392 | |
| 4 Annualized 2019 Wage Increases (12 months) NBU | 2,101,936 | | 2,101,936 | |
| 5 Annualized 2017 Wage Increases (2 months) BU | 278,137 | | | 278,137 |
| 6 Adjust 2018 Wage Increases (12 months) BU | 1,727,229 | | | 1,727,229 |
| 7 Adjust 2019 Wage Increases (12 months) BU | 1,787,682 | | | 1,787,682 |
| 8 Payroll - Normalized | 111,135,479 | 3,620,846 | 54,650,334 | 52,864,300 |
| 9 O&M Payroll Factor | 63.1% | 72.5% | 64.7% | 60.8% |
| 10 O&M Payroll - Normalized | 70,125,373 | 2,625,113 | 35,358,766 | 32,141,494 |
| 11 O&M Payroll - Actual | 65,110,954 | 2,668,952 | 33,214,312 | 29,227,690 |
| 12 Adjustment to O & M Payroll - System | 5,014,419 | (43,839) | 2,144,454 | 2,913,804 |
| 13 Washington Allocation for O&M Payroll | 10.74% | | | |
| 14 Adjustment to O & M Payroll - Washington | \$538,699 | | | |

Notes:

| | |
|--|-------|
| 2017 BU Salary Adjustment December 1, 2017 | 3.50% |
| 2018 NBU Adjustment March 1, 2018 | 3.75% |
| 2018 BU Salary Adjustment December 1, 2018 | 3.50% |
| 2019 NBU Adjustment March 1, 2019 | 4.00% |
| 2019 BU Salary Adjustment December 1, 2019 | 3.50% |

- 1/ Total and Officer columns included to determine company O&M % for some adjustments
 2/ Normalized to test year average pay per executive times ending 12 Officers
 3/ Amounts reflect average salaries at end of period count.

Northwest Natural Gas Company
Test Year Based on Twelve Months Ended September 30, 2018
Payroll Adjustment - Excluding Bonuses
Annualized Wages and Salaries

Worksheet I (2)

| <u>Line No.</u> | <u>Officers</u> | <u>NBU</u> | <u>BU</u> |
|--|--------------------|---------------------|---------------------|
| | (a) | (b) | (c) |
| 1 Adjusted Employee Count - Year-end 1/ | 12.0 | 508.3 | 630.2 |
| 2 Average Employee Count - Test Period | 12.2 | 504.2 | 617.4 |
| 3 Test Year Payroll | \$3,681,313 | \$51,335,877 | \$48,071,858 |
| 4 Average Payroll per Employee (line 3 / line 2) | \$301,737 | \$101,816 | \$77,865 |
| 5 Payroll Based on Year-end Employees (line 4 * line 1) | <u>\$3,620,846</u> | <u>\$51,757,006</u> | <u>\$49,071,253</u> |
| | <u>Officers</u> | <u>NBU</u> | <u>BU</u> |
| 2017 October | 12.0 | 489.5 | 596.4 |
| 2017 November | 12.0 | 494.6 | 604.4 |
| 2017 December | 11.9 | 499.7 | 612.3 |
| 2018 January | 12.0 | 501.3 | 617.6 |
| 2018 February | 12.0 | 505.5 | 611.8 |
| 2018 March | 12.5 | 506.0 | 619.2 |
| 2018 April | 12.0 | 507.5 | 620.5 |
| 2018 May | 12.0 | 510.0 | 619.4 |
| 2018 June | 12.0 | 510.2 | 622.2 |
| 2018 July | 12.0 | 508.7 | 621.4 |
| 2018 August | 13.0 | 509.1 | 633.0 |
| 2018 September | 13.0 | 508.3 | 630.2 |
| Average | <u>12.2</u> | <u>504.2</u> | <u>617.4</u> |

1/ Reflects expected retirement of HR executive

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Payroll Overhead Adjustment

Worksheet m

| <u>Line No.</u> | <u>System Adjustment Amount</u> (a) | <u>Washington Allocation Factor 1/</u> (b) | <u>Washington Adjustment Amount</u> (c) |
|---|--|---|--|
| <u>Health and Life Insurance Adjustment</u> | | | |
| 1 | Health and Life O&M Costs - Actual Test Period O&M | | 11,830,300 |
| 2 | Health and Life O&M Costs - Current Cost | | <u>12,199,939</u> |
| 3 | Total Adjustment | | <u><u>\$369,639</u></u> |
| | | 10.74% | 39,710 |
| <u>Pension Adjustment - Washington Allocated Costs</u> | | | |
| 4 | Pension Costs - Test Period Actual O&M | | 1,844,666 |
| 5 | Pension Costs - Current Cost (Calendar 2018) | | <u>1,962,109</u> |
| 6 | Total Adjustment | | <u><u>\$117,443</u></u> |
| | | 100.00% | <u>117,443</u> |
| 7 | Total O&M Adjustment | | <u><u>157,153</u></u> |
| Note: Pension administrative costs and Western States not normalized | | | |
| <u>Payroll Tax Adjustment</u> | | | |
| 8 | Adjusted Payroll - O&M | | 70,125,373 |
| 9 | Test Period Payroll - O&M | | <u>65,110,954</u> |
| 10 | Incremental Payroll | | 5,014,419 |
| 11 | FICA Tax Rate | | <u>7.65%</u> |
| 12 | Incremental Payroll Taxes | | <u><u>\$383,603</u></u> |
| | | 10.74% | <u><u>41,210</u></u> |

1/ Payroll Cost Allocation Factor

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Depreciation Adjustment

Worksheet n

| <u>Line</u> <u>No.</u> | | <u>Expense</u> <u>(a)</u> |
|---------------------------|---|------------------------------|
| 1 | Depreciation Expense - Test Year Actual | 9,434,311 |
| 2 | Depreciation Expense - New Rates | <u>9,264,867</u> |
| 3 | Depreciation Expense Adjustment | <u><u>(169,444)</u></u> |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Washington Post Test-Year Capital Projects

Worksheet o

| <u>Line No.</u> | | <u>Amount</u> (a) |
|---------------------|----------------------------------|----------------------|
| 1 | Addition to Rate Base | 10,189,608 |
| 2 | Addition to Depreciation Expense | 298,684 |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Excess Deferred Tax Amortization

Worksheet p

| <u>Line No.</u> | <u>Expense (a)</u> |
|--|------------------------|
| 1 Plant Related Excess Deferred Taxes | 400,000 |
| 2 Non-Plant Related Excess Deferred Taxes | (33,756) |
| 3 Riders external to Rate Case Revenue Requirement | <u>366,244</u> |
| 4 Reduction of Deferred Taxes - Rate Base (3-Year Ave) | <u>549,366</u> |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Holdco Adjustment

Worksheet q

Washington

| <u>Line No.</u> | <u>O&M Expense</u> (a) | | <u>Washington</u> |
|-----------------|-------------------------------|------------------------------|-------------------|
| 1 | 425,738 | 42014 SEC REPORTING | 13 |
| 2 | <u>(14,475)</u> | 42014 SEC REPORTING | 303 |
| | | 42014 SEC REPORTING | 72,806 |
| 3 | 229,915 | 44010 FIN PLANNING & BUDGE | 113,861 |
| 4 | <u>(22,991)</u> | 46010 CORP SECRETARY | - |
| | | 46010 CORP SECRETARY | (433) |
| | | 46010 CORP SECRETARY | 42 |
| | | 46010 CORP SECRETARY | 19,763 |
| | | 46020 SHAREHOLDER SVCS | 1,276 |
| | | 46020 SHAREHOLDER SVCS | 2,466 |
| | | 46020 SHAREHOLDER SVCS | 16,594 |
| | | 46020 SHAREHOLDER SVCS | 23,300 |
| | | 46030 CORP ETHICS & COMPL | 18,380 |
| | | 48010 INVESTOR RELATIONS | 45,293 |
| | | 72500 INTERNAL AUDITING | 105,976 |
| 5 | <u>(37,467)</u> | 73600 VP & CORPORATE SECTY | <u>6,100</u> |
| | | Subject to Allocation (3.4) | 425,738 |
| | | 46010 CORP SECRETARY | <u>229,915</u> |
| | | Subject to Allocation (10.0) | 229,915 |

NW Natural
Test Year Based on Twelve Months Ended September 30, 2018
Director Adjustment

Worksheet r

| <u>Line No.</u> | <u>O&M Expense (a)</u> |
|---|--------------------------------|
| 1 Washington Allocated Director Expense | 229,915 |
| 2 Cost per Director (12 Directors) | 19,160 |
| 3 Adjustment for Additional Director | <u>19,160</u> |