

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
DOCKET DG 17-070  
SETTLEMENT REVENUE REQUIREMENT SCHEDULES AND WORKPAPERS**

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
COMPUTATION OF REVENUE DEFICIENCY AND REVENUE REQUIREMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) AMOUNT	(4) SETTLEMENT UPDATE	(5) CHANGE
1	Rate Base	Schedule RevReq-5	\$ 131,491,801	\$ 131,660,357	\$ 168,556
2	Rate of Return	Schedule RevReq-6	8.30%	7.59%	-0.71%
3	Income Required	Line 1 * Line 2	10,913,819	9,993,021	(920,798)
4	Adjusted Net Operating Income	Schedule RevReq-2	8,048,949	8,415,965	367,016
5	Deficiency	Line 3 - Line 4	2,864,870	1,577,056	(1,287,814)
6	Income Tax Effect	Line 7 - Line 5	1,863,575	1,025,862	(837,712)
7	Revenue Deficiency	1.6505 (Schedule RevReq-1-1) * Line 5	\$ 4,728,445	\$ 2,602,918	\$ (2,125,526)

FERC METHOD  
REVENUE REDUCTION  
AT NEW STATE  
& FEDERAL TAX RATE

Revenue Reduction Per FERC Formula = D - D\*(E/F)

D (Composite Income Taxes)	\$ 3,920,952
E (New Effective Tax Rate Factor)	0.3744
F (Old Effective Tax Rate Factor)	0.6505
Revenue Reduction	\$ 1,664,189

Revenue Requirement at Lower Tax Rate

Settlement Revenue Deficiency	\$ 2,602,918
Revenue Reduction Due to Lower State & Federal Tax Rates	1,664,189
Revenue Deficiency After Lower State & Federal Tax Rates	\$ 938,730
2018 Step Adjustment Revenue Requirement at Lower State & Federal Tax Rates	2,337,446
Grand Total Revenue Requirement Including 2018 Step Adjustment at Lower Tax Rate	\$ 3,276,176

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**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
COMPUTATION OF GROSS-UP FACTOR FOR REVENUE REQUIREMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) RATE</b>	<b>(3) OLD RATE</b>	<b>(4) NEW RATE</b>
1	Federal Income Tax Rate	Old - 34% / New - 21%	0.3400	0.2100
2	State Income Tax Rate	Old - 8.2% / New - 7.9%	0.0820	0.0790
3	Federal Benefit of State Income Tax	-(Line 1 * Line 2)	<u>(0.0279)</u>	<u>(0.0166)</u>
4	Northern Effective Tax Rate	(Line 1 + Line 2 + Line 3)	<u>0.3941</u>	<u>0.2724</u>
5	Gross-Up Factor	(1 / 1 - Line 4)	<u><u>1.6505</u></u>	<u><u>1.3744</u></u>

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
OPERATING INCOME STATEMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) TEST YEAR 12 MONTHS ENDED 12/31/2016	LESS		(5) TEST YEAR DISTRIBUTION, PROD. & OH.	(6) TEST YEAR DISTRIBUTION	(7) TEST YEAR PROD. & OH.	(8) CALENDAR YEAR 2015 <sup>(3)</sup>	(9) CALENDAR YEAR 2014 <sup>(3)</sup>
			(3) COST OF GAS EXCLUDING PROD. & OH. <sup>(1)</sup>	(4) OTHER FLOWTHROUGH <sup>(2)</sup>					
<b>Operating Revenues:</b>									
1	Total Sales	\$ 64,072,405	\$ 29,435,850	\$ 2,017,620	\$ 32,618,935	\$ 31,680,906	\$ 938,029	\$ 75,705,750	\$ 75,803,435
2	Total Other Operating Revenues	874,936	(104,143)	-	979,079	979,079	-	436,168	87,436
3	Total Operating Revenues	\$ 64,947,341	\$ 29,331,707	\$ 2,017,620	\$ 33,598,014	\$ 32,659,985	\$ 938,029	\$ 76,141,918	\$ 75,890,871
<b>Operating Expenses:</b>									
4	Production	\$ 29,536,386	\$ 29,182,381	\$ (55,172)	\$ 409,176	\$ 409,176	\$ -	\$ 40,209,523	\$ 41,732,970
5	Transmission	394,724	-	-	394,724	394,724	-	372,390	331,810
6	Distribution	2,994,785	-	-	2,994,785	2,994,785	-	3,271,999	3,082,947
7	Customer Accounting	1,854,455	129,165	-	1,725,290	1,725,290	-	2,226,964	2,155,862
8	Customer Service	1,349,005	-	1,346,436	2,570	2,570	-	1,345,356	1,169,254
9	Administrative & General	6,359,650	-	248,135	6,111,515	6,111,515	-	6,386,621	5,120,283
10	Depreciation	6,118,814	-	-	6,118,814	6,118,814	-	5,565,273	5,003,869
11	Amortizations	74,496	-	-	74,496	74,496	-	320,945	321,371
12	Taxes Other Than Income	3,763,930	-	-	3,763,930	3,763,930	-	3,240,165	3,354,140
13	Federal Income Tax	3,227,137	-	-	3,227,137	3,227,137	-	(226,650)	177,105
14	State Income Tax	(269,173)	-	-	(269,173)	(269,173)	-	962,594	(981,197)
15	Deferred Federal & State Income Taxes	4,699	-	-	4,699	4,699	-	2,660,085	4,638,434
16	Interest on Customer Deposits	13,346	-	-	13,346	13,346	-	13,444	13,619
17	Total Operating Expenses	\$ 55,422,256	\$ 29,311,546	\$ 1,539,399	\$ 24,571,311	\$ 24,571,311	\$ -	\$ 66,348,711	\$ 66,120,468
18	Net Operating Income	\$ 9,525,085	\$ 20,161	\$ 478,221	\$ 9,026,704	\$ 8,088,674	\$ 938,029	\$ 9,793,207	\$ 9,770,403

**Notes**

(1) Refer to Workpaper - Cost of Gas

(2) Refer to Workpaper - Flowthrough Detail. Consists of Energy Efficiency, Environmental Response Costs, Residential Low Income Assistance, Rate Case Costs, and Recoupment

(3) Calendar Years 2015 and 2014 represents Total Company (i.e., Flowthrough and Distribution).

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PRO FORMA DISTRIBUTION OPERATING INCOME STATEMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) TEST YEAR DISTRIBUTION, PROD. & OH.	(3) PRO FORMA ADJUSTMENTS	(4) TEST YEAR DISTRIBUTION, PROD. & OH. PRO FORMA	(5) PROOF (6)	
					REVENUE REQUIREMENT	PRO FORMA RATE RELIEF
	Operating Revenues:					
1	Total Sales	\$ 32,618,935	\$ 1,460,779	\$ 34,079,714	\$ 2,602,918	\$ 36,682,633
2	Total Other Operating Revenues	979,079	-	979,079	-	979,079
3	Total Operating Revenues	\$ 33,598,014	\$ 1,460,779	\$ 35,058,793	\$ 2,602,918	\$ 37,661,711
	Operating Expenses:					
4	Production	\$ 409,176	\$ 67,212	\$ 476,388	\$ -	\$ 476,388
5	Transmission	394,724	-	394,724	-	394,724
6	Distribution	2,994,785	62,304	3,057,089	-	3,057,089
7	Customer Accounting	1,725,290	77,497	1,802,787	-	1,802,787
8	Customer Service	2,570	-	2,570	-	2,570
9	Administrative & General	6,111,515	502,457	6,613,972	-	6,613,972
10	Depreciation	6,118,814	686,756	6,805,570	-	6,805,570
11	Amortizations	74,496	309,092	383,589	-	383,589
12	Taxes Other Than Income	3,763,930	433,773	4,197,704	-	4,197,704
13	Federal Income Tax	3,227,137	(53,515)	3,173,623	812,423	3,986,046
14	State Income Tax	(269,173)	(14,059)	(283,232)	213,439	(69,793)
15	Deferred Federal & State Income Taxes	4,699	-	4,699	-	4,699
16	Interest on Customer Deposits	13,346	-	13,346	-	13,346
17	Total Operating Expenses	\$ 24,571,311	\$ 2,071,518	\$ 26,642,828	\$ 1,025,862	\$ 27,668,690
18	Net Operating Income	\$ 9,026,704	\$ (610,739)	\$ 8,415,965	\$ 1,577,056	\$ 9,993,021

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
SUMMARY OF ADJUSTMENTS  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3

LINE NO.	(1) DESCRIPTION	(2) CLASSIFICATION	(3) SCHEDULE NO.	(4) AMOUNT	(5) SETTLEMENT UPDATE	(6) TOTAL ADJUSTMENT
<b>Revenue Adjustments</b>						
1	Weather Normalization	Dist Rev	Schedule RevReq-3-1	\$ 897,399	\$ -	\$ 897,399
2	Residential Low Income	Dist Rev	Schedule RevReq-3-2	366,440	-	366,440
3	Unbilled Revenue	Dist Rev	Schedule RevReq-3-3	151,597	-	151,597
4	Non-Distribution Bad Debt	Dist Rev	Schedule RevReq-3-4	2,498	-	2,498
5	Special Contract Customer Revenue Adjustment	Dist Rev	Schedule RevReq-3-5	42,845	-	42,845
6	Total Revenue Adjustments			<u>\$ 1,460,779</u>	<u>\$ -</u>	<u>\$ 1,460,779</u>
<b>Operating &amp; Maintenance Expense Adjustments</b>						
7	Production Expense (O&M)	Prod	Schedule RevReq-3-6	\$ 67,212	\$ -	\$ 67,212
8	Payroll	Dist	Schedule RevReq-3-7	273,315	(211,011)	62,304
9	Distribution Bad Debt	Cust Acct	Schedule RevReq-3-8	89,445	(14,447)	74,999
10	Non-Distribution Bad Debt	Cust Acct	Schedule RevReq-3-4	2,498	-	2,498
11	Medical & Dental Insurances	A&G	Schedule RevReq-3-9	(11,878)	3,347	(8,531)
12	Pension	A&G	Schedule RevReq-3-10	37,510	-	37,510
13	PBOP	A&G	Schedule RevReq-3-10	150,217	-	150,217
14	SERP	A&G	Schedule RevReq-3-10	28,544	-	28,544
15	401K	A&G	Schedule RevReq-3-10	21,621	(11,027)	10,594
16	Property & Liability Insurances	A&G	Schedule RevReq-3-11	48,435	(22,751)	25,684
17	Postage	A&G	Schedule RevReq-3-12	4,415	-	4,415
18	NH PUC Assessment	A&G	Schedule RevReq-3-13	219,575	58,314	277,889
19	Inflation Allowance	A&G	Schedule RevReq-3-14	-	-	-
20	NH PUC Audit Adjustments	A&G	Schedule RevReq-3-21	-	(23,865)	(23,865)
21	Total Operating & Maintenance Expense Adjustments			<u>\$ 930,909</u>	<u>\$ (221,439)</u>	<u>\$ 709,469</u>
<b>Depreciation And Amortization Expense Adjustments</b>						
22	Depreciation Annualization	Depr	Schedule RevReq-3-15 P1	\$ 337,999	\$ -	\$ 337,999
23	Proposed Depreciation Rates	Depr	Schedule RevReq-3-15 P2	541,522	(231,365)	310,157
24	Production Expense (Depreciation)	Depr	Schedule RevReq-3-6	38,600	-	38,600
25	Reserve Variance Amortization	Amort	Schedule RevReq-3-15 P3	-	-	-
26	Customer Information System Amortization	Amort	Schedule RevReq-3-16	(43,376)	-	(43,376)
27	Plant Acquisition Adjustment	Amort	Schedule RevReq-3-17	352,468	-	352,468
28	Total Depreciation And Amortization Expense Adjustments			<u>\$ 1,227,214</u>	<u>\$ (231,365)</u>	<u>\$ 995,849</u>
<b>Taxes Other Than Income Adjustments</b>						
29	Property Taxes	Oth Tax	Schedule RevReq-3-18	\$ 678,611	\$ (257,839)	\$ 420,772
30	Payroll Taxes	Oth Tax	Schedule RevReq-3-19	24,915	(11,913)	13,001
31	Total Taxes Other Than Income Adjustments			<u>\$ 703,526</u>	<u>\$ (269,752)</u>	<u>\$ 433,773</u>
<b>Income Taxes Adjustments</b>						
32	Federal Income Tax	FIT	Schedule RevReq-3-20	\$ (400,753)	\$ 347,238	\$ (53,515)
33	NH State Tax	SIT	Schedule RevReq-3-20	(105,286)	91,226	(14,059)
34	Total Income Taxes Adjustments			<u>\$ (506,038)</u>	<u>\$ 438,464</u>	<u>\$ (67,574)</u>
<b>Rate Base Adjustments</b>						
35	NH Supplemental Plant Adjustment	Plant	Schedule RevReq-5-3	\$ 2,193,573	\$ -	\$ 2,193,573
36	NH Supplemental Plant Adjustment	Acc Depr	Schedule RevReq-5-3	1,586,351	-	1,586,351
37	Customer Information System - Accumulated Depreciation	Acc Depr	Schedule RevReq-3-16	(307,244)	-	(307,244)
38	Staff Depreciation Adjustment	Acc Depr	Settlement	-	(231,365)	(231,365)
39	Customer Information System - Accumulated Deferred Taxes	RB DIT	Schedule RevReq-3-16	121,091	-	121,091
40	DIT Settlement Adjustment	RB DIT	Schedule RevReq-5-4	1,510,242	-	1,510,242
41	Cash Working Capital (Due To Pro Forma Adjustments)	CWC	Schedule RevReq-5-2	195,383	(62,809)	132,574
42	Total Rate Base Adjustments			<u>\$ (521,483)</u>	<u>\$ 168,556</u>	<u>\$ (352,927)</u>

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
WEATHER NORMALIZATION  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-1**

<u>LINE NO.</u>	(1) <u>DESCRIPTION</u>	(2) <u>TOTAL</u>
1	To Increase Test Year Base Revenue to Normalize for the Effect of Warmer than Normal Weather <sup>(1)</sup>	<u>\$ 897,399</u>

**Notes**

(1) Refer to Direct Testimony of Paul Normand

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
RESIDENTIAL LOW INCOME ASSISTANCE  
12 MONTHS ENDED DECEMBER 31, 2016

<u>LINE NO.</u>	(1) <u>DESCRIPTION</u>	(2) <u>TOTAL</u>
1	To Reflect Recovery Of The Low Income Discount Through the LDAC. See Workpaper - Flowthrough Detail	<u>\$ 366,440</u>

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UNBILLED REVENUE  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-3**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>
<b>1</b>	<b>Pro Forma Adjustment to Remove Unbilled Revenue</b>	<b>\$ 151,597</b>

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
NON-DISTRIBUTION BAD DEBT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-4**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>
1	Remove: Accrued Revenue - Non Dist Bad Debt	\$ 2,498
2	Remove: Provision For Doubtful Accts - Non-Dist - NH	\$ 2,498

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
SPECIAL CONTRACT CUSTOMER REVENUE ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>
1	Full Year Special Contract Customer Revenue at Special Contract Rate <sup>(1)</sup>	\$ 1,182,788
2	Test Year Special Contract Customer Actual Revenue <sup>(1)</sup>	<u>1,139,943</u>
3	Net Special Contract Customer Revenue Adjustment	<u>\$ 42,845</u>

**Notes**

(1) Refer to Workpaper 1.1 and Workpaper 1.2

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PRODUCTION EXPENSE ADJUSTMENTS  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) NH	(3) ME	(4) TOTAL	(5) NH PR ALLOC. 43.73%	(6) ME PR ALLOC. 56.27%	(7) NH REVREQ ADJUST.	(8) ME REVREQ ADJUST.
	Operation & Maintenance Expense							
	Liquefied Propane Gas Production							
	Operation Expense							
1	710 - Supervision	\$ -	\$ 28,303	\$ 28,303	\$ 12,377	\$ 15,926		
2	717 - Propane Expenses	-	21,706	21,706	9,492	12,214		
3	718 - Dispatching Production	-	-	-	-	-		
4	723 - Fuel LPG Gas Process	-	9,322	9,322	4,077	5,245		
5	728 - Liquid Petroleum Gas	-	-	-	-	-		
6	735 - Miscellaneous	-	29,283	29,283	12,805	16,478		
7	736 - Rents	-	-	-	-	-		
8	Total Operation Expense	-	88,614	88,614	38,751	49,863		
	Maintenance							
9	740 - Supervision	-	28,303	28,303	12,377	15,926		
10	741 - Maintenance of Plant	-	17,581	17,581	7,688	9,893		
11	742 - Maint of Equipment	-	17,637	17,637	7,713	9,924		
12	743 - Gas System Prod Training	-	-	-	-	-		
13	Total Maintenance Expense	-	63,521	63,521	27,778	35,743		
14	769 - Maint of Scada - Product	-	1,563	1,563	683	880		
15	Total Manuf Gas Prod Exp	\$ -	\$ 153,698	\$ 153,698	\$ 67,212	\$ 86,486	\$ 67,212	\$ (67,212)
	Depreciation Expense							
	Depreciation Expense							
	Production Plant Exp							
16	305 - Structures	\$ -	\$ -	\$ -	\$ -	\$ -		
17	311 - LPG Gas Equipment	-	-	-	-	-		
18	320 - Other Equipment	-	-	-	-	-		
19	321 - LNG Equipment	-	-	-	-	-		
20	Total Production Plant	-	-	-	-	-		
	Other Storage Plant							
22	361 - Structures & Improve	-	11,705	11,705	5,119	6,586		
23	362 - Gas Holders	-	76,564	76,564	33,481	43,083		
24	363 - Purification Equipment	-	-	-	-	-		
25	Total Other Storage Plant	-	88,269	88,269	38,600	49,669		
26	Total Depreciation & Amortization	\$ -	\$ 88,269	\$ 88,269	\$ 38,600	\$ 49,669	\$ 38,600	\$ (38,600)

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) 12 MONTHS ENDED DECEMBER 31, 2016 DESCRIPTION	(3) NONUNION		(4) TOTAL	(5) UNION	(6) SUBTOTAL	(7) FROM USC NONUNION	(8) TOTAL
		(2) HOURLY	SALARIED					
1	Test Year Payroll	\$ 148,945	\$ 729,409	\$ 878,354	\$ 2,950,566	\$ 3,828,920	\$ 4,580,600	\$ 8,409,520
2	2016 Salary & Wage Increase, Annualized <sup>(1)</sup>	-	-	-	36,790	36,790	-	36,790
3	Payroll Annualized For 2016 Union Wage Increase	148,945	729,409	878,354	2,987,355	3,865,710	4,580,600	8,446,310
4	2017 Salary & Wage Increases <sup>(2)</sup>	5,407	26,478	31,884	89,621	121,505	201,088	322,593
5	Payroll Proformed For 2016 And 2017 Wage Increases	154,352	755,887	910,238	3,076,976	3,987,214	4,781,689	8,768,903
6	2018 Salary & Wage Increases <sup>(3)</sup>	5,603	27,439	33,042	92,309	125,351	209,916	335,267
7	Payroll Proformed for 2016, 2017 and 2018 Wage Increases	159,955	783,325	943,280	3,169,285	4,112,565	4,991,605	9,104,170
8	Less Amounts Chargeable to Capital <sup>(4)</sup>	76,778	375,996	452,774	1,521,257	1,974,031	1,523,937	3,497,968
9	O&M Payroll Proformed	83,176	407,329	490,506	1,648,028	2,138,534	3,467,668	5,606,202
10	Less: Test Year O&M Payroll					1,995,803	3,182,177	5,177,981
11	O&M Payroll Increase Due to Annual Salary and Wage Increases					142,731	285,491	428,221
12	Less: Incentive Compensation Target Adjustment					10,733	144,174	154,906
13	Net Adjustment to O&M Payroll / Compensation					\$ 131,998	\$ 141,317	\$ 273,315

**Notes**

- (1) Average Union Increase of 3.00% Effective June 5, 2016. See Workpaper 2.1  
(2) Average Increase of 3.63% for Nonunion Northern Employees Effective January 1, 2017; Average Increase of 3.00% for Union Employees, Effective June 4, 2017 and Average Increase of 4.39% for USC Employees Effective January 1, 2017. USC Rate Increase Includes 0.62% for Promotions. Refer to Schedule RevReq-3-7, Page 2 of 2  
(3) Average Estimated Increase of 3.63% for Nonunion Northern Employees Effective January 1, 2018; Average Increase of 3.0% for Union Employees Effective June 3, 2018; and Average Estimated Increase of 4.39% for USC Employees Effective January 1, 2018. Refer to Schedule RevReq-3-7, Page 2 of 2  
(4) Capitalization Rates:  
Northern - 48.00%  
USC - 30.53%

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) 12 MONTHS ENDED DECEMBER 31, 2016 DESCRIPTION	(3) NONUNION		(4) TOTAL	(5) UNION	(6) SUBTOTAL	(7) FROM USC NONUNION	(8) TOTAL
		(2) HOURLY	SALARIED					
1	Test Year Payroll	\$ 148,945	\$ 729,409	\$ 878,354	\$ 2,950,566	\$ 3,828,920	\$ 4,580,600	\$ 8,409,520
2	2016 Salary & Wage Increase, Annualized <sup>(1)</sup>	-	-	-	36,790	36,790	-	36,790
3	Payroll Annualized For 2016 Union Wage Increase	148,945	729,409	878,354	2,987,355	3,865,710	4,580,600	8,446,310
4	2017 Salary & Wage Increases <sup>(2)</sup>	5,407	26,478	31,884	89,621	121,505	201,088	322,593
5	Payroll Proformed For 2016 And 2017 Wage Increases	154,352	755,887	910,238	3,076,976	3,987,214	4,781,689	8,768,903
6	2018 Salary & Wage Increases <sup>(3)</sup>	-	-	-	-	-	-	-
7	Payroll Proformed for 2016 and 2017 Wage Increases	154,352	755,887	910,238	3,076,976	3,987,214	4,781,689	8,768,903
8	Less Amounts Chargeable to Capital <sup>(4)</sup>	74,089	362,826	436,914	1,476,948	1,913,863	1,459,850	3,373,713
9	O&M Payroll Proformed	80,263	393,061	473,324	1,600,028	2,073,352	3,321,839	5,395,191
10	Less: Test Year O&M Payroll					1,995,803	3,182,177	5,177,981
11	O&M Payroll Increase Due to Annual Salary and Wage Increases					77,548	139,662	217,210
12	Less: Incentive Compensation Target Adjustment					10,733	144,174	154,906
13	Net Adjustment to O&M Payroll / Compensation					\$ 66,815	\$ (4,512)	\$ 62,304

**Notes**

(1) Average Union Increase of 3.00% Effective June 5, 2016. See Workpaper 2.1

(2) Average Increase of 3.63% for Nonunion Northern Employees Effective January 1, 2017; Average Increase of 3.00% for Union Employees, Effective June 4, 2017 and Average Increase of 4.39% for USC Employees Effective January 1, 2017.  
USC Rate Increase Includes 0.62% for Promotions. Refer to Schedule RevReq-3-7, Page 2 of 2

(3) Per Settlement, 2018 pay increases have been removed from the Proforma O&M Payroll

(4) Capitalization Rates:  
Northern - 48.00%  
USC - 30.53%

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**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UNITIL SERVICE CORP PAYROLL ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-7  
Page 2 of 2**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Test Year USC Labor Charges to Northern Utilities - New Hampshire Division <sup>(1)</sup>	\$ 4,580,600
2	2017 Salary & Wage Increase <sup>(2)</sup>	<u>4.39%</u>
3	Payroll Increase	201,088
4	Proforma Payroll for 2017 Increase	4,781,689
5	2018 Salary & Wage Increase <sup>(2)</sup>	<u>4.39%</u>
6	Payroll Increase	209,916
7	Proforma Payroll for 2017 and 2018 Increase	4,991,605
8	Payroll Capitalization Ratio for 2017 and 2018 Increase	<u>30.53%</u>
9	Proforma Payroll Capitalization	1,523,937
10	Proforma Amount to O&M Expense	3,467,668
11	Test Year O&M Payroll Amount of USC Charge	<u>3,182,177</u>
12	O&M Payroll Increase	<u>\$ 285,491</u>

**Notes**

(1) Includes Incentive Compensation at Target of \$532,138

(2) Average Increase of 4.39% Effective January 1, 2017 and Estimated for January 1, 2018

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UNITIL SERVICE CORP PAYROLL ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-7 REVISED  
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Test Year USC Labor Charges to Northern Utilities - New Hampshire Division <sup>(1)</sup>	\$ 4,580,600
2	2017 Salary & Wage Increase <sup>(2)</sup>	<u>4.39%</u>
3	Payroll Increase	201,088
4	Proforma Payroll for 2017 Increase	4,781,689
5	2018 Salary & Wage Increase <sup>(2)</sup>	<u>0.00%</u>
6	Payroll Increase	-
7	Proforma Payroll for 2017 Increase	4,781,689
8	Payroll Capitalization Ratio for 2017 Increase	<u>30.53%</u>
9	Proforma Payroll Capitalization	1,459,850
10	Proforma Amount to O&M Expense	3,321,839
11	Test Year O&M Payroll Amount of USC Charge	<u>3,182,177</u>
12	O&M Payroll Increase	<u>\$ 139,662</u>

Notes

(1) Includes Incentive Compensation at Target of \$532,138

(2) Average Increase of 4.39% Effective January 1, 2017; January 1, 2018 increase removed.

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
DISTRIBUTION BAD DEBT ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-8

LINE NO.	(1) YEAR	(2) DELIVERY RELATED NET WRITE-OFFS	(3) DELIVERY RELATED RETAIL BILLED REVENUE	(4) TOTAL	(5) CHANGE	(6) SETTLEMENT UPDATE
1	Y/E 12/31/2014	\$256,836	\$32,806,170			
2	Y/E 12/31/2015	\$263,409	\$35,304,247			
3	Y/E 12/31/2016	\$173,011	\$33,885,882			
4	Total	\$693,256	\$101,996,299			
5		Net Write-Offs as a % of Delivery Retail Billed Revenue		0.68%	0.68%	0.68%
6		Per Books Delivery Retail Billed Revenue		\$ 33,885,882	\$ -	\$ 33,885,882
7		Revenue Increase from Rate Case		4,728,445	(2,125,526)	2,602,918
8		2016 Total Normalized Delivery Retail Billed Revenue		\$ 38,614,327	\$ (2,125,526)	\$ 36,488,800
9		Uncollectible Delivery Revenue		\$ 262,457	\$ (14,447)	\$ 248,010
10		Less: Test Year Delivery Write-Offs		\$ 173,011	\$ -	\$ 173,011
11		Increase in Delivery Write-Offs		\$ 89,445	\$ (14,447)	\$ 74,999

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
MEDICAL AND DENTAL INSURANCE ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>	<b>(3) NuNH <sup>(1)</sup></b>	<b>(4) UNITIL SERVICE CORP. <sup>(2)</sup></b>
1	Proformed Medical and Dental O&M Expense	\$ 575,949	\$ 240,703	\$ 335,246
2	Less: Test Year Medical And Dental Insurance O&M Expense	587,827	250,204	337,623
3	Proformed 2017 And 2018 O&M Decrease	\$ (11,878)	\$ (9,501)	\$ (2,377)

**Notes**

(1) Refer to Workpaper 3.1

(2) Refer to Workpaper 3.3

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
MEDICAL AND DENTAL INSURANCE ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) TOTAL	(3) NuNH <sup>(1)</sup>	(4) UNITIL SERVICE CORP. <sup>(2)</sup>
1	Proformed 2017 Medical and Dental O&M Expense	\$ 758,865	\$ 440,424	\$ 318,441
2	Less: Test Year Medical And Dental Insurance O&M Expense	767,396	404,478	362,917
3	Proformed 2017 O&M Decrease	\$ (8,531)	\$ 35,946	\$ (44,476)

**Notes**

(1) Refer to Workpaper 3.2 REVISED

(2) Refer to Workpaper 3.4 REVISED

000035

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE**  
**Pension, PBOP, SERP and 401(k) Expense, Proforma Adjustment**  
**12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-10**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Test Year Pension Expense, as Pro-Formed	640,459
2	Test Year PBOP Expense, as Pro-Formed	764,156
3	Test Year SERP Expense, as Pro-Formed	170,216
4	Test Year 401K Expense, as Pro-Formed	286,506
5	Total Test Year Pension, PBOP, SERP and 401K Expense, as Pro-Formed	1,861,337
6	Test Year Pension Expense	602,949
7	Test Year PBOP Expense	613,939
8	Test Year SERP Expense	141,672
9	Test Year 401K Expense	264,885
10	Total Test Year Pension, PBOP, SERP and 401K Expense	1,623,445
11	Test Year Pension Expense, Pro-Forma Adjustment	37,510
12	Test Year PBOP Expense, Pro-Forma Adjustment	150,217
13	Test Year SERP Expense, Pro-Forma Adjustment	28,544
14	Test Year 401K Expense, Pro-Forma Adjustment	21,621
15	Total Test Year Pension, PBOP, SERP and 401K Expense, Pro-Forma Adjustment	\$ 237,891

**Notes**

Refer to Workpaper 4.1 for Pension Related Expenses  
Refer to Workpaper 4.2 for PBOP Related Expenses  
Refer to Workpaper 4.3 for SERP Related Expenses  
Refer to Workpaper 4.4 for 401k Related Expenses

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE**      **Schedule RevReq-3-10 REVISED**  
**Pension, PBOP, SERP and 401(k) Expense, Proforma Adjustment**  
**12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Test Year Pension Expense, as Pro-Formed	640,459
2	Test Year PBOP Expense, as Pro-Formed	764,156
3	Test Year SERP Expense, as Pro-Formed	170,216
4	Test Year 401K Expense, as Pro-Formed	<u>275,479</u>
5	Total Test Year Pension, PBOP, SERP and 401K Expense, as Pro-Formed	1,850,310
6	Test Year Pension Expense	602,949
7	Test Year PBOP Expense	613,939
8	Test Year SERP Expense	141,672
9	Test Year 401K Expense	<u>264,885</u>
10	Total Test Year Pension, PBOP, SERP and 401K Expense	1,623,445
11	Test Year Pension Expense, Pro-Forma Adjustment	37,510
12	Test Year PBOP Expense, Pro-Forma Adjustment	150,217
13	Test Year SERP Expense, Pro-Forma Adjustment	28,544
14	Test Year 401K Expense, Pro-Forma Adjustment	10,594
15	Total Test Year Pension, PBOP, SERP and 401K Expense, Pro-Forma Adjustment	<u>\$ 226,865</u>

**Notes**

Refer to Workpaper 4.1 for Pension Related Expenses  
Refer to Workpaper 4.2 for PBOP Related Expenses  
Refer to Workpaper 4.3 for SERP Related Expenses  
Refer to Workpaper 4.4 REVISED for 401k Related Expenses

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY & LIABILITY INSURANCE  
12 MONTHS ENDED DECEMBER 31, 2016**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>	<b>(3) NuNH <sup>(1)</sup></b>	<b>(4) UNITIL SERVICE CORP. <sup>(2)</sup></b>
1	Proformed Property & Liability Insurances O&M Expense	\$ 297,448	\$ 261,464	\$ 35,984
2	Less: Test Year Property & Liability Insurances O&M Expense	249,013	230,933	18,080
3	Proformed 2016 And 2017 O&M Increase	\$ 48,435	\$ 30,531	\$ 17,904

**Notes**

(1) Refer to Workpaper 5.1

(2) Refer to Workpaper 5.2

000038

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY & LIABILITY INSURANCE  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-11 REVISED**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>	<b>(3) NuNH <sup>(1)</sup></b>	<b>(4) UNITIL SERVICE CORP. <sup>(2)</sup></b>
1	Proformed Property & Liability Insurances O&M Expense	\$ 274,697	\$ 240,548	\$ 34,149
2	Less: Test Year Property & Liability Insurances O&M Expense	249,013	230,933	18,080
3	Proformed 2016 And 2017 O&M Increase	<u>\$ 25,684</u>	<u>\$ 9,615</u>	<u>\$ 16,069</u>

**Notes**

**(1) Refer to Workpaper 5.1 REVISED**

**(2) Refer to Workpaper 5.2 REVISED**

000039

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
POSTAGE ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-12**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Test Year Postage Expense	\$ 155,040
2	To Annualize 4/10/2016 USPS Postage Decrease	-1.12%
3	Decrease in Test Year Postage Expense	(1,734)
4	Test Year Adjusted Postage Expense	153,306
5	1/22/2017 USPS Postage Increase	4.01%
6	Increase in 2017 Postage Expense	6,148
7	Total Postage Increase (Line 3 + Line 6)	\$ 4,415

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
NH PUC ASSESSMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	DESCRIPTION	(1)	(2)	(3)
			FY 2017 AS FILED	FY 2018 SETTLEMENT UPDATE
1	NH PUC Assessment		\$ 310,650	\$ 368,964
2	Test Year Total PUC Assessment		339,210	339,210
3	Less: Test Year PUC Assessment Charged to LDAC		248,135	248,135
4	Test Year Base PUC Assessment		91,075	91,075
5	Adjustment for NH PUC Assessment (Line 1 - Line 4)		<u>\$ 219,575</u>	<u>\$ 277,889</u>

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
INFLATION ALLOWANCE  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-14  
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) AS FILED	(3) SETTLEMENT UPDATE	(4) TOTAL
1	Test Year Distribution O&M Expenses	\$ 11,638,060	\$ (11,638,060)	\$ -
	Less Normalizing Adjustments Items:			
2	Payroll	\$ 5,177,981	\$ (5,177,981)	\$ -
3	Medical and Dental Insurance	587,827	(587,827)	-
4	401K Costs	264,885	(264,885)	-
5	Property & Liability Insurance	249,013	(249,013)	-
6	Postage	155,040	(155,040)	-
7	PUC Assessment	91,075	(91,075)	-
8	Total Normalizing Adjustment Items	\$ 6,525,820	\$ (6,525,820)	\$ -
	Less Items not Subject to Inflation:			
9	Pension	\$ 602,949	\$ (602,949)	\$ -
10	Postemployment Benefits Other than Pensions	613,939	(613,939)	-
11	SERP	141,672	(141,672)	-
12	Bad Debts	170,513	(170,513)	-
13	Amortizations - USC Charge	12,118	(12,118)	-
14	Facility Leases - USC Charge	358,261	(358,261)	-
15	Total Items not Subject to Inflation	\$ 1,899,452	\$ (1,899,452)	\$ -
16	Residual O&M Expenses	\$ 3,212,788	\$ (3,212,788)	\$ -
17	Projected Inflation Rate <sup>(1)</sup>	4.26%	4.26%	4.26%
18	Increase in Other O&M Expense for Inflation	\$ 136,865	\$ (136,865)	\$ -

Notes

(1) Refer to Schedule RevReq-3-14, Page 2 of 2

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
INFLATION ALLOWANCE  
12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	(1) DESCRIPTION	(2) INDEX <sup>(1)</sup>
	<b>GDPIPD Index Value at the end of the Test Year:</b>	
1	June 2016 Index-GDP	111.4
2	July 2016 Index-GDP	111.5
3	July 1, 2016 (Midpoint of Test Year) Index	111.5
	<b>GDPIPD Index Value at date of permanent rates :</b>	
4	June 2018 Index-GDP	116.1
5	July 2018 Index-GDP	116.3
6	July 1, 2018 (Date of Permanent Rates) Index	116.2
7	Projected Inflation Rate	4.26%

**Notes**

(1) Refer to Workpaper 6.1 for GDPIPD Indices

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
DEPRECIATION ANNUALIZATION  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2)	(3)	(4)
		PLANT BALANCE 12/31/2016	CURRENT DEPRECIATION RATES	ANNUAL DEPRECIATION EXPENSE
<b>Mfg. Gas Prod. Plant:</b>				
1	305 Struct. And Improvements	\$ 161,860	N/A	N/A
2	320 Other Equipment	7,640	N/A	N/A
3	321 LNG Equipment	84,156	N/A	N/A
4	Total Mfg Gas Prod. Plant	\$ 253,656	N/A	N/A
<b>Distribution Plant:</b>				
5	375.2 Structures - City Gate Meas & Reg	45,256	3.66%	1,656
6	375.7 Structures - Other Dist Sys	2,864,939	0.25%	7,162
7	376.2 Mains - Coated/Wrapped	17,974,411	2.67%	479,917
8	376.3 Mains - Bare Steel	192,301	N/A	N/A
9	376.4 Mains - Plastic	87,306,939	2.64%	2,304,903
10	376.5 Mains - Joint Seals	542,145	14.69%	79,641
11	376.6 Mains - Cathodic Protection	798,083	8.41%	67,119
12	376.8 Mains - Cast Iron	35,988	N/A	N/A
13	378.2 Mea & Reg Station Eq, Regulating	3,445,431	2.25%	77,522
14	379 Mea & Reg Ta-G	39,266	N/A	N/A
15	380 Services	60,250,315	3.61%	2,175,036
16	381 Meters	3,913,705	1.98%	77,491
17	382 Meter Installations	19,938,729	3.39%	675,923
18	383 House Regulators	537,766	3.12%	16,778
19	386 Water Heaters/Conversion Burners	1,637,356	5.07%	83,014
20	Total Distribution Plant	\$ 199,522,629	3.03%	\$ 6,046,162
<b>General Plant:</b>				
21	391.10 Off Furn & Eq.- Unspecified	\$ 420,149	5.85%	\$ 24,579
22	393 Stores Equipment	31,520	N/A	N/A
23	394.10 Tools, Garage & Service Equipment	1,173,029	3.84%	45,044
24	396 Power Operated Equipment	75,266	5.56%	4,185
25	397 Communication Equipment	1,453,181	7.69%	111,750
26	397.25 Metscan Communication Equip	112,656	7.69%	8,663
27	397.35 ERT Automatic Reading Dev	2,936,629	7.37%	216,430
28	Total General Plant	\$ 6,202,431	6.65%	\$ 410,651
29	Total Depreciable Plant	\$ 205,978,716	3.14%	\$ 6,456,813
<b>Non-Depreciable Plant:</b>				
30	304.2 Land & Rights - Mfg Gas Prod. Pl	\$ 6,816	N/A	N/A
31	374.4 Land Rgts, Other Distr Sy	89,111	N/A	N/A
32	374.5 Land Rgts, Rights Of Way	17,911	N/A	N/A
33	389.1 Land	232,947	N/A	N/A
34	Total Non-Depreciable Plant	\$ 346,785	N/A	N/A
<b>Amortizable Plant:</b>				
35	303 Misc Intangible Plant	3,540,586	N/A	N/A
36	Total Amortizable Plant	\$ 3,540,586	N/A	N/A
37	Total Plant in Service	\$ 209,866,086	3.14%	\$ 6,456,813
38	Test Year Expense			\$ 6,118,814
39	Increase In Depreciation Expense			\$ 337,999

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPOSED DEPRECIATION RATES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) PLANT BALANCE 12/31/2016	(3) PROPOSED DEPRECIATION RATES	(4) PROPOSED DEPRECIATION EXPENSE
<b>Mfg. Gas Prod. Plant:</b>				
1	305 Struct. And Improvements	\$ 161,860	N/A	N/A
2	320 Other Equipment	7,640	N/A	N/A
3	321 LNG Equipment	84,156	N/A	N/A
4	Total Mfg Gas Prod. Plant	\$ 253,656	N/A	N/A
<b>Distribution Plant:</b>				
5	375.2 Structures - City Gate Meas & Reg	45,256	1.67%	756
6	375.7 Structures - Other Dist Sys	2,864,939	1.67%	47,844
7	376.2 Mains - Coated/Wrapped	17,974,411	3.19%	573,384
8	376.3 Mains - Bare Steel	192,301	N/A	N/A
9	376.4 Mains - Plastic	87,306,939	2.87%	2,505,709
10	376.5 Mains - Joint Seals	542,145	N/A	N/A
11	376.6 Mains - Cathodic Protection	798,083	4.50%	35,914
12	376.8 Mains - Cast Iron	35,988	N/A	N/A
13	378.2 Mea & Reg Station Eq, Regulating	3,445,431	3.50%	120,590
14	379 Mea & Reg Ta-G	39,266	3.50%	1,374
15	380 Services	60,250,315	3.89%	2,343,737
16	381 Meters	3,913,705	3.33%	130,326
17	382 Meter Installations	19,938,729	3.33%	663,960
18	383 House Regulators	537,766	3.33%	17,908
19	386 Water Heaters/Conversion Burners	1,637,356	7.14%	116,907
20	Total Distribution Plant	\$ 199,522,629	3.30%	\$ 6,558,409
<b>General Plant:</b>				
21	391.10 Off Furn & Eq.- Unspecified	\$ 420,149	8.33%	\$ 34,998
22	393 Stores Equipment	31,520	N/A	N/A
23	394.10 Tools, Garage & Service Equipment	1,173,029	5.26%	61,701
24	396 Power Operated Equipment	75,266	6.67%	5,020
25	397 Communication Equipment	1,453,181	9.09%	132,094
26	397.25 Metscan Communication Equip	112,656	9.09%	10,240
27	397.35 ERT Automatic Reading Dev	2,936,629	6.67%	195,873
28	Total General Plant	\$ 6,202,431	7.13%	\$ 439,926
29	Total Depreciable Plant	\$ 205,978,716	3.42%	\$ 6,998,335
<b>Non-Depreciable Plant:</b>				
30	304.2 Land & Rights - Mfg Gas Prod. Pl	\$ 6,816	N/A	N/A
31	374.4 Land Rgts, Other Distr Sy	89,111	N/A	N/A
32	374.5 Land Rgts, Rights Of Way	17,911	N/A	N/A
33	389.1 Land	232,947	N/A	N/A
34	Total Non-Depreciable Plant	\$ 346,785	N/A	N/A
<b>Amortizable Plant:</b>				
35	303 Misc Intangible Plant	3,540,586	N/A	N/A
36	Total Amortizable Plant	\$ 3,540,586	N/A	N/A
37	Total Plant in Service	\$ 209,866,086	3.42%	\$ 6,998,335
38	Annualized Test Year Expense <sup>(1)</sup>			\$ 6,456,813
39	Increase in Depreciation Expense			\$ 541,522

**Notes**

(1) Refer to Schedule RevReq-3-15, Page 1 of 2, Line 37

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
RESERVE VARIANCE AMORTIZATION  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-13**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Book Reserve at 12/31/2016 <sup>(1)</sup>	\$ 65,055,735
2	Reserve Variance at 12/31/2016 <sup>(2)</sup>	<u>(829,634)</u>
3	Reserve Variance as a Percentage of Book Reserve	1.3%
4	Reserve Variance to Amortize	<u><u>-</u></u>

**Notes**

(1) Refer to Paul Normand's Depreciation Study, Schedule A, Column 12

(2) Refer to Paul Normand's Depreciation Study, Schedule A, Column 13

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
 CUSTOMER INFORMATION SYSTEM  
 12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) PROJECT COST	(3) TEST YEAR <sup>(1)</sup>	(4) STIPULATED <sup>(2)</sup>	(5) PROFORMA ADJUSTMENT
1	Customer Information System Amortization	\$ 902,213	\$ 112,777	\$ 69,401	\$ (43,376)
2	Monthly Amortization Adjustment				(3,615)
3	Number of Months Amortized Through End of Test Year				<u>85 months</u>
4	Customer Information System Accumulated Depreciation Adjustment				(307,244)
Rate Base:					
5	Change in Accumulated Depreciation Through 2016 to Reflect 13 Year Amortization				\$ (307,244)
6	Change in Accumulated Deferred Taxes Through 2016 to Reflect 13 Year Amortization				\$ 121,091
Operating Expenses:					
7	Reduction in Amortization Expense to Reflect 13 Year Amortization				\$ (43,376)

Notes

(1) Test year Reflects 8 Year Amortization  
 (2) Stipulated Reflects 13 Year Amortization

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**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE**  
**PLANT ACQUISITION ADJUSTMENTS PURSUANT TO DG 08-048 AND DG 08-079**  
**12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-17**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) AMOUNT</b>
1	Transition and Transaction Cost Amortization	\$ (588,349)
2	Purchase Acquisition Adjustment Amortization	<u>940,818</u>
3	Total	<u>\$ 352,468</u>

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY TAXES  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-18  
Page 1 of 2

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LINE NO.	(1) MUNICIPALITY & STATE	(2) TAXATION PERIOD	(3) TOTAL ANNUALIZED TAXES <sup>(1)</sup>	(4) TOTAL TEST YEAR TAXES ACCRUED	(5) PROFORMA ADJUSTMENT (3)-(4)	(6) LOCAL TAX RATE	(7) ASSESSED VALUATION
1	Atkinson	4/1 - 3/31	4,832			\$ 15.68	296,300
2	Brentwood	4/1 - 3/31	5,126			\$ 22.01	239,700
3	Dover	4/1 - 3/31	489,210			\$ 23.90	20,468,900
4	Durham	4/1 - 3/31	210,128			\$ 27.46	7,842,100
5	East Kingston	4/1 - 3/31	10,308			\$ 22.40	462,700
6	Exeter	4/1 - 3/31	291,781			\$ 23.83	10,547,200
7	Greenland	4/1 - 3/31	5,507			\$ 14.21	439,900
8	Hampton--Class 4000	4/1 - 3/31	276,098			\$ 13.92	17,228,400
9	Hampton--Class 5000	4/1 - 3/31	143,218			\$ 14.66	8,485,600
10	Hampton Falls	4/1 - 3/31	440			\$ 19.03	27,000
11	Kensington	4/1 - 3/31	34,344			\$ 21.07	1,194,800
12	Madbury	4/1 - 3/31	7,186			\$ 26.25	263,800
13	Newington	4/1 - 3/31	21,978			\$ 6.83	2,318,200
14	North Hampton	4/1 - 3/31	16,998			\$ 15.28	786,700
15	Plaistow	4/1 - 3/31	109,556			\$ 20.28	3,749,960
16	Portsmouth	4/1 - 3/31	416,420			\$ 14.63	28,463,345
17	Rochester (Gonic & E. Rochester)	4/1 - 3/31	385,402			\$ 25.80	15,060,600
18	Rollinsford	4/1 - 3/31	1,666			\$ 25.38	60,700
19	Salem	4/1 - 3/31	286,528			\$ 18.04	10,232,700
20	Seabrook	4/1 - 3/31	134,650			\$ 12.48	11,222,100
21	Somersworth	4/1 - 3/31	196,200			\$ 29.75	6,606,100
22	Stratham	4/1 - 3/31	7,064			\$ 18.07	400,000
23	State Of NH	4/1 - 3/31	908,164			\$ 6.60	126,987,200
24	Total		<u>\$ 3,962,803</u>				<u>\$ 273,384,005</u>
25	Property Tax Increase <sup>(2)</sup>		<u>5.46%</u>				
26	Total		<u>\$ 4,179,034</u>	<u>\$ 3,500,423</u>	<u>\$ 678,611</u>		

Notes

(1) Based on final 2016 property tax bills

(2) Compound annual growth rate in taxes between calendar years 2014 and 2016 applied. Refer to Schedule RevReq-3-18 Page 2

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY TAXES  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-18 REVISED  
Page 1 of 2

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LINE NO.	(1) MUNICIPALITY & STATE	(2) TAXATION PERIOD	(3) TOTAL ANNUALIZED TAXES <sup>(1)</sup>	(4) TOTAL TEST YEAR TAXES ACCRUED	(5) PROFORMA ADJUSTMENT (3)-(4)	(6) LOCAL TAX RATE	(7) ASSESSED VALUATION
1	Atkinson	4/1 - 3/31	4,572			\$ 16.06	287,000
2	Brentwood	4/1 - 3/31	17,082			\$ 22.48	497,300
3	Dover	4/1 - 3/31	568,632			\$ 23.64	24,053,700
4	Durham	4/1 - 3/31	207,446			\$ 28.30	7,469,800
5	East Kingston	4/1 - 3/31	10,282			\$ 22.31	462,700
6	Exeter	4/1 - 3/31	235,483			\$ 24.42	9,967,700
7	Greenland	4/1 - 3/31	10,952			\$ 14.33	758,000
8	Hampton--Class 4000	4/1 - 3/31	248,432			\$ 14.17	17,228,400
9	Hampton--Class 5000	4/1 - 3/31	128,640			\$ 14.91	8,485,600
10	Hampton Falls	4/1 - 3/31	500			\$ 18.76	27,000
11	Kensington	4/1 - 3/31	22,726			\$ 20.05	1,194,800
12	Madbury	4/1 - 3/31	7,064			\$ 26.52	263,800
13	Newington	4/1 - 3/31	17,411			\$ 6.57	2,530,000
14	North Hampton	4/1 - 3/31	11,708			\$ 16.02	741,100
15	Plaistow	4/1 - 3/31	115,688			\$ 21.79	4,399,660
16	Portsmouth	4/1 - 3/31	431,576			\$ 13.25	32,571,635
17	Rochester (Gonic & E. Rochester)	4/1 - 3/31	400,616			\$ 24.08	16,386,600
18	Rollinsford	4/1 - 3/31	6,938			\$ 21.30	199,000
19	Salem	4/1 - 3/31	195,240			\$ 20.84	10,232,700
20	Seabrook	4/1 - 3/31	174,056			\$ 13.94	11,266,400
21	Somersworth	4/1 - 3/31	196,510			\$ 29.75	6,606,100
22	Stratham	4/1 - 3/31	7,136			\$ 17.96	400,000
23	State Of NH	4/1 - 3/31	902,506			\$ 6.60	136,743,400
24	Total		<u>\$ 3,921,196</u>				<u>\$ 292,772,395</u>
25	Property Tax Increase			<u>0.00%</u>			
26	Total		<u>\$ 3,921,196</u>	<u>\$ 3,500,423</u>	<u>\$ 420,772</u>		

**Notes**

(1) Based on final 2017 property tax bills

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY TAX ESCALATION RATE  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-3-18  
Page 2 of 2**

LINE NO.	(1) DESCRIPTION	(2) 2016	(2) 2015	(2) 2014
1	Total Northern New Hampshire Property Taxes	\$ 3,500,423	\$ 3,228,060	\$ 3,147,557
2	Annual Percentage Change	8.44%	2.56%	
3	Average Annual Percentage Change	5.46%		

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL TAXES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) SOCIAL SECURITY	(3) MEDICARE	(4) TOTAL
1	Increase in O&M Payroll <sup>(1)</sup>	\$ 428,221	\$ 428,221	
	Less Amounts in Excess of Taxable Limit <sup>(2)</sup>			
2	Northern Utilities - NH Division <sup>(3)</sup>	(9,287)		
3	Unitil Service Corp. <sup>(4)</sup>	(117,236)		
4	O&M Payroll Subject to Payroll Taxes	301,699	428,221	
5	Payroll Tax Rates	6.20%	1.45%	
6	Increase in Payroll Taxes	\$ 18,705	\$ 6,209	\$ 24,915

**Notes**

- (1) Refer to Schedule RevReq-3-7, Page 1 of 2
- (2) 2017 Social Security Wage Limit of \$127,200
- (3) Refer to Workpaper 7.1
- (4) Refer to Workpaper 7.2

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL TAXES  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-19 REVISED

LINE NO.	(1) DESCRIPTION	(2) SOCIAL SECURITY	(3) MEDICARE	(4) TOTAL
1	Increase in O&M Payroll <sup>(1)</sup>	\$ 217,210	\$ 217,210	
	Less Amounts in Excess of Taxable Limit <sup>(2)</sup>			
2	Northern Utilities - NH Division <sup>(3)</sup>	(2,868)		
3	Unitil Service Corp. <sup>(4)</sup>	(55,445)		
4	O&M Payroll Subject to Payroll Taxes	158,898	217,210	
5	Payroll Tax Rates	6.20%	1.45%	
6	Increase in Payroll Taxes	\$ 9,852	\$ 3,150	\$ 13,001

**Notes**

- (1) Refer to Schedule RevReq-3-7 REVISED, Page 1 of 2
- (2) 2017 Social Security Wage Limit of \$127,200
- (3) Refer to Workpaper 7.1 REVISED
- (4) Refer to Workpaper 7.2 REVISED

000053

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
COMPUTATION OF FEDERAL AND STATE INCOME TAXES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) Amount	(3) SETTLEMENT UPDATE	(4) TOTAL
	<u>Increases / (Decreases) To Revenue</u>			
1	Weather Normalization	\$ 897,399	\$ -	\$ 897,399
2	Residential Low Income	366,440	-	366,440
3	Unbilled Revenue	151,597	-	151,597
4	Non-Distribution Bad Debt	2,498	-	2,498
5	Special Contract Customer Revenue Adjustment	42,845	-	42,845
6	Total Revenue Adjustments	\$ 1,460,779	\$ -	\$ 1,460,779
	<u>Increases / (Decreases) To Expenses</u>			
7	Production Expense (O&M)	\$ 67,212	\$ -	\$ 67,212
8	Payroll	273,315	(211,011)	62,304
9	Medical & Dental Insurances	(11,878)	3,347	(8,531)
10	Distribution Bad Debt	89,445	(14,447)	74,999
11	Non-Distribution Bad Debt	2,498	-	2,498
12	Pension	37,510	-	37,510
13	PBOP	150,217	-	150,217
14	SERP	28,544	-	28,544
15	401K	21,621	(11,027)	10,594
16	Property & Liability Insurances	48,435	(22,751)	25,684
17	Postage	4,415	-	4,415
18	NH PUC Assessment	219,575	58,314	277,889
19	Inflation Allowance	-	-	-
20	NH PUC Audit Adjustments	-	(23,865)	(23,865)
21	Depreciation Annualization	337,999	-	337,999
22	Proposed Depreciation Rates	541,522	(231,365)	310,157
23	Production Expense (Depreciation)	38,600	-	38,600
24	Reserve Variance Amortization	-	-	-
25	Customer Information System Amortization	(43,376)	-	(43,376)
26	Plant Acquisition Adjustment	352,468	-	352,468
27	Property Taxes	678,611	(257,839)	420,772
28	Payroll Taxes	24,915	(11,913)	13,001
29	Flowthrough Net Operating Income	498,382	-	498,382
30	Change In Interest Exp (Refer To Schedule RevReq 3-20 Page 2)	(615,281)	(389,958)	(1,005,239)
31	Total Expense Adjustments	\$ 2,744,749	\$ (1,112,515)	\$ 1,632,234
32	Increase / (Decrease) In Taxable Income	\$ (1,283,970)	\$ 1,112,515	\$ (171,455)
33	Effective Federal Income Tax Rate <sup>(1)</sup>	31.21%	31.21%	31.21%
34	NH State Tax Rate <sup>(2)</sup>	8.20%	8.20%	8.20%
	<u>Federal Income &amp; NH State Tax</u>			
35	Effective Federal Income Tax	\$ (400,753)	\$ 347,238	\$ (53,515)
36	NH State Tax	(105,286)	91,226	(14,059)
37	Increase (Decrease) In Income Taxes	\$ (506,038)	\$ 438,464	\$ (67,574)
	<u>Notes</u>			
38	Federal Income Tax Rate	34.00%	34.00%	34.00%
39	Federal Benefit of State Tax -(Line 38 * Line 41)	-2.79%	-2.79%	-2.79%
40	(1) Effective Federal Income Tax Rate	31.21%	31.21%	31.21%
41	(2) State Income Tax Rate	8.20%	8.20%	8.20%
42	Northern New Hampshire Tax Rate (Line 40 + Line 41)	39.41%	39.41%	39.41%

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
CHANGE IN INTEREST EXPENSE APPLICABLE TO INCOME TAX COMPUTATION  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) AMOUNT	(3) SETTLEMENT UPDATE	(4) TEST YEAR AS PROFORMED
1	Ratemaking Interest Synchronization			
2	Rate Base <sup>(1)</sup>	\$ 131,491,801	\$ 168,556	\$ 131,660,357
3	Cost Of Debt In Proposed Rate Of Return <sup>(2)</sup>	2.98%	-0.30%	2.68%
4	Interest Expense for Ratemaking	\$ 3,918,456	\$ (389,958)	\$ 3,528,498
5	Test Year Interest Expense			
6	Interest Charges (427-431)	\$ 4,533,737	\$ -	\$ 4,533,737
7	Increase / (Decrease) in Interest Expense	\$ (615,281)	\$ (389,958)	\$ (1,005,239)

Notes

- (1) Refer to Schedule RevReq-5  
(2) Refer to Schedule RevReq-6

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
NEW HAMPSHIRE PUC AUDIT ADJUSTMENTS  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
1	<u>Audit Issue #3</u>	
2	Payment for Services Rendered Outside Test Year	\$ (102)
3	Inadvertently Allocated Expense Incorrectly	(1,158)
4	Membership Fee Allocation Correction Between NH & ME	(246)
5	Out of Period Expense (2017 Related)	(500)
6	e-Smart Payment Correction	(7,721)
7	Total Audit Issue #3 Reductions	<u>\$ (9,726)</u>
8	<u>Audit Issue #8</u>	
9	Invoice Correction Transferring Expense to ERC	\$ (2,548)
10	Overcharge Corrected Outside of Test Year	(8,941)
11	Total Audit Issue #8 Reductions	<u>\$ (11,489)</u>
12	<u>Audit Issue #9</u>	
13	Late Fee Penalty on Property Taxes	\$ (2,500)
14	Total Audit Issue #9 Reductions	<u>\$ (2,500)</u>
15	<u>Audit Issue #10</u>	
16	NY Corp Income Tax Return Fee	\$ (150)
17	Total Audit Issue #10 Reductions	<u>\$ (150)</u>
18	Total Agreed Upon Audit Issues Dollars	<u><u>\$ (23,865)</u></u>

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
ASSETS & DEFERRED CHARGES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) Category	(3) New Hampshire	(2) Maine	(4) Common	(5) Consolidated December 31, 2016	(6) Consolidated December 31, 2015	(7) Consolidated December 31, 2014
1	<u>Gas Plant</u>						
2	In Service	\$ 209,866,086	\$ 263,379,395	\$ -	\$ 473,245,481	\$ 431,226,675	\$ 391,447,517
3	Construction Work in Progress	5,832,345	12,804,695	-	18,637,040	19,344,542	14,181,478
4	Cost of Removal	13,048,784	15,691,497	-	28,740,281	26,900,854	26,130,937
5	Less: Reserve for Depreciation	(65,869,111)	(66,238,906)	-	(132,108,018)	(121,384,124)	(113,824,152)
6	Total Gas Plant	162,878,105	225,636,681	-	388,514,785	356,087,948	317,935,782
7	<u>Other Property</u>						
8	Total Other Net Property	(1,803,233)	(2,390,294)	-	(4,193,528)	(6,399,673)	(8,596,538)
9	Total Other & Non Operating Plant	(1,803,233)	(2,390,294)	-	(4,193,528)	(6,399,673)	(8,596,538)
10	<u>Current Assets</u>						
11	Cash	(141,073,102)	141,524,297	80,302	531,497	708,537	654,344
12	Accounts Receivable - Gas	7,718,148	12,642,945	-	20,361,094	15,535,343	22,786,443
13	Accounts Receivable - Other	10,536	4,956	8,055	23,547	22,482	801,275
14	Uncollectible Accounts	(109,402)	(120,902)	-	(230,304)	(400,424)	(270,665)
15	Notes Receivable	-	-	2,390,725	2,390,725	1,970,818	1,218,184
16	Material and Supplies	2,191,928	1,901,004	-	4,092,932	3,526,795	3,806,809
17	Stores Expense Undistributed	229,880	259,194	-	489,074	622,360	546,724
18	Inventory	294,671	73,167	-	367,837	457,422	850,597
19	Prepayments	592,403	1,256,580	86,454	1,935,437	1,835,623	2,100,016
20	Miscellaneous Current Assets	11,305,284	3,987,112	-	15,292,396	17,015,005	23,279,190
21	Total	(118,839,654)	161,528,354	2,565,535	45,254,234	41,293,960	55,772,917
22	<u>Deferred Charges</u>						
23	Unamortized Debt Expense	-	-	933,597	933,597	1,027,709	1,121,821
24	Other - Deferred Debits	13,051,029	21,883,188	105,674	35,039,892	27,243,499	32,042,675
25	Total Deferred Charges	13,051,029	21,883,188	1,039,272	35,973,489	28,271,209	33,164,496
26	Total Assets & Deferred Charges	\$ 55,286,246	\$ 406,657,928	\$ 3,604,806	\$ 465,548,981	\$ 419,253,443	\$ 398,276,656

000057

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
STOCKHOLDERS EQUITY & LIABILITIES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) Category	(3) New Hampshire	(2) Maine	(4) Common	(5) Consolidated December 31, 2016	(6) Consolidated December 31, 2015	(7) Consolidated December 31, 2014
1	<u>Capitalization</u>						
2	Common Stock	\$ -	\$ -	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
3	Paid in Capital	-	-	143,199,000	143,199,000	113,199,000	113,199,000
4	Earned Surplus	4,778,477	6,050,089	1,155,163	11,983,729	10,356,063	9,132,098
5	Stockholders Equity	4,778,477	6,050,089	144,355,163	155,183,729	123,556,063	122,332,098
6	<u>Long Term Debt</u>						
7	Bonds and Notes			145,000,000	145,000,000	155,000,000	155,000,000
8	Total	-	-	145,000,000	145,000,000	155,000,000	155,000,000
9	<u>Current and Accrued Liabilities</u>						
10	Accounts Payable	410,685	580,319	10,601,233	11,592,237	13,530,562	17,335,975
11	Notes Payable to Associated Co.	-	-	36,977,214	36,977,214	17,820,632	12,710,517
12	A/P to Associated Co's	-	-	2,580,731	2,580,731	3,288,987	3,371,092
13	Customer Deposits	430,588	511,321	-	941,909	1,021,611	993,841
14	Dividends Declared	-	-	1,852,600	1,852,600	2,876,400	2,795,400
15	Interest Accrued	-	-	1,349,211	1,349,211	1,369,194	1,362,388
16	Other Tax Liabilities	92,400	177,228	-	269,629	1,927,706	318,954
17	Other Accrued Liabilities	2,929,476	2,685,197	10,404,746	16,019,420	20,144,750	16,477,226
18	Total	3,863,150	3,954,065	63,765,734	71,582,950	61,979,842	55,365,393
19	<u>Deferred Credits</u>						
20	Deferred Taxes In Rate Base	15,167,491	24,233,270	-	39,400,761	30,889,825	18,278,778
21	Other Deferred Taxes	(6,068,664)	(5,309,044)	-	(11,377,707)	(13,490,857)	(5,576,499)
22	Other Deferred Credits	29,430,672	36,328,577	-	65,759,248	61,318,569	52,876,885
23	Total	38,529,499	55,252,803	-	93,782,302	78,717,537	65,579,165
24	Total Stockholders Equity & Liabilities	\$ 47,171,125	\$ 65,256,958	\$ 353,120,898	\$ 465,548,981	\$ 419,253,443	\$ 398,276,656

000058

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UTILITY PLANT IN SERVICE  
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-4-3

000059

LINE NO.	(1) Account Name	(2) CAPITAL 1/1	(3) ADDITIONS	(4) RETIREMENTS	(5) ADJ	(6) PLANT IN SERVICE 12/31	(7) COMPLETED CONSTRUCTION NOT CLASSIFIED 12/31
<b>Mfg. Gas Produc. Plant:</b>							
1	305 Struct. And Improvements	\$ -	\$ -	\$ -	\$ -	\$ -	-
2	320 Other Equipment	7,640	-	-	-	7,640	-
3	321 LNG Equipment	84,156	-	-	-	84,156	-
4	Total Mfg Gas Prod. Plant	91,796	-	-	-	91,796	-
<b>Distribution Plant:</b>							
5	375.2 Structures - City Gate Meas & Reg	45,256	-	-	-	45,256	-
6	375.7 Structures - Other Dist Sys	2,835,094	14,075	-	-	2,849,169	15,770
7	376.2 Mains - Coated/Wrapped	17,680,604	284,698	2,976	-	17,962,326	12,084
8	376.3 Mains - Bare Steel	200,686	446	8,830	-	192,301	-
9	376.4 Mains - Plastic	76,557,439	9,921,999	437,778	-	86,041,660	1,265,279
10	376.5 Mains - Joint Seals	542,145	-	-	-	542,145	-
11	376.6 Mains - Cathodic Protection	664,488	70,702	1,033	-	734,158	63,925
12	376.8 Mains - Cast Iron	38,140	0	2,152	-	35,988	-
13	378.2 Mea & Reg Station Eq, Regulating	2,586,619	754,251	263	-	3,340,607	104,824
14	379 Mea & Reg Ta-G	39,266	-	-	-	39,266	-
15	380 Services	52,387,952	6,657,744	260,540	-	58,785,156	1,465,159
16	381 Meters	3,851,082	53,060	82,010	-	3,822,132	91,573
17	382 Meter Installations	17,073,428	1,530,590	261,495	-	18,342,522	1,596,207
18	383 House Regulators	471,129	52,138	-	-	523,268	14,498
19	386 Water Heaters/Conversion Burners	1,422,419	121,650	-	-	1,544,069	93,287
20	Total Distribution Plant	176,395,745	19,461,354	1,057,077	-	194,800,022	4,722,607
<b>General Plant:</b>							
21	389-10 Land	232,947	-	-	-	232,947	-
22	391.10 Off Furn & Eq.- Unspecified	411,202	3,652	-	-	414,854	5,295
23	393 Stores Equipment	31,520	-	-	-	31,520	-
24	394.10 Tools, Garage & Service Equipment	1,103,102	30,833	3,254	-	1,130,681	42,348
25	396 Power Operated Equipment	75,266	-	-	-	75,266	-
26	397 Communication Equipment	1,404,503	48,679	-	-	1,453,181	-
27	397.25 Comm EQ, Metscan/Telemet	112,656	-	-	-	112,656	-
28	397.35 ERT Automatic Reading Dev-G	2,872,934	23,385	-	-	2,896,319	40,310
29	Total General Plant	6,244,130	106,549	3,254	-	6,347,425	87,953
30	Total Depreciable Plant	\$ 182,731,671	\$ 19,567,902	\$ 1,060,331	\$ -	\$ 201,239,243	\$ 4,810,559
<b>Non-Depreciable Plant:</b>							
31	304.2 Land & Rights - Mfg Gas Prod. PI	6,816	-	-	-	6,816	-
32	305.0 Stuctures	161,860	-	-	-	161,860	-
33	374.4 Land Rgts, Other Distr Sy	89,111	-	-	-	89,111	-
34	374.5 Land Rgts, Rights Of Way	17,911	-	-	-	17,911	-
35	Total Non-Depreciable Plant	275,698	-	-	-	275,698	-
<b>Amortizable Plant:</b>							
36	303 Misc Intangible Plant	3,476,308	64,277	-	-	3,540,586	-
37	Total Amortizable Plant	3,476,308	64,277	-	-	3,540,586	-
38	Total Plant in Service	\$ 186,483,678	\$ 19,632,180	\$ 1,060,331	\$ -	\$ 205,055,527	\$ 4,810,559

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
ACCUMULATED DEPRECIATION & AMORTIZATION  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) Account Name	(2) RESERVE BALANCE 1/1	(3) RETIREMENTS	(4) ADJUSTMENTS	(5) COST OF REMOVAL	(6) SALVAGE	(7) DEPRECIATION	(8) RESERVE BALANCE 12/31
<b>Mfg. Gas Produc. Plant:</b>								
1	305 Struct. And Improvements	\$ 129,465	\$ -	\$ -	\$ -	\$ -	\$ -	129,465
2	320 Other Equipment	2,756	-	-	-	-	-	2,756
3	321 LNG Equipment	56,611	-	-	-	-	-	56,611
4	Total Mfg Gas Prod. Plant	188,832	-	-	-	-	-	188,832
<b>Distribution Plant:</b>								
5	375.2 Structures - City Gate Meas & Reg	18,733	-	-	-	-	1,656	20,389
6	375.7 Structures - Other Dist Sys	715,306	-	-	-	-	7,127	722,433
7	376.2 Mains - Coated/Wrapped	3,271,276	2,976	-	16,102	-	472,779	3,724,977
8	376.3 Mains - Bare Steel	(1,562,296)	8,830	-	318,315	-	-	(1,889,442)
9	376.4 Mains - Plastic	25,760,864	437,778	-	273,170	-	2,159,100	27,209,016
10	376.5 Mains - Joint Seals	466,419	-	-	-	-	75,726	542,145
11	376.6 Mains - Cathodic Protection	419,972	1,033	-	180	-	59,937	478,696
12	376.8 Mains - Cast Iron	(777,986)	2,152	-	180,180	-	-	(960,318)
13	378.2 Mea & Reg Station Eq, Regulating	633,411	263	-	1,203	-	75,689	707,635
14	379 Mea & Reg Ta-G	706	-	-	-	-	883	1,589
15	380 Services	18,355,548	260,540	-	272,591	-	2,069,799	19,892,215
16	381 Meters	1,553,595	82,010	-	7,039	-	76,722	1,541,268
17	382 Meter Installations	5,583,258	261,495	-	26,215	-	628,560	5,924,107
18	383 House Regulators	112,257	-	-	-	-	16,318	128,575
19	386 Water Heaters/Conversion Burners	703,478	-	-	5,489	7,069	70,850	775,908
20	Total Distribution Plant	55,254,539	1,057,077	-	1,100,484	7,069	5,715,145	58,819,193
<b>General Plant:</b>								
21	391.10 Off Furn & Eq.- Unspecified	136,307	-	-	-	-	24,291	160,599
22	393 Stores Equipment	31,511	-	-	-	-	-	31,511
23	394.10 Tools, Garage & Service Equipment	498,718	3,254	-	-	-	43,554	539,019
24	396 Power Operated Equipment	65,738	-	-	-	-	4,185	69,923
25	397 Communication Equipment	967,284	-	-	638	-	108,730	1,075,375
26	397.25 Comm EQ, Metscan/Telemet	101,310	-	-	-	-	8,663	109,973
27	397.35 Comm EQ, Itron Equip	1,759,793	-	-	-	-	214,246	1,974,038
28	Total General Plant	3,560,661	3,254	-	638	-	403,669	3,960,437
<b>Amortizable Plant:</b>								
29	303 Misc Intangible Plant	2,473,684	-	-	-	-	426,964	2,900,648
30	Total Amortizable Plant	2,473,684	-	-	-	-	426,964	2,900,648
31	Total Accumulated Depreciation & Amortization	\$ 61,477,716	\$ 1,060,331	\$ -	\$ 1,101,122	\$ 7,069	\$ 6,545,778	\$ 65,869,111

090000

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
RATE BASE  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	DESCRIPTION	(1)	(2)	(3)	(4)	(5)
			RATE BASE AT DECEMBER 31, 2016	PRO FORMA ADJUSTMENTS	SETTLEMENT UPDATE	PRO FORMA RATE BASE AT DECEMBER 31, 2016
1	Utility Plant In Service		\$ 209,866,086	\$ 2,193,573	\$ -	\$ 212,059,659
2	Less: Reserve for Depreciation		65,869,111	1,279,107	(231,365)	66,916,853
3	Net Utility Plant		143,996,975	914,467	231,365	145,142,807
4	Add: M&S Inventories		2,421,808	-	-	2,421,808
5	Cash Working Capital <sup>(1)</sup>		1,192,580	195,383	(62,809)	1,325,154
6	Sub-Total		3,614,388	195,383	(62,809)	3,746,962
7	Less: Net Deferred Income Taxes		15,167,491	1,631,333	-	16,798,824
8	Customer Advances		-	-	-	-
9	Customers Deposits		430,588	-	-	430,588
10	Sub-Total		15,598,079	1,631,333	-	17,229,412
11	Rate Base		\$ 132,013,284	\$ (521,483)	\$ 168,556	\$ 131,660,357

Notes

(1) Computed Working Capital Based on Test Year O&M Expenses. Refer to Schedule RevReq-5-2

000061

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
RATE BASE ITEMS  
QUARTERLY BALANCES

LINE NO.	(1) DESCRIPTION	(2) DECEMBER 31 2016	(3) SEPTEMBER 30 2016	(4) JUNE 30 2016	(5) MARCH 31 2016	(6) DECEMBER 31 2015	(7) 5 QUARTER AVERAGE
	Utility Plant in Service						
1	Plant In Service	\$ 205,055,527	\$ 193,239,987	\$ 192,269,462	\$ 189,209,236	\$ 186,483,678	\$ 193,251,578
2	Completed Construction not Classified	4,810,559	6,798,514	5,233,962	7,261,364	7,950,054	6,410,891
3	Total Utility Plant in Service	<u>209,866,086</u>	<u>200,038,501</u>	<u>197,503,424</u>	<u>196,470,600</u>	<u>194,433,732</u>	<u>199,662,469</u>
4	Depreciation Reserve	\$ (65,869,111)	\$ (65,302,474)	\$ (63,952,560)	\$ (62,897,701)	\$ (61,477,716)	\$ (63,899,912)
	Add:						
	M&S Inventories						
5	Material and Supplies	\$ 2,191,928	\$ 2,302,844	\$ 2,199,829	\$ 2,066,014	\$ 1,960,475	\$ 2,144,218
6	Stores Expense Undistributed	229,880	152,222	290,915	387,527	305,511	273,211
7	Total M&S Inventories	<u>\$ 2,421,808</u>	<u>\$ 2,455,066</u>	<u>\$ 2,490,744</u>	<u>\$ 2,453,541</u>	<u>\$ 2,265,986</u>	<u>\$ 2,417,429</u>
8	Cash Working Capital	\$ 1,192,580	\$ 1,192,580	\$ 1,192,580	\$ 1,192,580	\$ 1,192,580	\$ 1,192,580
	Less:						
	Total Deferred Income Taxes						
9	Def Inc Tax - Accel Depr	\$ 15,759,546	\$ 19,242,404	\$ 18,423,290	\$ 18,174,347	\$ 17,181,308	\$ 17,756,179
10	Def Inc Tax - FAS 87 / 106	(849,723)	(859,279)	(721,765)	(738,323)	(687,559)	(771,330)
11	Def Inc Tax - Bad Debt	(19,530)	(24,515)	(37,342)	(36,565)	(27,218)	(29,034)
12	Def Inc Tax - Prepaid Property Tax	225,277	(23,256)	231,227	(97,340)	174,879	102,157
13	Def Inc Tax - Def Rate Case Costs	18,120	23,556	-	-	-	8,335
14	Def Inc Tax - Unamort ITC (Acct 255)	36,300	36,300	36,300	-	-	21,780
15	Def Inc Tax - Accum Non-Current	418	418	418	418	418	418
16	Def Inc Tax - Insurance Claim	(2,917)	(2,535)	(1,378)	(1,486)	(878)	(1,839)
17	Total Deferred Income Taxes	<u>\$ 15,167,491</u>	<u>\$ 18,393,093</u>	<u>\$ 17,930,750</u>	<u>\$ 17,301,051</u>	<u>\$ 16,640,950</u>	<u>\$ 17,086,666</u>
18	Customer Advances	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
19	Customer Deposits	\$ 430,588	\$ 415,978	\$ 408,192	\$ 430,464	\$ 434,532	\$ 423,951
20	Rate Base	<u>\$ 132,013,284</u>	<u>\$ 119,574,602</u>	<u>\$ 118,895,246</u>	<u>\$ 119,487,505</u>	<u>\$ 119,339,100</u>	<u>\$ 121,861,949</u>

000062

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
CASH WORKING CAPITAL  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) TEST YEAR ACTUAL	(4) PRO FORMA ADJUSTMENTS	(5) SETTLEMENT UPDATE	(6) TEST YEAR PRO FORMA
1	Distribution O&M Expense	Schedule RevReq-2	\$ 11,485,431	\$ 975,830	\$ (343,857)	\$ 12,117,404
2	Tax Expense	Schedule RevReq-2	6,721,895	2,007,121	(615,059)	8,113,957
3	Total		\$ 18,207,326	\$ 2,982,951	\$ (958,916)	\$ 20,231,361
4	Cash Working Capital Requirement:					
5	Other O&M Expense Days Lag (1) / 366	24 days	6.55%	6.55%	6.55%	6.55%
6	Total Cash Working Capital	Line 5 X Line 3	\$ 1,192,580	\$ 195,383	\$ (62,809)	\$ 1,325,154

Notes

(1) Refer to Lead-Lag Study in Direct Testimony of Daniel Nawazelski

000063

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
SUPPLEMENTAL PLANT PRO FORMA ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) BALANCE 12/31/2016
<b>Plant In Service:</b>		
<u>New Hampshire</u>		
1	304 Land - Barberry Lane	\$ 6,816
2	305 Structures & Improvements	161,860
3	311 LP Gas Equipment	-
4	320 Other Equipment	7,640
5	321 LNG Equipment	84,156
6	Total NH	\$ 260,472
<u>Maine</u>		
7	304 Land - Portland	\$ -
8	305 Structures & Improvements	99,759
9	311 LP Gas Equipment	703,742
10	320 Other Equipment	62,375
11	360 Land - Lewiston	58,301
12	361 Structures & Improvements	568,201
13	362 Gas Holders	3,771,649
14	363 Other Equipment	87,313
15	Total ME	\$ 5,351,340
16	Total Plant In Service NH And ME	\$ 5,611,812
17	NH Allocation Via Annual Proportional Responsibility Factor	43.73% \$ 2,454,045
18	ME Allocation Via Annual Proportional Responsibility Factor	56.27% \$ 3,157,766
<b>Depreciation Reserve</b>		
<u>New Hampshire</u>		
19	305 Structures & Improvements	\$ 129,465
20	311 LP Gas Equipment	-
21	320 Other Equipment	2,756
22	321 LNG Equipment	56,611
23	Total NH	\$ 188,832
<u>Maine</u>		
24	305 Structures & Improvements	\$ 70,701
25	311 LP Gas Equipment	703,742
26	320 Other Equipment	41,619
27	361 Structures & Improvements	220,358
28	362 Gas Holders	2,742,181
29	363 Other Equipment	91,983
30	Total ME	\$ 3,870,584
31	Total Depreciation Reserve NH And ME	\$ 4,059,417
32	NH Allocation Via Annual Proportional Responsibility Factor	43.73% \$ 1,775,183
33	ME Allocation Via Annual Proportional Responsibility Factor	56.27% \$ 2,284,234
<b>Supplemental Plant Adjustment</b>		
34	NH Supplemental Plant Adjustment (Line 17 - Line 6)	\$ 2,193,573
35	ME Supplemental Plant Adjustment (Line 18 - Line 15)	\$ (2,193,573)
<b>Supplemental Depreciation Reserve Adjustment</b>		
36	NH Supplemental Plant Adjustment (Line 32 - Line 23)	\$ 1,586,351
37	ME Supplemental Plant Adjustment (Line 33 - Line 30)	\$ (1,586,351)

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
DEFERRED INCOME TAX PRO FORMA ADJUSTMENT  
SETTLEMENT ADJUSTMENT PURSUANT TO DOCKET 2008-155  
12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	(1) DESCRIPTION	(2) DECEMBER 31 2016
1	Nisource Original Plant Federal and State DIT Basis	\$ 7,722,002
2	Unitil Acquired Plant Federal and State DIT Basis	6,211,759
3	Greater of Line 1 or Line 2 to be Utilized as DIT Basis per Stipulation	<u>\$ 7,722,002</u>
4	Post-Acquisition Capital Expenditures Federal and State DIT Basis	\$ 17,237,606
5	Net Operating Loss DIT Related to Rate Base at 12/31/16	(7,689,820)
6	Total Plant and Capex Federal and State DIT to be Used in Rate Base (Line 3 + Line 4 + Line 5)	<u>\$ 17,269,788</u>
7	Less Test Year: Def Inc Tax - Accel Depr	<u>15,759,546</u>
8	Required Pro Forma Adjustment (Line 6 - Line 7)	<u>\$ 1,510,242</u>

000065

NORTHERN UTILITIES, INC.  
WEIGHTED COST OF CAPITAL  
DECEMBER 31, 2016 PRO FORMA

LINE NO.	(1) DESCRIPTION	(2) AMOUNT	(3) PROFORMA ADJUSTMENT	(4) PROFORMED AMOUNT	(5) WEIGHT	(6) COST OF CAPITAL	(7) WEIGHTED COST OF CAPITAL	(8) REFERENCE
1	Common Stock Equity	\$ 155,183,729	\$ -	\$ 155,183,729	51.70%	9.50%	4.91%	Schedule RevReq 6-1 and 6-2
2	Preferred Stock Equity	-	-	-	-	-	-	Schedule RevReq 6-1 and 6-3
3	Long Term Debt	145,000,000	-	145,000,000	48.30%	5.55%	2.68%	Schedule RevReq 6-1 and 6-4
4	Short Term Debt	-	-	-	0.00%	2.19%	0.00%	Schedule RevReq 6-1 and 6-5
5	Total	<u>\$ 300,183,729</u>	<u>\$ -</u>	<u>\$ 300,183,729</u>	<u>100.00%</u>		<u>7.59%</u>	

990000

**NORTHERN UTILITIES, INC.**  
**CAPITAL STRUCTURE FOR RATEMAKING PURPOSES**  
**DECEMBER 31, 2016 PRO FORMA**

(1)	(2)	(3)	(4)	(5)	
LINE NO.	DESCRIPTION	AMOUNT	PROFORMA ADJUSTMENT	PROFORMA AMOUNT	PERCENT
1	Common Stock Equity				
2	Common Stock	\$ 1,000	\$ -	\$ 1,000	
3	Misc. Paid In Capital	143,199,000	-	143,199,000	
4	Retained Earnings	<u>11,983,729</u>	<u>-</u>	<u>11,983,729</u>	
5	Total Common Stock Equity	155,183,729	-	155,183,729	51.70%
6	Preferred Stock Equity	-	-	-	-
7	Long-Term Debt	145,000,000	-	145,000,000	48.30%
8	Short-Term Debt <sup>(1)</sup>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0.00%</u>
9	Total	<u>\$ 300,183,729</u>	<u>\$ -</u>	<u>\$ 300,183,729</u>	<u>100.0%</u>

**Notes**

(1) Refer to Schedule RevReq-6-5, Page 1 of 2

**NORTHERN UTILITIES, INC.  
COST OF COMMON EQUITY CAPITAL  
12 MONTHS ENDED DECEMBER 31, 2016**

**THE INFORMATION CONCERNING THE COST OF COMMON EQUITY CAPITAL IS PROVIDED  
IN THE TESTIMONY AND EXHIBITS OF MR. ROBERT HEVERT**

000068

**NORTHERN UTILITIES, INC.  
WEIGHTED AVERAGE COST OF PREFERRED STOCK  
12 MONTHS ENDED DECEMBER 31, 2016**

**NORTHERN UTILITIES, INC. DOES NOT HAVE PREFERRED STOCK OUTSTANDING**

000069

NORTHERN UTILITIES, INC.  
WEIGHTED AVERAGE COST OF LONG-TERM DEBT  
DECEMBER 31, 2016 PRO FORMA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
LINE NO.	ISSUE	DATE ISSUED	TERM	FACE VALUE	OUTSTANDING AMOUNT	ISSUANCE COSTS	NET PROCEEDS RATIO [(5)-(7)/(5)]	UNAMORTIZED ISSUANCE COSTS	NET PROCEEDS OUTSTANDING (6)-(9)	ANNUAL ISSUANCE COST	ANNUAL INTEREST COST Rate * (6)	TOTAL ANNUAL COST (11)+(12)	COST RATE BASED ON NET PROCEEDS (13)/[(6)-(9)]
1	6.95% Sr. Notes	12/3/2008	10 Yrs	\$ 30,000,000	\$ 10,000,000	\$ 266,834	99.11%	\$ 51,188	\$ 9,948,812	\$ 26,707	\$ 695,000	\$ 721,707	7.25%
2	7.72% Sr. Notes	12/3/2008	30 Yrs	50,000,000	50,000,000	435,899	99.13%	318,536	49,681,464	14,534	3,860,000	3,874,534	7.80%
3	5.29% Sr. Notes	3/2/2010	10 Yrs	25,000,000	25,000,000	368,866	98.52%	116,444	24,883,556	36,772	1,322,500	1,359,272	5.46%
4	4.42% Sr. Notes	10/15/2014	30 Yrs	50,000,000	50,000,000	482,981	99.03%	447,428	49,552,572	16,099	2,210,000	2,226,099	4.49%
5	3.52% Sr. Notes	11/1/2017	10 Yrs	20,000,000	20,000,000	140,539	99.30%	140,539	19,859,461	14,054	704,000	718,054	3.62%
6	4.32% Sr. Notes	11/1/2017	30 Yrs	30,000,000	30,000,000	185,539	99.38%	185,539	29,814,461	6,185	1,296,000	1,302,185	4.37%
7	Total			\$ 205,000,000	\$ 185,000,000	\$ 1,880,658		\$ 1,259,675	\$ 183,740,325	\$ 114,351	\$ 10,087,500	\$ 10,201,851	5.55%

000070

**NORTHERN UTILITIES, INC.  
DISTRIBUTION SHORT-TERM DEBT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-6-5  
Page 1 of 2**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) TOTAL</b>
1	Average 2016 Short-Term Debt Balance	\$ 23,493,566
2	Average Accrued Revenue Net of Unbilled	(7,514,780)
3	Purchased Gas Working Capital	(3,517,711)
4	Average CWIP Balance	(24,628,577)
5	Short-Term Debt Balance Used In Capital Structure (Max of Sum of Lines 1-4 Or Zero)	<u>\$ -</u>

**NORTHERN UTILITIES, INC.  
COST OF SHORT-TERM DEBT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Schedule RevReq-6-5  
Page 2 of 2**

<b>LINE NO.</b>	<b>(1) MONTH</b>	<b>(2) MONTH-END AMOUNT OUTSTANDING</b>	<b>(3) AVERAGE DAILY BORROWINGS</b>	<b>(4) MONTHLY SHORT-TERM INTEREST</b>	<b>(5) INTEREST RATE<sup>(1)</sup></b>
1	January 2016	23,139,112	\$ 20,259,745	\$ 29,234	1.70%
2	February 2016	24,017,936	21,242,483	28,744	1.70%
3	March 2016	21,903,664	21,721,629	31,545	1.71%
4	April 2016	24,718,368	22,294,538	31,339	1.71%
5	May 2016	22,583,562	22,232,158	32,348	1.71%
6	June 2016	28,909,816	25,805,444	36,616	1.73%
7	July 2016	34,814,539	31,615,398	47,118	1.75%
8	August 2016	9,688,340	27,824,097	42,124	1.78%
9	September 2016	14,933,016	11,916,313	17,651	1.80%
10	October 2016	21,524,718	18,237,562	27,953	1.80%
11	November 2016	25,490,682	23,345,246	35,132	1.83%
12	December 2016	36,977,214	35,428,174	59,456	1.98%
13	January 2017	36,188,037	35,076,715	61,041	2.05%
14	February 2017	33,134,699	30,932,429	48,743	2.05%
15	March 2017	28,491,707	28,704,035	53,272	2.19%

**Notes**

(1) The Interest Rate is calculated as follows: [Column (4) / # of days in month \* 365] / Column (3).

**Schedule RevReq-6-6**

**NORTHERN UTILITIES, INC.  
HISTORICAL CAPITAL STRUCTURE  
DECEMBER 31, 20XX**

LINE NO.	(1)	(2)	(3)	(4)
	DESCRIPTION	2016	2015	2014
1	Common Stock Equity	\$ 155,183,729	\$ 123,556,063	\$ 122,332,098
2	Preferred Stock Equity	-	-	-
3	Long-Term Debt	145,000,000	155,000,000	155,000,000
4	Short-Term Debt (Year-End)	<u>36,977,214</u>	<u>17,820,632</u>	<u>12,710,517</u>
5	Total	<u>\$ 337,160,943</u>	<u>\$ 296,376,696</u>	<u>\$ 290,042,615</u>

000073

**Schedule RevReq-6-7**

**NORTHERN UTILITIES, INC.  
HISTORICAL CAPITALIZATION RATIOS  
DECEMBER 31, 20XX**

<b>LINE NO.</b>	<b>(1) DESCRIPTION</b>	<b>(2) 2016</b>	<b>(3) 2015</b>	<b>(4) 2014</b>
1	Common Stock Equity	46.03%	41.69%	42.18%
2	Preferred Stock Equity	-	-	-
3	Long-Term Debt	43.01%	52.30%	53.44%
4	Short-Term Debt (Year-End)	10.97%	6.01%	4.38%
5	Total	100.00%	100.00%	100.00%

000074

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
RATE CASE EXPENSE COSTS  
PROJECTED THROUGH THE COMPLETION OF THE CASE

LINE NO.	(1) DESCRIPTION	(2) AS FILED	(3) AS OF 2/7/2018	(4) ESTIMATE TO COMPLETION	(5) UPDATED TOTAL PROJECTED COST
1	Legal	\$ 100,000	\$ -	\$ -	\$ -
2	Accounting Cost Of Service Study	66,000	34,250	11,132	45,382
3	Marginal Cost Study	17,000	7,400	1,200	8,600
4	Rate Design	26,000	14,512	4,598	19,110
5	Depreciation	51,000	27,013	12,480	39,493
6	Lead Lag	18,000	15,775	600	16,375
7	Return On Equity	85,000	34,348	3,600	37,948
8	Commission Costs	20,000	-	-	-
9	Miscellaneous	33,000	25,717	-	25,717
10	Total	<u>416,000</u>	<u>159,014</u>	<u>33,610</u>	<u>192,624</u>

000075

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
WORKPAPERS SUPPORTING REVENUE REQUIREMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

000076

Northern Utilities, Inc.  
Gas Inc Stmt - NH - YTD  
R\_NU\_4\_BF\_NH

	2015 Base	2015 Flowthru	Total	2016 Base	2016 Flowthru	Total
<b>OPERATING REVENUES</b>						
Sales:						
Residential (480)	15,524,274	16,126,270	31,650,544	15,215,731	10,868,909	26,084,639
General Service (481)	9,402,596	19,117,799	28,520,395	8,947,067	12,113,407	21,060,474
Firm Transport Revenues (484, 489) (External Sup)	7,166,248	1,011,983	8,178,231	7,672,203	739,494	8,411,697
Sales for Resale (483)	-	5,958,987	5,958,987	-	3,382,422	3,382,422
Other Sales (495)	(325,863)	1,723,455	1,397,592	(154,095)	5,287,268	5,133,173
<b>Total Sales</b>	<b>31,767,255</b>	<b>43,938,495</b>	<b>75,705,750</b>	<b>31,680,906</b>	<b>32,391,500</b>	<b>64,072,405</b>
Other Operating Revenues:						
Late Charge (487)	158,330	-	158,330	104,863	-	104,863
Misc. Service Revenues (488)	751,110	-	751,110	721,444	-	721,444
Rent from Property (493 & 457)	66,029	-	66,029	152,772	-	152,772
Other Revenues	-	(539,300)	(539,300)	-	(104,143)	(104,143)
<b>Total Other Operating Revenues</b>	<b>975,468</b>	<b>(539,300)</b>	<b>436,168</b>	<b>979,079</b>	<b>(104,143)</b>	<b>874,936</b>
<b>TOTAL OPERATING REVENUES</b>	<b>32,742,723</b>	<b>43,399,195</b>	<b>76,141,918</b>	<b>32,659,985</b>	<b>32,287,357</b>	<b>64,947,341</b>
<b>OPERATING EXPENSES</b>						
Operation & Maint. Expenses:						
Production (710-813)	358,176	39,851,347	40,209,523	409,176	29,127,210	29,536,386
Transmission (850-857)	372,390	-	372,390	394,724	-	394,724
Distribution (870-894) (586)	3,271,999	-	3,271,999	2,994,785	-	2,994,785
Cust. Accounting (901-905)	1,940,097	286,867	2,226,964	1,725,290	129,165	1,854,455
Cust. Service & Info (906-910)	3,889	1,341,468	1,345,356	2,570	1,346,436	1,349,005
Admin. & General (920-935)	6,122,598	264,023	6,386,621	6,111,515	248,135	6,359,650
<b>Total O &amp; M Expenses</b>	<b>12,069,149</b>	<b>41,743,705</b>	<b>53,812,854</b>	<b>11,638,060</b>	<b>30,850,946</b>	<b>42,489,006</b>
Other Operating Expenses:						
Deprtn. & Amort. (403-407)	5,704,647	181,571	5,886,219	6,193,310	-	6,193,310
Taxes-Other Than Inc. (408)	3,240,165	-	3,240,165	3,763,930	-	3,763,930
Federal Income Tax (409)	(226,650)	-	(226,650)	3,227,137	-	3,227,137
State Franchise Tax (409)	962,594	-	962,594	(269,173)	-	(269,173)
Def. Income Taxes (410,411)	2,660,085	-	2,660,085	4,699	-	4,699
<b>Total Other Operating Expenses</b>	<b>12,340,842</b>	<b>181,571</b>	<b>12,522,413</b>	<b>12,919,904</b>	<b>-</b>	<b>12,919,904</b>
<b>TOTAL OPERATING EXPENSES</b>	<b>24,409,990</b>	<b>41,925,276</b>	<b>66,335,267</b>	<b>24,557,964</b>	<b>30,850,946</b>	<b>55,408,910</b>
<b>NET UTILITY OPERATING INCOME</b>	<b>8,332,733</b>	<b>1,473,918</b>	<b>9,806,651</b>	<b>8,102,020</b>	<b>1,436,411</b>	<b>9,538,431</b>
<b>OTHER INCOME &amp; DEDUCTIONS</b>						
Other Income:						
AFUDC - Other Funds (41901)	49	-	49	189	-	189
Other (415- 421)	308,980	(27,697)	281,284	241,755	(18,319)	223,436
Other Income Deduc. (425, 426)	287,645	-	287,645	407,902	-	407,902
Taxes Other than Income Taxes:						
Income Tax, Other Inc & Ded	(444)	-	(444)	(71,855)	-	(71,855)
<b>Net Other Income (Deductions)</b>	<b>21,828</b>	<b>(27,697)</b>	<b>(5,868)</b>	<b>(94,103)</b>	<b>(18,319)</b>	<b>(112,422)</b>
<b>GROSS INCOME</b>	<b>8,354,561</b>	<b>1,446,222</b>	<b>9,800,783</b>	<b>8,007,917</b>	<b>1,418,093</b>	<b>9,426,010</b>
Interest Charges (427 - 432)	4,546,659	2,335	4,548,994	4,645,691	1,842	4,647,533
<b>NET INCOME</b>	<b>3,807,903</b>	<b>1,443,886</b>	<b>5,251,789</b>	<b>3,362,226</b>	<b>1,416,250</b>	<b>4,778,477</b>

Northern Utilities, Inc.  
Gas Inc Stmt - NH - YTD  
R\_NU\_4\_B\_FT&M\_NH

Workpaper - Flowthrough Detail  
1/26/2017  
1:40:44 PM  
For Periods Ending December 31, 2016

	Commodity Demand Peak	Commodity Demand C/OG Off Peak	Working Capital Peak	Working Capital Off Peak	Bad Debt Peak	Bad Debt Off Peak	Supplier Refund	Residential Low Income Assistance	Energy Efficiency	Environ Response Costs	Rate Case Exp	Recoup	Total Flowthru	Total Base	Total New Hampshire Division	Cost of Gas Total	LDAC Flowthrough Total
<b>OPERATING REVENUES</b>																	
Sales:																	
Residential (480)	\$ 8,943,620	\$ 1,182,378	\$ 6,897	\$ 405	\$ 84,071	\$ 3,209	\$ 5	\$ 162,157	\$ 499,557	\$ (14,002)	\$ 126	\$ 485	\$ 10,868,909	\$ 15,215,731	\$ 26,084,639	\$ 10,220,585	\$ 648,323
General Service (481)	10,008,171	1,553,899	7,716	796	93,971	4,026	172	186,248	274,709	(15,711)	(122)	(469)	12,113,407	8,947,067	21,060,474	11,668,752	444,655
Firm Transport Revenues (484, 489) (External Sup)	-	-	-	-	-	-	-	309,009	455,964	(25,458)	(4)	(16)	739,494	7,672,203	8,411,697	(0)	739,494
Sales for Resale (483)	4,623,754	75,705	-	-	-	-	(1,317,037)	-	-	-	-	-	3,382,422	-	3,382,422	3,382,422	-
Other Sales (495)	(526,990)	320,490	1,120	1,384	(56,315)	204	5,362,228	(42,839)	227,987	-	-	-	5,287,268	(154,095)	5,133,173	5,102,121	185,147
<b>Total Sales</b>	<b>23,048,556</b>	<b>3,132,472</b>	<b>15,734</b>	<b>2,585</b>	<b>121,726</b>	<b>7,439</b>	<b>4,045,368</b>	<b>614,575</b>	<b>1,458,217</b>	<b>(55,172)</b>	<b>-</b>	<b>-</b>	<b>32,391,500</b>	<b>31,680,906</b>	<b>64,072,405</b>	<b>30,373,880</b>	<b>2,017,620</b>
Other Operating Revenues:																	
Late Charge (487)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104,863	104,863	-
Misc. Service Revenues (488)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	721,444	721,444	-
Rent from Property (493 & 457)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	152,772	152,772	-
Other Revenues	(103,524)	(619)	-	-	-	-	-	-	-	-	-	-	(104,143)	-	(104,143)	(104,143)	-
<b>Total Other Operating Revenues</b>	<b>(103,524)</b>	<b>(619)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(104,143)</b>	<b>979,079</b>	<b>874,936</b>	<b>(104,143)</b>	<b>-</b>
<b>TOTAL OPERATING REVENUES</b>	<b>22,945,031</b>	<b>3,131,853</b>	<b>15,734</b>	<b>2,585</b>	<b>121,726</b>	<b>7,439</b>	<b>4,045,368</b>	<b>614,575</b>	<b>1,458,217</b>	<b>(55,172)</b>	<b>-</b>	<b>-</b>	<b>32,287,357</b>	<b>32,659,985</b>	<b>64,947,341</b>	<b>30,269,737</b>	<b>2,017,620</b>
<b>OPERATING EXPENSES</b>																	
Operation & Maint. Expenses:																	
Production (710-813)	22,398,475	2,738,538	-	-	-	-	4,045,368	-	-	(55,172)	-	-	29,127,210	409,176	29,536,386	29,182,381	(55,172)
Transmission (850-857)	-	-	-	-	-	-	-	-	-	-	-	-	394,724	-	394,724	-	-
Distribution (870-894) (586)	-	-	-	-	-	-	-	-	-	-	-	-	2,994,785	-	2,994,785	-	-
Cust. Accounting (901-905)	-	-	-	-	122,666	6,499	-	-	-	-	-	-	129,165	1,725,290	1,854,455	129,165	-
Cust. Service & Info (906-910)	-	-	-	-	-	-	-	-	1,346,436	-	-	-	1,346,436	2,570	1,349,005	-	1,346,436
Admin. & General (920-935)	-	-	-	-	-	-	248,135	-	-	-	-	-	248,135	6,111,515	6,359,650	-	248,135
<b>Total O &amp; M Expenses</b>	<b>22,398,475</b>	<b>2,738,538</b>	<b>-</b>	<b>-</b>	<b>122,666</b>	<b>6,499</b>	<b>4,045,368</b>	<b>248,135</b>	<b>1,346,436</b>	<b>(55,172)</b>	<b>-</b>	<b>-</b>	<b>30,850,946</b>	<b>11,638,060</b>	<b>42,489,006</b>	<b>29,311,546</b>	<b>1,539,399</b>
Other Operating Expenses:																	
Deprtn. & Amort. (403-407)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,193,310	6,193,310	-
Taxes-Other Than Inc. (408)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,763,930	3,763,930	-
Federal Income Tax (409)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,227,137	3,227,137	-
State Franchise Tax (409)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269,173)	(269,173)	-
Def. Income Taxes (410,411)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,699	4,699	-
<b>Total Other Operating Expenses</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>12,919,904</b>	<b>12,919,904</b>	<b>-</b>
<b>TOTAL OPERATING EXPENSES</b>	<b>22,398,475</b>	<b>2,738,538</b>	<b>-</b>	<b>-</b>	<b>122,666</b>	<b>6,499</b>	<b>4,045,368</b>	<b>248,135</b>	<b>1,346,436</b>	<b>(55,172)</b>	<b>-</b>	<b>-</b>	<b>30,850,946</b>	<b>24,557,964</b>	<b>55,408,910</b>	<b>29,311,546</b>	<b>1,539,399</b>
<b>NET UTILITY OPERATING INCOME</b>	<b>546,556</b>	<b>393,316</b>	<b>15,734</b>	<b>2,585</b>	<b>(939)</b>	<b>939</b>	<b>-</b>	<b>366,440</b>	<b>111,781</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,436,411</b>	<b>8,102,020</b>	<b>9,538,431</b>	<b>958,190</b>	<b>478,221</b>
<b>OTHER INCOME &amp; DEDUCTIONS</b>																	
Other Income:																	
AFUDC - Other Funds (41901)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189	189	-
Other (415- 421)	-	-	(15,846)	(2,472)	-	-	-	-	-	-	-	-	(18,319)	241,755	223,436	(18,319)	-
Other Income Deduc. (425, 426)	-	-	-	-	-	-	-	-	-	-	-	-	-	407,902	407,902	-	-
Taxes Other than Income Taxes:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Tax, Other Inc & Ded	-	-	-	-	-	-	-	-	-	-	-	-	-	(71,855)	(71,855)	-	-
<b>Net Other Income (Deductions)</b>	<b>-</b>	<b>-</b>	<b>(15,846)</b>	<b>(2,472)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(18,319)</b>	<b>(94,103)</b>	<b>(112,422)</b>	<b>(18,319)</b>	<b>-</b>
<b>GROSS INCOME</b>	<b>546,556</b>	<b>393,316</b>	<b>(112)</b>	<b>112</b>	<b>(939)</b>	<b>939</b>	<b>-</b>	<b>366,440</b>	<b>111,781</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,418,093</b>	<b>8,007,917</b>	<b>9,426,010</b>	<b>939,872</b>	<b>478,221</b>
Interest Charges (427 - 432)	1,842	-	-	-	-	-	-	-	-	-	-	-	1,842	4,645,691	4,647,533	1,842	-
<b>NET INCOME</b>	<b>\$ 544,714</b>	<b>\$ 393,316</b>	<b>\$ (112)</b>	<b>\$ 112</b>	<b>\$ (939)</b>	<b>\$ 939</b>	<b>\$ -</b>	<b>\$ 366,440</b>	<b>\$ 111,781</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,416,250</b>	<b>\$ 3,362,226</b>	<b>\$ 4,778,477</b>	<b>\$ 938,029</b>	<b>\$ 478,221</b>

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**Workpaper - Cost of Gas**

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
COST OF GAS OPERATING INCOME STATEMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	TEST YEAR COST OF GAS	LESS: INDIRECT PRODUCTION & O.H.	COST OF GAS EXCL. PROD. & O.H.
	OPERATING REVENUES			
1	TOTAL SALES	30,373,880	938,029	29,435,850
2	TOTAL OTHER OPERATING REVENUES	(104,143)	-	(104,143)
3	TOTAL OPERATING REVENUES	30,269,737	938,029	29,331,707
	OPERATING EXPENSES:			
4	OPERATING EXPENSES:			
5	PRODUCTION	29,182,381	-	29,182,381
6	TRANSMISSION	-	-	-
7	DISTRIBUTION	-	-	-
8	CUSTOMER ACCOUNTING	129,165	-	129,165
9	CUSTOMER SERVICE	-	-	-
10	ADMINISTRATIVE & GENERAL	-	-	-
11	DEPRECIATION	-	-	-
12	AMORTIZATIONS	-	-	-
13	TAXES OTHER THAN INCOME	-	-	-
14	FEDERAL INCOME TAX	-	-	-
15	STATE INCOME TAX	-	-	-
16	DEFERRED FEDERAL & STATE INCOME TAXES	-	-	-
17	INTEREST ON CUSTOMER DEPOSITS	-	-	-
18	TOTAL OPERATING EXPENSES	29,311,546	-	29,311,546
19	NET OPERATING INCOME	958,190	938,029	20,161

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
 SPECIAL CONTRACT REVENUE ADJUSTMENT - CUSTOMER 1  
 12 MONTHS ENDED DECEMBER 31, 2016

Workpaper 1.1  
**REDACTED**

*Confidential Special Contract Rates*  
*Effective March 1, 2017*



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016
Meters	1	1	1	1	1	1	1	1	1	1	1	1	12
Customer Charge													
Customer Charge Revenue													
Monthly Fixed Charge for First 200,000 Therms or Less													
Therms - First Step													
Consumption Charge - First Step													
Excess (1) - For Gas Use between 200,000 and 300,000 Therms													
Therms - Excess (1)													
Consumption Charge - Excess (1)													
Consumption Charge Revenue - Excess (1)													
Excess (2) - For Gas Use between 300,000 and 400,000 Therms													
Therms - Excess (2)													
Consumption Charge - Excess (2)													
Consumption Charge Revenue - Excess (2)													
Excess (3) - For Gas Use Over 400,000 Therms													
Therms - Excess (3)													
Consumption Charge - Excess (3)													
Consumption Charge Revenue - Excess (3)													
2017 Proforma Revenue													
Less: 2016 Actual Revenue													
Net Revenue Adjustment													

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
SPECIAL CONTRACT REVENUE ADJUSTMENT - CUSTOMER 2  
12 MONTHS ENDED DECEMBER 31, 2016

Workpaper 1.2  
**REDACTED**

*Confidential Special Contract Rates*  
*Effective December 1, 2017*

Customer Charge:  
All Therms



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016
Meters	2	2	2	2	2	2	2	2	2	2	2	2	24
Customer Charge													
Customer Charge Revenue													
Therms													
Consumption Charge													
Consumption Charge Revenue													
2017 Proforma Revenue													
Less: 2016 Actual Revenue													
Net Revenue Adjustment													

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UNION PAYROLL ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

Workpaper 2.1

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Payroll - YTD through June 4, 2016	\$ 1,226,327
2	2016 Salary & Wage Increase <sup>(1)</sup>	3.00%
3	Union Payroll Annualization	<u>\$ 36,790</u>

Notes

(1) Average Union Increase of 3.00% effective June 5, 2016

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
UNION AND NONUNION PAYROLL/COMPENSATION<sup>(1)</sup>  
12 Months Ended December 31, 2016**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	Union Weekly Payroll	\$ 2,950,566
	Nonunion	
2	Hourly	148,945
3	Salaried	729,409
4	Total Nonunion Payroll <sup>(2)</sup>	<u>878,354</u>
5	Total Payroll <sup>(3)</sup>	3,828,920
6	Payroll Capitalization <sup>(3)</sup>	<u>(1,833,116)</u>
7	Test Year O&M Payroll	<u>\$ 1,995,803</u>

**Notes**

(1) Payroll Allocated to Union, Non-Union, Hourly and Salaried Payroll by the Totals from ADP 2016 Year End Payroll Registers

(2) Includes Incentive Compensation at Target of \$52,923

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL SUMMARY  
FOR COMPUTATION OF PAYROLL BENEFIT RELATED OVERHEADS**

**Worksheet 2.3**

LINE NO.	(1) DESCRIPTION	(2) 2016 INCENTIVE COMP AT TARGET
1	O&M PAYROLL:	
2	OPERATIONS	1,033,954
3	MAINTENANCE	99,813
4	TOTAL O&M PAYROLL	1,133,767
5	CONSTRUCTION PAYROLL:	
6	DIRECT	528,149
7	INDIRECT	967,334
8	TOTAL CONSTRUCTION PAYROLL	1,495,483
9	OTHER PAYROLL:	
10	JOBGING	17,232
11	CLEARING ACCOUNTS	187,117
12	UNPRODUCTIVE TIME	148,083
13	MOBILE DATA SYSTEMS (MDS)	815,391
14	INCENTIVE COMPENSATION	52,923
15	OTHER	32,261
16	TOTAL OTHER PAYROLL	1,253,007
17	TOTAL PAYROLL	3,882,257
18	O&M PAYROLL:	
19	OPERATIONS	1,033,954
20	MAINTENANCE	99,813
21	ALLOCATED CLEARING	56,750
22	ALLOCATED UNPRODUCTIVE	23,693
23	ALLOCATED MDS	773,125
24	ALLOCATED INCENTIVE COMPENSATION	8,468
25	TOTAL O&M PAYROLL	1,995,803
26		
27	CONSTRUCTION PAYROLL:	
28	DIRECT	528,149
29	INDIRECT	967,334
30	ALLOCATED CLEARING	130,367
31	ALLOCATED UNPRODUCTIVE	124,390
32	ALLOCATED MDS	38,421
33	ALLOCATED INCENTIVE COMPENSATION	44,455
34	TOTAL CONSTRUCTION PAYROLL	1,833,116
35	TOTAL PAYROLL, NET OF OTHER PAYROLL	3,828,920
36	TOTAL OTHER PAYROLL:	
37	JOBGING	17,232
38	BELOW THE LINE MDS	3,845
39	OTHER	32,261
40	TOTAL OTHER PAYROLL	53,338
41	TOTAL PAYROLL, WITH INCENTIVE COMP ADJ TO TARGET	3,882,257

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL - INCENTIVE COMPENSATION ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) TOTAL
<b><u>Northern Utilities, Inc. Payroll:</u></b>		
Adjustment to Reflect Incentive Compensation at Target		
1	Test Year Accrued Incentive Compensation	\$ 73,562
2	Incentive Compensation at Target	52,923
3	Test Year Accounting Adjustment to Reflect Incentive Compensation at Target (L.2 - L.1)	\$ (20,640)
4	Capitalized Payroll Adjustment at 48.00%	9,907
5	Test Year Incentive Comp Accounting Adjustment to O&M (L.3 + L.4)	\$ (10,733)
<b><u>USC Payroll, Allocated to Northern Utilities, Inc. - NH Division:</u></b>		
Adjustment to Reflect Incentive Compensation at Target		
6	Test Year Accrued Incentive Compensation at USC	\$ 3,959,696
7	Percentage Billed to NuNH in 2016	18.68%
8	Test Year Accrued Incentive Compensation	739,671
9	Incentive Compensation at Target	532,138
10	Test Year Accounting Adjustment to Reflect Incentive Compensation at Target (L.9 - L.8)	(207,534)
11	Capitalized Payroll Adjustment at 30.53%	63,360
12	Test Year Incentive Comp Accounting Adjustment to O&M (L.10 + L.11)	\$ (144,174)

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
MEDICAL AND DENTAL INSURANCE  
CALCULATION OF PROFORMA 2017 AND 2018 MEDICAL AND DENTAL EXPENSE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016

Line No.	Coverage	Employee Census <sup>(1)</sup>			2017 Rates			- Cost -				
		- Medical -			- Medical <sup>(2)</sup> -			- Medical -			Total	
		CDHP	EPO	Dental	CDHP	EPO	Dental <sup>(3)</sup>	CDHP	EPO	Medical	Dental	Total
1	Individual	-	7	9	\$ 606.00	\$ 833.95	\$ 48.57	\$ -	\$ 5,838	\$ 5,838	\$ 437	\$ 6,275
2	Two Person	-	9	12	1,042.14	1,504.16	90.52	-	13,537	13,537	1,086	14,624
3	Family	4	11	20	1,414.67	2,075.29	162.01	5,659	22,828	28,487	3,240	31,727
4	Total	4	27	41				5,659	42,203	47,862	4,764	52,626
5	Annual Cost based on Employee Enrollments at December 31, 2016							67,904	506,439	574,344	57,163	631,506
6	Employee Contribution <sup>(4)</sup>							(13,581)	(101,288)	(114,869)	(11,433)	(126,301)
7	Net Cost							54,323	405,151	459,475	45,730	505,205
8	Plus: Company Contribution to HSA							4,000	-	4,000	-	4,000
9	Payments to Employees to Opt out							4,527	-	4,527	-	4,527
10	Total HSA and Opt out Payments							8,527	-	8,527	-	8,527
11	Proformed 2017 Medical and Dental Cost							62,850	405,151	468,002	45,730	513,732
12	Projected Increase in Premium Rates Effective January 1, 2018 <sup>(5)</sup>							4,120	28,361	32,480	915	33,395
13	Proformed 2017 and 2018 Medical and Dental Cost							66,970	433,512	500,482	46,645	547,127
14	Amount Chargeable to Capital <sup>(6)</sup>							(36,635)	(243,580)	(280,215)	(26,209)	(306,424)
15	Proforma 2017 and 2018 O&M Expense							30,335	189,932	220,267	20,436	240,703
16	Less 2016 O&M Medical and Dental Expense <sup>(7)</sup>							31,108	199,532	230,640	19,564	250,204
17	2017 and 2018 O&M Medical and Dental Insurance Increase/(Decrease)							\$ (774)	\$ (9,600)	\$ (10,373)	\$ 872	\$ (9,501)

Notes

- (1) Insurance Enrollments as of December 31, 2016.  
(2) Medical Monthly Premiums Effective July 1, 2017  
(3) Dental Monthly Premiums Effective January 1, 2017  
(4) Employee Contributions: 20%  
(5) Premium Rates are Projected to Increase by 7% for Medical and 2% for Dental Effective January 1, 2018.  
(6) Refer to Workpaper 4.1 for Capitalization Rate: 44.95%  
(7) Refer to Workpaper 3.2

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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
MEDICAL AND DENTAL INSURANCE  
CALCULATION OF 2016 MEDICAL AND DENTAL EXPENSE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016

Line No.	Coverage	Employee Census <sup>(1)</sup>			2016 Rates			- Cost -				
		- Medical -			- Medical <sup>(2)</sup> -			- Medical -		Total		
		CDHP	EPO	Dental	CDHP	EPO	Dental <sup>(3)</sup>	CDHP	EPO	Medical	Dental	Total
1	Individual	-	7	9	\$ 632.62	\$ 907.76	\$ 48.12	\$ -	\$ 6,354	\$ 6,354	\$ 433	\$ 6,787
2	Two Person	-	9	12	1,131.36	1,689.05	89.63	-	15,201	15,201	1,076	16,277
3	Family	4	11	20	1,555.30	2,353.09	157.14	6,221	25,884	32,105	3,143	35,248
4	Total	4	27	41				6,221	47,440	53,661	4,651	58,312
5	Annual Cost based on Employee Enrollments at December 31, 2016							74,654	569,277	643,932	55,817	699,749
6	Employee Contribution <sup>(4)</sup>							(14,931)	(113,855)	(128,786)	(11,163)	(139,950)
7	Net Cost							59,724	455,422	515,145	44,654	559,799
8	Plus: Company Contribution to HSA							4,000	-	4,000	-	4,000
9	Payments to Employees to Opt out							4,977	-	4,977	-	4,977
10	Total HSA and Opt out Payments							8,977	-	8,977	-	8,977
11	Total 2016 Medical and Dental Insurance Costs							68,700	455,422	524,122	44,654	568,776
12	Amount Chargeable to Capital <sup>(6)</sup>							(37,592)	(255,890)	(293,482)	(25,090)	(318,572)
13	2016 O&M Medical and Dental Expense							\$ 31,108	\$ 199,532	\$ 230,640	\$ 19,564	\$ 250,204

Notes

- (1) Insurance Enrollments as of December 31, 2016
- (2) Medical and Dental Monthly Premiums Effective January 1, 2016
- (3) Employee Contributions: 20%
- (4) Refer to Workpaper 4.1 for Capitalization Rate: 44.95%

000087

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
MEDICAL AND DENTAL INSURANCE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016**

Line No.	DESCRIPTION	2016	2017
1	Medical Insurance - NH	\$ 974,113	\$ 1,052,319
2	Benefit Cost Capitalized - NH <sup>(1)</sup>	(437,864)	(481,751)
3	Subtotal Medical Costs	<u>536,249</u>	<u>570,567</u>
4	Medical Ins - Emp Contr - NH	(127,154)	(130,478)
5	Medical Ins - Drug Subsidy	(16,462)	(10,472)
6	Net Test Year Medical Costs	<u>392,634</u>	<u>429,617</u>
7	Dental Insurance - NH	41,440	40,900
8	Benefit Cost Capitalized - NH	(18,627)	(18,724)
9	Subtotal Dental Costs	<u>22,813</u>	<u>22,176</u>
10	Dental Insurance - Emp Contribution - NH	(10,968)	(11,370)
11	Net Test Year Dental Costs	<u>11,845</u>	<u>10,807</u>
12	Total New Hampshire Test Year Medical & Dental Expense	<u>\$ 404,478</u>	<u>\$ 440,424</u>

Notes

(1) 2016 Capitalization Rate of 44.95% and 2017 Capitalization Rate of 45.78%

UNITIL SERVICE CORP.  
MEDICAL AND DENTAL INSURANCE  
CALCULATION OF PROFORMA 2017 AND 2018 MEDICAL AND DENTAL EXPENSE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016

Line No.	Coverage	Employee Census <sup>(1)</sup>				2017 Rates				- Cost -						
		- Medical -		- Dental -		- Medical <sup>(2)</sup> -		- Dental <sup>(3)</sup> -		- Medical -		- Dental -		Total Dental	Total	
		CDHP	PPO	Premium	Standard	CDHP	PPO	Premium	Standard	CDHP	PPO	Total Medical	Premium	Standard	Total Dental	Total
1	Individual	81	-	78	1	\$ 606.00	\$ 790.01	\$ 48.57	\$ 47.18	\$ 49,086	\$ -	\$ 49,086	\$ 3,788	\$ 47	\$ 3,836	\$ 52,922
2	Two Person	53	-	61	-	1,042.14	1,422.18	90.52	87.71	55,233	-	55,233	5,522	-	5,522	60,755
3	Family	68	2	90	3	1,414.67	1,961.13	162.01	155.44	96,198	3,922	100,120	14,581	466	15,047	115,167
4	Total	202	2	229	4					200,517	3,922	204,439	23,891	514	24,405	228,844
5	Annual Cost based on Employee Enrollments at December 31, 2016									2,406,204	47,067	2,453,271	286,693	6,162	292,855	2,746,126
6	Employee Contribution <sup>(4)</sup>									(481,241)	(9,413)	(490,654)	(57,339)	(1,232)	(58,571)	(549,225)
7	Net Cost									1,924,963	37,654	1,962,617	229,354	4,930	234,284	2,196,901
8	Plus: Company Contribution to HSA									161,500	-	161,500	-	-	-	161,500
9	Payments to Employees to Opt out									113,559	3,138	116,696	-	-	-	116,696
10	Total HSA and Opt out Payments									275,059	3,138	278,196	-	-	-	278,196
11	Proformed 2017 Medical and Dental Cost									2,200,022	40,792	2,240,813	229,354	4,930	234,284	2,475,097
12	Projected Increase in Premium Rates Effective January 1, 2018 <sup>(5)</sup>									142,697	2,855	145,552	4,587	99	4,686	150,238
13	Proformed 2017 and 2018 Medical and Dental Cost									2,342,718	43,647	2,386,365	233,941	5,028	238,970	2,625,335
14	Apportionment to Northern at 18.68%									437,620	8,153	445,773	43,700	939	44,640	490,413
15	Amount Chargeable to Capital at 31.64%									(138,463)	(2,580)	(141,043)	(13,827)	(297)	(14,124)	(155,167)
16	Total 2017 and 2018 Proformed Medical and Dental Insurance O&M Expense									299,157	5,574	304,730	29,874	642	30,516	335,246
17	Less 2016 O&M Medical and Dental Expense <sup>(6)</sup>									302,485	5,883	308,368	28,641	614	29,255	337,623
18	2017 and 2018 O&M Medical and Dental Insurance Increase/(Decrease)									\$ (3,328)	\$ (309)	\$ (3,637)	\$ 1,233	\$ 28	\$ 1,261	\$ (2,377)

Notes  
(1) Insurance enrollments as of December 31, 2016.  
(2) Medical Monthly Premiums Effective July 1, 2017.  
(3) Dental Monthly Premiums Effective January 1, 2017  
(4) Employee Contributions: 20%  
(5) Premium Rates are Projected to Increase by 7% for Medical and 2% for Dental Effective January 1, 2018.  
(6) Refer to Workpaper 3.4

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UNITIL SERVICE CORP.  
MEDICAL AND DENTAL INSURANCE  
CALCULATION OF 2016 MEDICAL AND DENTAL EXPENSE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016

Line No.	Coverage	Employee Census <sup>(1)</sup>				2016 Rates				- Cost -						
		- Medical -		- Dental -		- Medical <sup>(2)</sup> -		- Dental <sup>(2)</sup> -		- Medical -		- Dental -		Total	Total	
		CDHP	PPO	Premium	Standard	CDHP	PPO	Premium	Standard	CDHP	PPO	Total Medical	Premium	Standard	Total Dental	Total
1	Individual	81	-	78	1	\$ 632.62	\$ 854.73	\$ 48.12	\$ 46.62	\$ 51,242	\$ -	\$ 51,242	\$ 3,753	\$ 47	\$ 3,800	\$ 55,042
2	Two Person	53	-	61	-	1,131.36	1,590.10	89.63	86.76	59,962	-	59,962	5,467	-	5,467	65,430
3	Family	68	2	90	3	1,555.30	2,214.92	157.14	151.44	105,760	4,430	110,190	14,143	454	14,597	124,787
4	Total	202	2	229	4					216,965	4,430	221,395	23,363	501	23,864	245,259
5	Annual Cost based on Employee Enrollments at December 31, 2016									2,603,576	53,158	2,656,734	280,361	6,011	286,372	2,943,106
6	Employee Contribution <sup>(4)</sup>									(520,715)	(10,632)	(531,347)	(56,072)	(1,202)	(57,274)	(588,621)
7	Net Cost									2,082,861	42,526	2,125,388	224,289	4,809	229,098	2,354,485
8	Plus: Company Contribution to HSA									161,500	-	161,500	-	-	-	161,500
9	Payments to Employees to Opt out									124,418	3,544	127,961	-	-	-	127,961
10	Total HSA and Opt out Payments									285,918	3,544	289,461	-	-	-	289,461
11	Total 2016 Medical & Dental Annual Cost									2,368,779	46,070	2,414,849	224,289	4,809	229,098	2,643,947
12	Apportionment to Northern at 18.68%									442,488	8,606	451,094	41,897	898	42,795	493,889
13	Amount Chargeable to Capital at 31.64%									(140,003)	(2,723)	(142,726)	(13,256)	(284)	(13,540)	(156,267)
14	Total 2016 Medical and Dental Insurance O&M Expense									\$ 302,485	\$ 5,883	\$ 308,368	\$ 28,641	\$ 614	\$ 29,255	\$ 337,623

Notes  
(1) Insurance enrollments as of December 31, 2016.  
(2) Medical and Dental Monthly Premiums Effective January 1, 2016.  
(3) Employee Contributions: 20%

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UNITIL SERVICE CORP.  
MEDICAL AND DENTAL INSURANCE  
FOR THE 12 MONTHS ENDED DECEMBER 31, 2016

Line No.	(1) DESCRIPTION	(2)	(3)	(4)	(5)	(6)	(7)
		2016 MEDICAL	2016 DENTAL	2016 TOTAL	2017 MEDICAL	2017 DENTAL	2017 TOTAL
1	Medical Insurance Only	\$ 3,195,996	\$ -	\$ 3,195,996	\$ 2,800,620	\$ -	\$ 2,800,620
2	Medical Insurance - Emp Contr	(524,579)	-	(524,579)	(563,891)	-	(563,891)
3	Medical Ins - Drug Subsidy	(43,392)	-	(43,392)	(40,656)	-	(40,656)
4	Dental Insurance	-	281,987	281,987	-	300,915	300,915
5	Dental Insurance - Emp Contribution	-	(58,258)	(58,258)	-	(60,027)	(60,027)
6	Total USC Medical Costs	<u>2,628,025</u>	<u>223,729</u>	<u>2,851,753</u>	<u>2,196,073</u>	<u>240,889</u>	<u>2,436,961</u>
7	To Northern Utilities <sup>(1)</sup>	1,061,722	90,386	1,152,108	902,147	98,957	1,001,104
8	To NH Division <sup>(2)</sup>	489,241	41,650	530,892	415,890	45,619	461,509
9	Less Amount Chargeable to Capital <sup>(3)</sup>	<u>(154,796)</u>	<u>(13,178)</u>	<u>(167,974)</u>	<u>(128,926)</u>	<u>(14,142)</u>	<u>(143,068)</u>
10	Northern New Hampshire Expense, net	<u>334,445</u>	<u>28,472</u>	<u>362,917</u>	<u>286,964</u>	<u>31,477</u>	<u>318,441</u>

Notes

- (1) 2016 Northern Utilities Apportionment of 40.40% and 2017 Northern Utilities Apportionment of 41.08%  
(2) 2016 Northern New Hampshire Apportionment of 46.08% and 2017 Northern Utilities Apportionment of 46.10%  
(3) 2016 Capitalization Rate of 31.64% and 2017 Capitalization Rate of 31.00%

000091

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PENSION EXPENSE  
2016 ACTUAL EXPENSE RECORDED AND 2017 FORECAST EXPENSE**

LINE NO.	(1) DESCRIPTION	(2) 2016 TEST YEAR	(3) 2017 EXPENSE	(4) PROFORMA ADJUSTMENT
A1	USC Labor & Overhead Charged to NU-NH	18.51%	18.51%	
A2	NU-NH Capitalization Rates	44.95%	44.95%	
A3	USC Labor & Overhead to Construction	31.18%	31.18%	
A4	Total USC Pension Expense	\$ 2,814,300	\$ 3,013,024	
 <u>Calculation of Pension Expense, net of Amounts Chargeable to Construction</u>				
 <u>A. NU-NH Pension Expense, net:</u>				
1	NU-NH Pension Expense	\$ 444,046	\$ 466,199	\$ 22,153
2	Less: Amounts Chargeable to Construction	(199,599)	(209,556)	(9,958)
3	NU-NH Pension Expense, net	<u>\$ 244,447</u>	<u>\$ 256,643</u>	<u>\$ 12,195</u>
 <u>B. Unitil Service Pension Expense Allocated to NU-NH, net:</u>				
4	Unitil Service Pension Expense	\$ 520,927	\$ 557,711	\$ 36,784
5	Less: Amounts Chargeable to Construction	(162,425)	(173,894)	(11,469)
6	Total Unitil Service Pension Expense Allocated to NU-NH, net	<u>\$ 358,502</u>	<u>\$ 383,817</u>	<u>\$ 25,315</u>
7	Total NU-NH Pension Expense	<u>\$ 602,949</u>	<u>\$ 640,459</u>	<u>\$ 37,510</u>

000092

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PBOP EXPENSE  
2016 ACTUAL EXPENSE RECORDED AND 2017 FORECAST EXPENSE**

LINE NO.	(1) DESCRIPTION	(2) 2016 TEST YEAR	(3) 2017 EXPENSE	(4) PROFORMA ADJUSTMENT
A1	USC Labor & Overhead Charged to NU-NH	18.51%	18.51%	
A2	NU-NH Capitalization Rates	44.95%	44.95%	
A3	USC Labor & Overhead to Construction	31.18%	31.18%	
A4	Total USC PBOP Expense	\$ 2,047,467	\$ 2,830,155	
 <u>Calculation of PBOP Expense, net of Amounts Chargeable to Construction</u>				
 <u>A. NU-NH PBOP Expense, net:</u>				
1	NU-NH PBOP Expense	\$ 641,454	\$ 733,214	\$ 91,760
2	Less: Amounts Chargeable to Construction	(288,334)	(329,580)	(41,246)
3	NU-NH PBOP Expense, net	<u>\$ 353,120</u>	<u>\$ 403,634</u>	<u>\$ 50,514</u>
 <u>B. Unitil Service PBOP Expense Allocated to NU-NH, net:</u>				
4	Unitil Service PBOP Expense	\$ 378,986	\$ 523,862	\$ 144,876
5	Less: Amounts Chargeable to Construction	(118,168)	(163,340)	(45,172)
6	Total Unitil Service PBOP Expense Allocated to NU-NH, net	<u>\$ 260,818</u>	<u>\$ 360,522</u>	<u>\$ 99,703</u>
7	Total NU-NH PBOP Expense	<u><u>\$ 613,939</u></u>	<u><u>\$ 764,156</u></u>	<u><u>\$ 150,217</u></u>

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**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
SERP EXPENSE  
2016 ACTUAL EXPENSE RECORDED AND 2017 FORECAST EXPENSE**

LINE NO.	(1) DESCRIPTION	(2) 2016 TEST YEAR	(3) 2017 EXPENSE	(4) PROFORMA ADJUSTMENT
A1	USC Labor & Overhead Charged to NU-NH	18.51%	18.51%	
A2	NU-NH Capitalization Rates	44.95%	44.95%	
A3	USC Labor & Overhead to Construction	31.18%	31.18%	
A4	Total USC SERP Expense	\$ 1,112,151	\$ 1,336,224	
 <u>Calculation of SERP Expense, net of Amounts Chargeable to Construction</u>				
 <u>A. NU-NH SERP Expense, net:</u>				
1	NU-NH SERP Expense	\$ -	\$ -	\$ -
2	Less: Amounts Chargeable to Construction	-	-	-
3	NU-NH SERP Expense, net	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 <u>B. Unitil Service SERP Expense Allocated to NU-NH, net:</u>				
4	Unitil Service SERP Expense	\$ 205,859	\$ 247,335	\$ 41,476
5	Less: Amounts Chargeable to Construction	(64,187)	(77,119)	(12,932)
6	Total Unitil Service SERP Expense Allocated to NU-NH, net	<u>\$ 141,672</u>	<u>\$ 170,216</u>	<u>\$ 28,544</u>
7	Total NU-NH SERP Expense	<u>\$ 141,672</u>	<u>\$ 170,216</u>	<u>\$ 28,544</u>

000094

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
401(K) EXPENSE  
2016 ACTUAL EXPENSE RECORDED AND 2017 FORECAST EXPENSE

Workpaper 4.4

LINE NO.	(1) DESCRIPTION	(2) 2016 TEST YEAR	(3) 2017 & 2018 FORECAST EXPENSE	(4) PROFORMA ADJUSTMENT
A1	USC Labor & Overhead Charged to NU-NH	18.51%	18.51%	
A2	NU-NH Capitalization Rates	44.95%	44.95%	
A3	USC Labor & Overhead to Construction	31.18%	31.18%	
A4	Total USC 401k Expense <sup>(1)</sup>	\$ 1,429,753	\$ 1,492,519	
<b>Calculation of 401k Expense, net of amounts chargeable to construction</b>				
<b>A. Northern 401k Expense, net:</b>				
1	Northern-401k Expense 2017 Proformed <sup>(2)</sup>	\$ 150,327	\$ 155,047	\$ 4,720
2	NU-NH 401(k) Expense Adjusted for 2018 Wage Increase <sup>(2)</sup>	-	4,868	4,868
3	Total NU-NH 401(k) Expense - Proformed	150,327	159,916	9,589
4	Less: Amounts Chargeable to Construction	(67,572)	(71,882)	(4,310)
5	Northern 401k Expense, net	\$ 82,755	\$ 88,034	\$ 5,279
<b>B. Unitil Service 401k Expense Allocated to Northern, net:</b>				
6	Unitil Service 401k Expense	\$ 264,647	\$ 276,265	\$ 11,618
7	Unitil Service 401(k) Adjusted for 2018 Wage Increase <sup>(1)</sup>	-	12,128	12,128
8	Total USC 401(k) Expense - Proformed	264,647	288,393	23,746
9	Less: Amounts Chargeable to Construction	(82,517)	(89,921)	(7,404)
10	Unitil Service 401k Expense Allocated to Northern, net	182,130	198,472	16,342
11	Total Northern 401k Expense	\$ 264,885	\$ 286,506	\$ 21,621

**Notes**

(1) Unitil Service Corp - Forecasted 2017/2018 Average Payroll Increase of 4.39%

(2) Refer to Workpaper 4.5 for NuNH 2017/2018 Average Payroll Increase

000095

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
401(K) EXPENSE  
2016 ACTUAL EXPENSE RECORDED AND 2017 FORECAST EXPENSE

Workpaper 4.4 REVISED

LINE NO.	(1) DESCRIPTION	(2) 2016 TEST YEAR	(3) 2017 & 2018 FORECAST EXPENSE	(4) PROFORMA ADJUSTMENT
A1	USC Labor & Overhead Charged to NU-NH	18.51%	18.51%	
A2	NU-NH Capitalization Rates	44.95%	44.95%	
A3	USC Labor & Overhead to Construction	31.18%	31.18%	
A4	Total USC 401k Expense <sup>(1)</sup>	\$ 1,429,753	\$ 1,492,519	
<u>Calculation of 401k Expense, net of amounts chargeable to construction</u>				
A. Northern 401k Expense, net:				
1	Northern-401k Expense 2017 Proformed <sup>(2)</sup>	\$ 150,327	\$ 155,047	\$ 4,720
2	NU-NH 401(k) Expense Adjusted for 2018 Wage Increase <sup>(2)</sup>	-	-	-
3	Total NU-NH 401(k) Expense - Proformed	150,327	155,047	4,720
4	Less: Amounts Chargeable to Construction	(67,572)	(69,694)	(2,122)
5	Northern 401k Expense, net	\$ 82,755	\$ 85,353	\$ 2,599
B. Unitil Service 401k Expense Allocated to Northern, net:				
6	Unitil Service 401k Expense	\$ 264,647	\$ 276,265	\$ 11,618
7	Unitil Service 401(k) Adjusted for 2018 Wage Increase <sup>(1)</sup>	-	-	-
8	Total USC 401(k) Expense - Proformed	264,647	276,265	11,618
9	Less: Amounts Chargeable to Construction	(82,517)	(86,140)	(3,622)
10	Unitil Service 401k Expense Allocated to Northern, net	182,130	190,126	7,996
11	Total Northern 401k Expense	\$ 264,885	\$ 275,479	\$ 10,594

Notes

(1) Unitil Service Corp - 2017 Average Payroll Increase of 4.39%. 2018 Average Payroll Increase removed.

(2) Refer to Workpaper 4.5 REVISED for NuNH2017/2018 Average Payroll Increase

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**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
401K ADJUSTMENT  
2017 WEIGHTED AVERAGE PAY INCREASE**

	(1)	(2)	(3)	(4)
<b>LINE NO.</b>	<b>DESCRIPTION</b>	<b>2016 ANNUALIZED PAYROLL</b>	<b>2017 AVERAGE PAY INCREASE(1)</b>	<b>WEIGHTED AVERAGE INCREASE</b>
1	Nonunion	\$ 878,354	3.63%	0.82%
2	Union	2,987,355	3.00%	2.32%
3	<b>Total</b>	<b>\$ 3,865,710</b>		<b>3.14%</b>

**Notes**

(1) Refer to Schedule RevReq-3-7, Page 1 of 2 for 2017 Payroll Increase

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
401K ADJUSTMENT  
2017 & 2018 WEIGHTED AVERAGE PAY INCREASE

LINE NO.	(1) DESCRIPTION	(2) 2016 ANNUALIZED PAYROLL	(3) 2017 AVERAGE PAY INCREASE <sup>(1)</sup>	(4) WEIGHTED AVERAGE INCREASE	(5) 2018 AVERAGE PAY INCREASE <sup>(2)</sup>	(6) WEIGHTED AVERAGE INCREASE
1	Nonunion	\$ 878,354	3.63%	0.82%	0.00%	0.00%
2	Union	2,987,355	3.00%	2.32%	0.00%	0.00%
3	Total	<u>\$ 3,865,710</u>		<u>3.14%</u>		<u>0.00%</u>

Notes

(1) Refer to Schedule RevReq-3-7, Page 1 of 2 for 2017 Payroll Increase

(2) 2018 Payroll Increase Removed for Settlement Purposes

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY AND LIABILITY INSURANCES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	DESCRIPTION	AMOUNT <sup>(1)</sup>
	Current Coverage Periods	
	Property:	
1	All Risk	\$ 10,581
2	Crime	1,464
3	K&E	255
4	Total Property	<u>\$ 12,300</u>
	Liability:	
5	Workers' Compensation	\$ 111,303
6	Excess	275,826
7	Cyber	8,482
8	Automobile	28,700
9	Directors & Officers	42,788
10	Fiduciary	3,337
11	Total Liability	<u>\$ 470,437</u>
12	Total Property & Liability Insurances (Lines 5 Plus 11)	482,736
13	Less: Amounts Chargeable to Capital	<u>221,272</u>
14	Amount to O&M Expense	261,464
15	Less Test Year O&M Expense	<u>230,933</u>
16	O&M Property and Liability Insurance Increase	<u><u>\$ 30,531</u></u>

Notes

(1) Refer to Workpaper 5.3

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY AND LIABILITY INSURANCES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

**Workpaper 5.1 REVISED**

<b>LINE NO.</b>	<b>DESCRIPTION</b>	<b>AMOUNT <sup>(1)</sup></b>
	<b>Current Coverage Periods</b>	
	<b>Property:</b>	
1	All Risk	\$ 10,581
2	Crime	1,464
3	K&E	255
4	Total Property	<u>\$ 12,300</u>
	<b>Liability:</b>	
5	Workers' Compensation	\$ 100,976
6	Excess	250,232
7	Cyber	8,482
8	Automobile	26,037
9	Directors & Officers	42,788
10	Fiduciary	3,337
11	Total Liability	<u>\$ 431,853</u>
12	Total Property & Liability Insurances (Lines 5 Plus 11)	444,152
13	Less: Amounts Chargeable to Capital	<u>203,604</u>
14	Amount to O&M Expense	240,548
15	Less Test Year O&M Expense	<u>230,933</u>
16	O&M Property and Liability Insurance Increase	<u><u>\$ 9,615</u></u>

**Notes**

(1) Refer to Workpaper 5.3 REVISED

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY AND LIABILITY INSURANCES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	DESCRIPTION	UNITIL SERVICE CORP. TOTAL <sup>(1)</sup>	AMOUNT TO NuNH <sup>(2)</sup>	NuNH TOTAL
	<b>USC Cost For Current Coverage Periods</b>			
	<b>Property:</b>			
1	All Risk	\$ 6,506		\$ 1,204
2	Crime	690		128
3	K&E	116		21
4	Total Property	\$ 7,311	18.51%	\$ 1,353
	<b>Liability:</b>			
5	Workers' Compensation	\$ 118,266		\$ 21,891
6	Excess	125,188		23,172
7	Cyber	3,843		711
8	Automobile	6,186		1,145
9	Directors and Officers	20,171		3,734
10	Fiduciary	1,512		280
11	Total Liability	\$ 275,166	18.51%	\$ 50,933
12	Total USC Property & Liability Insurances			52,287
13	Less Amount Chargeable to Capital		31.18%	16,303
14	Total Property & Liability Insurances to O&M Expense			35,984
15	Less Test Year O&M Expense <sup>(3)</sup>			18,080
16	O&M Property and Liability Insurance Increase			\$ 17,904

Notes

(1) Refer to Workpaper 5.3

(2) Refer to Workpaper 4.1

(2) Refer to Workpaper 5.4

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PROPERTY AND LIABILITY INSURANCES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	DESCRIPTION	UNITIL SERVICE CORP. TOTAL <sup>(1)</sup>	AMOUNT TO NuNH <sup>(2)</sup>	NuNH TOTAL
	<b>USC Cost For Current Coverage Periods</b>			
	<b>Property:</b>			
1	All Risk	\$ 6,506		\$ 1,204
2	Crime	690		128
3	K&E	116		21
4	Total Property	\$ 7,311	18.51%	\$ 1,353
	<b>Liability:</b>			
5	Workers' Compensation	\$ 111,442		\$ 20,628
6	Excess	117,964		21,835
7	Cyber	3,843		711
8	Automobile	5,829		1,079
9	Directors and Officers	20,171		3,734
10	Fiduciary	1,512		280
11	Total Liability	\$ 260,761	18.51%	\$ 48,267
12	Total USC Property & Liability Insurances			49,620
13	Less Amount Chargeable to Capital		31.18%	15,472
14	Total Property & Liability Insurances to O&M Expense			34,149
15	Less Test Year O&M Expense <sup>(3)</sup>			18,080
16	O&M Property and Liability Insurance Increase			\$ 16,069

Notes

(1) Refer to Workpaper 5.3 REVISED

(2) Refer to Workpaper 4.1

(2) Refer to Workpaper 5.4

Casualty & Property Insurance

Workpaper 5.3

		CASUALTY										PROPERTY					
		AL (prem)	NH-WC (prem)	XL* (prem)	XL (brkr)	XL Surplus Tax	Cyber (prem)	FL (prem)	D&O (prem)	D&O Surplus Tax	D&O (brkr)	CASUALTY TOTAL	ARP (prem)	CRIME (prem)	K&E (prem)	TOTAL PROP	TOTAL
NuNH	2012a	25,652	92,755	133,867	3,443			3,032	29,203		2,695	290,646	11,766	1,090	205	13,060	303,707
	2013a	28,098	117,913	155,666	3,784			3,217	30,759		2,952	342,389	10,492	1,102	213	11,808	354,197
	2014a	22,559	109,161	187,186	4,010			2,767	40,602	1,218	3,857	371,360	9,463	1,252	213	10,928	382,288
	2015a	28,604	105,017	216,300	7,008	6,489		3,022	43,720	1,312	4,214	415,685	9,972	1,368	213	11,552	427,237
	2016a	35,800	107,833	232,541	7,244	6,976		3,124	38,118	1,144	4,356	437,136	9,516	1,446	255	11,217	448,353
	2017a	26,037	100,976	235,826	7,331	7,075	8,482	3,337	37,262	1,118	4,408	431,853	10,581	1,464	255	12,300	444,152
	2018e <sup>(1)</sup>	28,700	111,303	259,946	8,081	7,798						470,437				12,300	482,736
USC	2012a	3,497	110,257	73,542	1,892			1,665	16,043		1,480	208,377	7,008	599	110	7,717	216,094
	2013a	2,284	123,474	82,765	2,012			1,710	16,354		1,569	230,169	7,678	586	113	8,377	238,547
	2014a	2,833	115,882	82,972	1,777			1,226	17,997	540	1,710	224,937	5,231	555	113	5,899	230,836
	2015a	2,868	124,070	95,326	3,089	2,860		1,332	19,268	578	1,857	251,248	6,012	603	113	6,729	257,977
	2016a	4,348	129,736	105,367	3,283	3,161		1,416	17,272	518	1,974	267,073	6,247	655	116	7,018	274,091
	2017a	5,829	111,442	111,173	3,456	3,335	3,843	1,512	17,566	527	2,078	260,761	6,506	690	116	7,311	268,072
	2018e <sup>(1)</sup>	6,186	118,266	117,981	3,668	3,539						275,166				7,311	282,478

**Notes**

(1) 2018 premiums reflect annual growth rate from 2012 to 2016 for UES and USC automobile, workers compensation and excess liability  
2018 premiums for these three categories above will be updated with actuals while all other categories assume 2017 premium amounts

000103

Casualty & Property Insurance

Workpaper 5.3 REVISED

		CASUALTY										PROPERTY					
		AL (prem)	NH-WC (prem)	XL* (prem)	XL (brkr)	XL Surplus Tax	Cyber (prem)	FL (prem)	D&O (prem)	D&O Surplus Tax	D&O (brkr)	CASUALTY TOTAL	ARP (prem)	CRIME (prem)	K&E (prem)	TOTAL PROP	TOTAL
NuNH	2012a	25,652	92,755	133,867	3,443			3,032	29,203		2,695	290,646	11,766	1,090	205	13,060	303,707
	2013a	28,098	117,913	155,666	3,784			3,217	30,759		2,952	342,389	10,492	1,102	213	11,808	354,197
	2014a	22,559	109,161	187,186	4,010			2,767	40,602	1,218	3,857	371,360	9,463	1,252	213	10,928	382,288
	2015a	28,604	105,017	216,300	7,008	6,489		3,022	43,720	1,312	4,214	415,685	9,972	1,368	213	11,552	427,237
	2016a	35,800	107,833	232,541	7,244	6,976		3,124	38,118	1,144	4,356	437,136	9,516	1,446	255	11,217	448,353
	2017a	26,037	100,976	235,826	7,331	7,075	8,482	3,337	37,262	1,118	4,408	431,853	10,581	1,464	255	12,300	444,152
	2018a	26,696	90,284	239,335	7,351	7,180						425,454				12,300	437,753
USC	2012a	3,497	110,257	73,542	1,892			1,665	16,043		1,480	208,377	7,008	599	110	7,717	216,094
	2013a	2,284	123,474	82,765	2,012			1,710	16,354		1,569	230,169	7,678	586	113	8,377	238,547
	2014a	2,833	115,882	82,972	1,777			1,226	17,997	540	1,710	224,937	5,231	555	113	5,899	230,836
	2015a	2,868	124,070	95,326	3,089	2,860		1,332	19,268	578	1,857	251,248	6,012	603	113	6,729	257,977
	2016a	4,348	129,736	105,367	3,283	3,161		1,416	17,272	518	1,974	267,073	6,247	655	116	7,018	274,091
	2017a	5,829	111,442	111,173	3,456	3,335	3,843	1,512	17,566	527	2,078	260,761	6,506	690	116	7,311	268,072
	2018a	5,933	97,653	123,302	3,787	3,699						259,901				7,311	267,213

000104

**UNITIL SERVICE CORP.  
PROPERTY & LIABILITY INSURANCE TEST YEAR COSTS  
12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	DESCRIPTION	TOTAL
	USC O&M Test Year	
1	12-30-08-00-9240100 PROPERTY INSURANCE	\$ 6,824
2	12-30-08-00-9250100 INJURIES & DAMAGES	135,105
3	Total	<u>\$ 141,929</u>
4	NuNH Apportionment <sup>(1)</sup>	<u>18.51%</u>
5	NuNH Amount	\$ 26,271
6	Capitalization Rate <sup>(1)</sup>	<u>31.18%</u>
7	Capitalization Amount	\$ 8,191
8	O&M Expense Amount	<u><u>18,080</u></u>

**Notes**

**(1) Refer to Workpaper 4.1**

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
INFLATION ALLOWANCE  
12 MONTHS ENDED DECEMBER 31, 2016

Source: Energy Information Administration  
Short-Term Energy Outlook  
Publication Date: March 7, 2017

Table 1. U.S. Energy Markets Summary

	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Macroeconomic</b>																								
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,238	16,268	16,301	16,343	16,375	16,405	16,435	16,457	16,473	16,479	16,491	16,502	16,510	16,524	16,541	16,551	16,580	16,618	16,689	16,729	16,763	16,789	16,807	16,818
Percent change from prior year	3.2	3.4	3.4	3.2	3	2.8	2.4	2.2	2.1	2	1.9	1.8	1.7	1.6	1.5	1.3	1.3	1.3	1.5	1.7	1.8	1.9	1.9	1.9
GDP Implicit Price Deflator (Index, 2005=100)	109.2	109.3	109.4	109.8	109.9	110.1	110.2	110.3	110.4	110.4	110.5	110.6	110.5	110.6	110.8	111.1	111.3	111.4	111.5	111.7	111.8	112.0	112.2	112.5
Percent change from prior year	1.2	1.1	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.6	1.7
Real Disposable Personal Income (billion chained 2005 dollars - SAAR)	12,171	12,191	12,187	12,260	12,304	12,335	12,366	12,403	12,428	12,462	12,477	12,534	12,546	12,546	12,576	12,618	12,647	12,677	12,718	12,727	12,743	12,771	12,772	12,791
Percent change from prior year	4.4	4.0	3.3	3.7	3.6	3.4	3.4	3.3	3.3	3.2	2.9	3.0	3.1	2.9	3.2	2.9	2.8	2.8	2.8	2.6	2.5	2.5	2.4	2.1
Manufacturing Production Index (Index, 2012=100)	103.5	103.0	103.2	103.4	103.5	103.3	104.0	103.9	103.7	103.9	103.6	103.6	104.1	104.0	103.6	103.7	103.5	103.8	104.0	103.5	103.7	104.0	103.9	104.0
Percent change from prior year	3.3	1.8	1.3	1.5	1.2	0.6	0.9	1.2	0.8	0.9	-0.3	-0.2	0.6	0.9	0.4	0.2	0	0.5	0.1	-0.4	0	0.1	0.2	0.4
<b>Weather</b>																								
U.S. Heating Degree-Days	890	867	584	300	119	24	6	11	32	227	445	581	870	628	449	309	150	21	6	6	39	197	418	783
U.S. Cooling Degree-Days	9	7	29	53	126	255	336	316	223	77	30	26	7	11	35	43	97	270	383	362	220	87	26	17
	2017												2018											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Macroeconomic</b>																								
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,859	16,887	16,916	16,942	16,975	17,010	17,054	17,090	17,125	17,155	17,190	17,226	17,266	17,304	17,341	17,377	17,415	17,454	17,496	17,534	17,570	17,603	17,639	17,675
Percent change from prior year	2.1	2.2	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
GDP Implicit Price Deflator (Index, 2005=100)	112.8	113.0	113.2	113.3	113.5	113.7	113.9	114.1	114.3	114.5	114.7	114.9	115.2	115.4	115.6	115.7	115.9	116.1	116.3	116.5	116.7	116.9	117.1	117.3
Percent change from prior year	2.1	2.2	2.2	2	2	2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2
Real Disposable Personal Income (billion chained 2005 dollars - SAAR)	12,812	12,838	12,871	12,920	12,956	12,990	13,020	13,052	13,084	13,099	13,142	13,197	13,292	13,350	13,399	13,429	13,467	13,504	13,538	13,572	13,606	13,633	13,669	13,710
Percent change from prior year	2.1	2.3	2.3	2.4	2.4	2.5	2.4	2.6	2.7	2.6	2.9	3.2	3.8	4	4.1	3.9	3.9	4	4	4	4	4.1	4	3.9
Manufacturing Production Index (Index, 2012=100)	104.1	104.1	104.2	104.3	104.4	104.6	104.9	105.2	105.5	105.8	106.1	106.4	106.6	106.8	107.0	107.2	107.4	107.7	108.0	108.3	108.5	108.8	109.0	109.2
Percent change from prior year	0	0.1	0.6	0.6	0.9	0.8	0.9	1.6	1.7	1.8	2.2	2.2	2.4	2.5	2.7	2.8	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.7
<b>Weather</b>																								
U.S. Heating Degree-Days	766	524	538	295	128	27	5	9	54	243	485	767	845	683	557	307	138	27	5	9	54	243	484	766
U.S. Cooling Degree-Days	16	17	23	44	127	247	356	331	183	66	20	10	10	10	21	40	118	248	357	332	184	67	21	10

Notes: Prices are not adjusted for inflation.

The approximate break between historical and forecast values is shown with estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: Petroleum Supply Monthly , DOE/EIA-0109;

Petroleum Supply Annual , DOE/EIA-0340/2; Weekly Petroleum Status Report , DOE/EIA-0208; Petroleum Marketing Monthly , DOE/EIA-0380; Natural Gas Monthly , DOE/EIA-0130;

Electric Power Monthly , DOE/EIA-0226; Quarterly Coal Report , DOE/EIA-0121; and International Petroleum Monthly , DOE/EIA-0520.

Minor discrepancies with published historical data are due to independent rounding.

Projections: EIA Regional Short-Term Energy Model. Macroeconomic projections are based on Global Insight Model of the U.S. Economy.

Weather projections from National Oceanic and Atmospheric Administration.

000106

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
INFLATION ADJUSTMENT - TEST YEAR USC AMORTIZATIONS  
12 MONTHS ENDED DECEMBER 31, 2016**

**Workpaper 6.2**

LINE NO.	(1) DESCRIPTION	(2) 2016
1	12-30-10-00-4040500 FLEXI AMORTIZATION	\$ 7,428
2	12-30-10-00-4040400 FINANCIAL REPORT WRITER AMORTIZATION	44,097
3	12-30-10-00-4040300 SOFTWARE AMORTIZATION - OTHER	1,883
4	12-30-10-00-4042400 DATA PRIVACY AMORT	4,014
5	12-30-10-00-4042500 AMORTIZATION - PAYMENT SYSTEM	8,043
6	Total	\$ 65,465
7	NuNH Allocation <sup>(1)</sup>	18.51%
8	Amount Billed to NuNH	12,118

**Notes**

(1) Refer to Workpaper 4.1

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
INFLATION ADJUSTMENT - TEST YEAR FACILITY LEASES  
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1)	(2)
	DESCRIPTION	2016
1	12-30-08-00-9310100 BUILDING RENT	\$ 1,646,308
2	12-30-08-00-9310700 CALL CENTER RENT	140,068
3	12-30-08-00-9310800 PORTSMOUTH RENT EXPENSE	149,124
4	Total	\$ 1,935,500
5	NuNH Allocation <sup>(1)</sup>	18.51%
6	Amount Billed to NuNH	358,261

Notes

(1) Refer to Workpaper 4.1

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL TAXES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)	(5)	(6)
LINE NO.	2016 TAXABLE WAGES SUBJECT TO PAY INCREASE <sup>(1)</sup>	2017 INCREASE 3.63%	2018 INCREASE 3.63%	TOTAL PROFORMED INCREASES	TOTAL PROFORMED WAGES	WAGE INCREASE LIMIT
1	\$ 395,004	\$ 14,339	\$ 14,859	\$ 29,198	\$ 424,201	\$ 17,859
2	Capitalized at 48.00%					<u>(8,572)</u>
3	Pay Increase to O&M Not Subject to SS tax - Above 2017 Annual Limit of \$127,200					<u>\$ 9,287</u>

**Notes**

**(1) Northern Utilities - NH Division Employee Whose Pay Exceeds the Wage Limit of \$127,200 Subject to Social Security Tax**

000109

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE  
PAYROLL TAXES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)	(5)	(6)
<b>LINE NO.</b>	<b>2016 TAXABLE WAGES SUBJECT TO PAY INCREASE<sup>(1)</sup></b>	<b>2017 INCREASE 3.63%</b>	<b>2018 INCREASE 0.00%</b>	<b>TOTAL PROFORMED INCREASES</b>	<b>TOTAL PROFORMED WAGES</b>	<b>WAGE INCREASE LIMIT</b>
1	\$ 151,942	\$ 5,515	\$ -	\$ 5,515	\$ 157,457	\$ 5,515
2	Capitalized at 48.00%					<u>(2,647)</u>
3	Pay Increase to O&M Not Subject to SS tax - Above 2017 Annual Limit of \$127,200					<u><u>\$ 2,868</u></u>

**Notes**

**(1) Northern Utilities - NH Division Employee Whose Pay Exceeds the Wage Limit of \$127,200 Subject to Social Security Tax**

000110

**UNITIL SERVICE CORP.  
PAYROLL TAXES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)	(5)
LINE NO.	2016 TAXABLE WAGES SUBJECT TO PAY INCREASE <sup>(1)</sup>	2017 PAY INCREASE 4.39%	2018 PAY INCREASE 4.39%	TOTAL PAY INCREASES	PAYROLL INCREASE EXCLUSION
1	\$ 10,413,740	\$ 457,163	\$ 477,233	\$ 934,396	\$ 903,559
2	To Northern Utilities at 40.40% <sup>(2)</sup>				<u>365,038</u>
3	To NH Division at 46.23% <sup>(2)</sup>				168,757
4	Less Amount Chargeable to Capital at 30.53% <sup>(2)</sup>				<u>(51,522)</u>
5	Pay Increase to O&M Not Subject to SS Tax Above 2017 Annual Limit of \$127,200				<u><u>\$ 117,236</u></u>

**Notes**

(1) For 51 Employees Subject to Social Security Maximum

(2) Test Year Actual Data

000111

**Workpaper 7.2 REVISED**

**UNITIL SERVICE CORP.  
PAYROLL TAXES ADJUSTMENT  
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)	(5)
<b>LINE NO.</b>	<b>2016 TAXABLE WAGES SUBJECT TO PAY INCREASE<sup>(1)</sup></b>	<b>2017 PAY INCREASE 4.39%</b>	<b>2018 PAY INCREASE 0.00%</b>	<b>TOTAL PAY INCREASES</b>	<b>PAYROLL INCREASE EXCLUSION</b>
1	\$ 10,170,994	\$ 446,507	\$ -	\$ 446,507	\$ 427,325
2	To Northern Utilities at 40.40% <sup>(2)</sup>				172,639
3	To NH Division at 46.23% <sup>(2)</sup>				79,811
4	Less Amount Chargeable to Capital at 30.53% <sup>(2)</sup>				(24,366)
5	Pay Increase to O&M Not Subject to SS Tax Above 2017 Annual Limit of \$127,200				\$ 55,445

**Notes**

**(1) For 49 Employees Subject to Social Security Maximum**

**(2) Test Year Actual Data**

000112

NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN  
 SETTLEMENT

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
		Annual	Existing	Weather Normalized Sales			Existing Blocking		Winter Blocks		Summer Blocks	
		Customers	Customer	Winter	Summer	Total	Winter	Summer	First	Second	First	Second
	(excl Special Contract)		Charges	(Therms)	(Therms)	Therms	Therms	Therms	Therms	Therms	Therms	Therms
7 R-5 Residential, Heating		270,640	\$21.36	13,629,443	3,024,302	16,653,745	50	50	5,789,680	7,839,764	2,642,288	382,014
8 R-10 Residential Heating, Low Income		12,052	\$21.36	550,183	117,000	667,183	50	50	267,004	283,179	108,201	8,800
9 Total Heating		282,692		14,179,626	3,141,302	17,320,928			6,056,684	8,122,942	2,750,488	390,814
				81.86%	18.14%	100.00%			42.71%	57.29%	87.56%	12.44%
12 R-6 Residential, Non-Heating		16,602	\$21.36	149,417	89,014	238,432	10	10	54,848	94,570	55,551	33,463
13 R-11 Residential Non-Heating, Low Income		48	\$21.36	258	384	641	10	10	168	90	253	131
14 Total Non-Heating		16,650		149,675	89,398	239,073			55,015	94,660	55,804	33,594
				62.61%	37.39%	100.00%			36.76%	63.24%	62.42%	37.58%
17 G-40/T-40 Low Annual, High Winter Use		58,925	\$67.45	8,032,954	1,305,858	9,338,812	75	75	1,839,901	6,193,053	729,110	576,749
				86.02%	13.98%	100.00%			22.90%	77.10%	55.83%	44.17%
19 G-50/T-50 Low Annual, Low Winter Use		9,708	\$67.45	915,888	764,917	1,680,805	75	75	218,399	697,489	219,197	545,720
				54.49%	45.51%	100.00%			23.85%	76.15%	28.66%	71.34%
21 Total Low Annual Use		68,633		8,948,841	2,070,775	11,019,617			2,058,299	6,890,542	948,307	1,122,468
24 G-41/T-41 Medium Annual, High Winter Use		8,266	\$196.73	10,640,539	2,508,973	13,149,512			10,640,539		2,508,973	
				80.92%	19.08%	100.00%			100.00%		100.00%	
26 G-51/T-51 Medium Annual, Low Winter Use		3,103	\$196.73	2,611,047	1,871,201	4,482,248	1,300	1,000	1,631,320	979,727	1,234,616	636,585
				58.25%	41.75%	100.00%			62.48%	37.52%	65.98%	34.02%
28 Total Medium Annual Use		11,368		13,251,586	4,380,174	17,631,760			12,271,859	979,727	3,743,590	636,585
31 G-42/T-42 High Annual, High Winter Use		450	\$1,124.19	5,047,220	1,710,865	6,758,085			5,047,220		1,710,865	
				74.68%	25.32%	100.00%			100.00%		100.00%	
33 G-52/T-52 High Annual, Low Winter Use		386	\$1,124.19	9,238,799	7,699,964	16,938,763			9,238,799		7,699,964	
				54.54%	45.46%	100.00%			100.00%		100.00%	
35 Total Large Annual Use		836		14,286,019	9,410,829	23,696,848			14,286,019		9,410,829	
38 Total		380,179		50,815,747	19,092,478	69,908,226			34,727,877	16,087,870	16,909,018	2,183,460
				72.69%	27.31%	100.00%			68.34%	31.66%	88.56%	11.44%

Notes: Therm Percentage Seasonal to Annual Total Therm Block Percentages to Seasonal Total  
 Annual Customr, Existing Customer Charges, Therm Rate Charges, and Weather Normalized Therms are included in the Rate Design Workpapers

**NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN**

**SETTLEMENT**

	(A)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)	(W)	
							Marginal Cost of Service Results						
	Existing Dist Charges Per Therm				Existing	Existing	Existing	Equalized	Revenue	Percent	Proposed		
	Winter		Summer		Cust Charge	Revenues	ROR	ROR	Increase	Increase	Increases		
	First	Second	First	Second	Revenues	Revenues	7.59% Rev Reg	to Equalize	Equal ROR	Capped @			
												3.19%	
1													
2													
3	<b>CURRENT RATES</b>												
4	(excl Special Contract)												
5													
6													
7	R-5 Residential, Heating	\$0.6239	\$0.5103	\$0.5449	\$0.5449	\$5,780,863	\$15,041,618						
8	R-10 Residential Heating, Low Income	\$0.6239	\$0.5103	\$0.5449	\$0.5449	\$257,439	\$632,282						
9	Total Heating	\$0.6239	\$0.5103	\$0.5449	\$0.5449	\$6,038,302	\$15,673,900	5.33%	\$16,630,697	\$956,797	6.10%	\$499,752	
10													
11													
12	R-6 Residential, Non-Heating	\$0.4214	\$0.4214	\$0.4214	\$0.4214	\$354,628	\$455,103						
13	R-11 Residential Non-Heating, Low Income	\$0.4214	\$0.4214	\$0.4214	\$0.4214	\$1,022	\$1,293						
14	Total Non-Heating	\$0.4214	\$0.4214	\$0.4214	\$0.4214	\$355,651	\$456,396	-3.16%	\$696,512	\$240,116	52.61%	\$14,552	
15													
16													
17	G-40/T-40 Low Annual, High Winter Use	\$0.1615	\$0.1615	\$0.1615	\$0.1615	\$3,974,496	\$5,482,714	7.65%	\$5,457,817	(\$24,897)	-0.45%	\$174,813	
18													
19	G-50/T-50 Low Annual, Low Winter Use	\$0.1615	\$0.1615	\$0.1615	\$0.1615	\$654,774	\$926,224	9.42%	\$688,127	(\$238,097)	-25.71%	\$29,532	
20													
21	Total Low Annual Use						\$6,408,938		\$6,145,944	(\$262,994)		\$204,345	
22													
23													
24	G-41/T-41 Medium Annual, High Winter Use	\$0.2098		\$0.1622		\$1,626,074	\$4,265,414	8.36%	\$4,641,440	\$376,026	8.82%	\$136,000	
25													
26	G-51/T-51 Medium Annual, Low Winter Use	\$0.1520	\$0.1238	\$0.1183	\$0.0958	\$610,423	\$1,186,714	7.03%	\$987,106	(\$199,609)	-16.82%	\$37,838	
27													
28	Total Medium Annual Use						\$5,452,129		5,628,546	\$176,417		\$173,837	
29													
30													
31	G-42/T-42 High Annual, High Winter Use	\$0.1764		\$0.1066		\$506,035	\$1,578,743	8.22%	\$1,693,586	\$114,843	7.27%	\$50,337	
32													
33	G-52/T-52 High Annual, Low Winter Use	\$0.1541		\$0.0707		\$433,375	\$2,401,462	5.89%	\$1,991,795	(\$409,666)	-17.06%	\$76,569	
34													
35	Total Large Annual Use						\$3,980,205		\$3,685,381	(\$294,824)		\$126,906	
36													
37													
38	Total						\$14,199,130	\$31,971,567	6.39%	\$32,787,080	\$815,513	2.55%	\$1,019,392
39													
40													
41													
42													
43													
44													
45													

Notes:  
 (1) Column (R) includes a weather adjustment - see Workpapers  
 (2) Column (S) Page 3 of 8, Column (AE)

NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN

SETTLEMENT

	(A)	(X)	(Y)	(Z)	(AA)	(AB)	(AC)	(AD)	(AE)	(AF)	(AG)
1						Initial	Final	Embedded COS Results			
2		Shortfall \$	Class	Class %	Target Rev	Base	Base	Using Marginal Revenues			
3	<b>CURRENT RATES</b>	Allocation	Increase	Increase to	Req for Class	Percent	Percent	Proposed	Existing		
4	(excl Special Contract)	<u>To Equal ROR</u>	<u>Increase</u>	<u>Total Dollars</u>		<u>Increase</u>	<u>Increase</u>	<u>Rate of Returns</u>			
5											
6											
7	R-5	Residential, Heating									
8	R-10	Residential Heating, Low Income									
9		Total Heating	\$499,752	61.28%	\$16,173,651	3.19%	3.19%	5.98%	5.33%		
10											
11											
12	R-6	Residential, Non-Heating									
13	R-11	Residential Non-Heating, Low Income									
14		Total Non-Heating	\$14,552	1.78%	\$470,948	3.19%	3.19%	-2.83%	-3.16%		
15											
16											
17	G-40/T-40	Low Annual, High Winter Use	(\$121,945)	\$52,867	6.48%	\$5,535,582	0.96%		8.07%	7.65%	
18											
19	G-50/T-50	Low Annual, Low Winter Use	(\$15,375)	\$14,157	1.74%	\$940,381	1.53%		9.54%	9.42%	
20											
21		Total Low Annual Use		\$67,025	8.22%	\$6,475,962		1.05%			
22											
23											
24	G-41/T-41	Medium Annual, High Winter Use		\$136,000	16.68%	\$4,401,414	3.19%		9.04%	8.36%	
25											
26	G-51/T-51	Medium Annual, Low Winter Use	(\$22,055)	\$15,782	1.94%	\$1,202,497	1.33%		7.20%	7.03%	
27											
28		Total Medium Annual Use		\$151,782	18.61%	\$5,603,911		2.78%			
29											
30											
31	G-42/T-42	High Annual, High Winter Use		\$50,337	6.17%	\$1,629,080	3.19%		8.72%	8.22%	
32											
33	G-52/T-52	High Annual, Low Winter Use	(\$44,503)	\$32,066	3.93%	\$2,433,528	1.34%		6.04%	5.89%	
34											
35		Total Large Annual Use		\$82,403	10.10%	\$4,062,608		2.07%			
36											
37											
38		Total	(\$203,878)	\$815,513	100.00%	\$32,787,080	2.55%	2.55%	6.90%	6.39%	

\$815,513

Notes:

- (1) Column (Y) = Page 2 of 8 Columns (W) + Page 3 of 8 Column (X)
- (2) Column (AA) = Page 2 of 8 Column (R) + Page 3 of 8 Column (Y)
- (3) Column (AB) = Page 3 of 8 Column (Y) / Page 2 of 8 Column (R)
- (4) Column (AC) Page 6 of 8 Column (AE)
- (5) Column (AD) Schedule DLG/PMN-1G-3, Pages 43 and 44, Line 19
- (6) Column (AE) Schedule DLG/PMN-1G-2, Pages 1 and 2, Line 22

\$ 938,730 Revenue Deficiency
\$815,513 To Base Rates
\$ 123,217 To Cost of Gas

NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN  
 SETTLEMENT

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
	Marginal Cost Study											
48	CURRENT & PROPOSED RATES											
49	(excl Special Contract)											
50	Annual	Existing	@ Company	Proposed	Proposed	Existing Dist Charges Per Therm				Existing		
51	Customers <sup>(1)</sup>	Customer	ROR	Customer	Cust Chg	Winter		Summer		Block Differential		
52		Charge	Cust \$ <sup>(2)</sup>	Charges	Increase	First	Second	First	Second	Winter	Summer	
53 R-5	Residential, Heating	270,640	\$21.36		\$21.36	0.00%	\$0.6239	\$0.5103	\$0.5449	\$0.5449	\$0.1136	\$0.0000
54 R-10	Residential Heating, Low Income	12,052	\$21.36		\$21.36	0.00%	\$0.6239	\$0.5103	\$0.5449	\$0.5449	\$0.1136	\$0.0000
55	Total Heating	282,692		\$47.23	\$21.36		\$0.6239	\$0.5103	\$0.5449	\$0.5449		
56												
57												
58 R-6	Residential, Non-Heating	16,602	\$21.36		\$21.36	0.00%	\$0.4214	\$0.4214	\$0.4214	\$0.4214	\$0.0000	\$0.0000
59 R-11	Residential Non-Heating, Low Income	48	\$21.36		\$21.36	0.00%	\$0.4214	\$0.4214	\$0.4214	\$0.4214	\$0.0000	\$0.0000
60	Total Non-Heating	16,650		\$45.22	\$21.36		\$0.4214	\$0.4214	\$0.4214	\$0.4214		
61							67.54%					
62												
63 G-40/T-40	Low Annual, High Winter Use	58,925	\$67.45	\$56.51	\$67.45	0.00%	\$0.1615	\$0.1615	\$0.1615	\$0.1615	\$0.0000	\$0.0000
64												
65 G-50/T-50	Low Annual, Low Winter Use	9,708	\$67.45	\$55.56	\$67.45	0.00%	\$0.1615	\$0.1615	\$0.1615	\$0.1615	\$0.0000	\$0.0000
66												
67	Total Low Annual Use	68,633										
68												
69												
70 G-41/T-41	Medium Annual, High Winter Use	8,266	\$196.73	\$134.14	\$200.00	1.66%	\$0.2098		\$0.1622		W/S DIFF \$0.0476	
71												
72 G-51/T-51	Medium Annual, Low Winter Use	3,103	\$196.73	\$124.65	\$200.00	1.66%	\$0.1520	\$0.1238	\$0.1183	\$0.0958	\$0.0282	\$0.0225
73												
74	Total Medium Annual Use	11,368										
75												
76												
77 G-42/T-42	High Annual, High Winter Use	450	\$1,124.19	\$317.67	\$1,200.00	6.74%	\$0.1764		\$0.1066		\$0.0698	
78												
79 G-52/T-52	High Annual, Low Winter Use	386	\$1,124.19	\$260.73	\$1,200.00	6.74%	\$0.1541		\$0.0707		\$0.0834	
80												
81	Total Large Annual Use	836										
82												
83												
84	Total	380,179										

Note:  
 (1) Page 1 of 8, Column (B)  
 (2) Schedule DLG/PMN-2G-2, Table 14, Page 2 of 2, Line 9

**NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN SETTLEMENT**

	CURRENT & PROPOSED RATES (excl Special Contract)	Proposed Charges				Proposed Average Rate	Proposed Block Differential		Existing Block Differential	
		Winter		Summer			Winter	Summer	Winter	Summer
		First	Second	First	Second					
48										
49										
50										
51										
52										
53	R-5 Residential, Heating	\$0.6239	\$0.5718	\$0.5449	\$0.5449		\$0.0521	\$0.0000	\$0.1136	\$0.0000
54	R-10 Residential Heating, Low Income	\$0.6239	\$0.5718	\$0.5449	\$0.5449		\$0.0521	\$0.0000	\$0.1136	\$0.0000
55	Total Heating	\$0.6239	\$0.5718	\$0.5449	\$0.5449	\$0.5852				
56		0.00%	12.05%	0.00%	0.00%					
57										
58	R-6 Residential, Non-Heating	\$0.4823	\$0.4823	\$0.4823	\$0.4823		\$0.0000	\$0.0000	\$0.0000	\$0.0000
59	R-11 Residential Non-Heating, Low Income	\$0.4823	\$0.4823	\$0.4823	\$0.4823		\$0.0000	\$0.0000	\$0.0000	\$0.0000
60	Total Non-Heating	\$0.4823	\$0.4823	\$0.4823	\$0.4823	\$0.4823				
61		14.44%	14.44%	14.44%	14.44%					
62										
63	G-40/T-40 Low Annual, High Winter Use	\$0.1676	\$0.1676	\$0.1676	\$0.1676		\$0.0000	\$0.0000	\$0.0000	\$0.0000
64		3.78%	3.78%	3.78%	3.78%					
65	G-50/T-50 Low Annual, Low Winter Use	\$0.1676	\$0.1676	\$0.1676	\$0.1676		\$0.0000	\$0.0000	\$0.0000	\$0.0000
66		3.78%	3.78%	3.78%	3.78%	\$0.1676				
67	Total Low Annual Use									
68										
69										
70	G-41/T-41 Medium Annual, High Winter Use	\$0.2179		\$0.1703		\$0.0476				
71		3.86%		4.99%						
72	G-51/T-51 Medium Annual, Low Winter Use	\$0.1538	\$0.1256	\$0.1201	\$0.0976	\$0.1298	\$0.0282	\$0.0225	\$0.0282	\$0.0225
73		1.18%	1.45%	1.52%	1.88%					
74	Total Medium Annual Use									
75										
76										
77	G-42/T-42 High Annual, High Winter Use	\$0.1782		\$0.1084		\$0.0698				
78		1.02%		1.69%						
79	G-52/T-52 High Annual, Low Winter Use	\$0.1545		\$0.0711		\$0.0834				
80		0.26%		0.57%						
81	Total Large Annual Use									
82										
83										
84	Total									
85										
86										
87										
88										

Note:  
Block Percentages are Proposed Increase to Existing Charges from Page 2 of 8

**NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN SETTLEMENT**

	(A)	(X)	(Y)	(Z)	(AA)	(AB)	(AC)	(AD)	(AE)	(AF)	(AG)
48											
49	<b>CURRENT &amp; PROPOSED RATES</b>		Proposed Revenue Recovery					Total	Final		Variance
50	(excl Special Contract)	Customer	Customer	Winter Therms		Summer Therms		Revenues	Proposed	Class Target	due to
51		Costs	Charges	First Block	Second Block	First Block	Second Block	@ Proposed	Increase	Rev Req	Rounding
52								Rates			
53	R-5 Residential, Heating	\$12,782,740	\$5,780,863	\$3,612,181	\$4,482,777	\$1,439,783	\$208,159	\$15,523,763	3.21%		
54	R-10 Residential Heating, Low Income	\$569,253	\$257,439	\$166,584	\$161,921	\$58,959	\$4,795	\$649,698	2.75%		
55	Total Heating		\$6,038,302	\$3,778,765	\$4,644,698	\$1,498,741	\$212,954	\$16,173,461	3.19%	\$16,173,651	-\$191
56			37.33%	23.36%	28.72%	9.27%	1.32%	100.00%			
57											
58	R-6 Residential, Non-Heating	\$750,761	\$354,628	\$26,451	\$45,608	\$26,791	\$16,138	\$469,616	3.19%		
59	R-11 Residential Non-Heating, Low Income	\$2,165	\$1,022	\$81	\$43	\$122	\$63	\$1,332	3.02%		
60	Total Non-Heating		\$355,651	\$26,532	\$45,651	\$26,913	\$16,201	\$470,948	3.19%	\$470,948	\$0
61			75.52%	5.63%	9.69%	5.71%	3.44%	100.00%			C&I ADJ FCTR
62											100.20%
63	G-40/T-40 Low Annual, High Winter Use	\$3,329,648	\$3,974,496	308,367	\$1,037,956	122,199	\$96,663	\$5,539,681	1.04%	\$5,535,582	
64			71.75%	5.57%	18.74%	2.21%	1.74%	100.00%			
65	G-50/T-50 Low Annual, Low Winter Use	\$539,339	\$654,774	36,604	\$116,899	36,737	\$91,463	\$936,477	1.11%	\$940,381	
66			69.92%	3.91%	12.48%	3.92%	9.77%	100.00%			
67	Total Low Annual Use		\$4,629,270	\$344,971	\$1,154,855	\$158,936	\$188,126	\$6,476,158	1.05%	\$6,475,962	\$195
68				0.0038							
69											
70	G-41/T-41 Medium Annual, High Winter Use	\$1,108,718	\$1,653,102	2,318,573		427,278		\$4,398,954	3.13%	\$4,401,414	
71			37.58%	52.71%		9.71%		100.00%			
72	G-51/T-51 Medium Annual, Low Winter Use	\$386,763	\$620,570	250,897	\$123,054	148,277	\$62,131	\$1,204,928	1.53%	\$1,202,497	
73			51.50%	20.82%	10.21%	12.31%	5.16%	100.00%			
74	Total Medium Annual Use		\$2,273,672	\$2,569,471	\$123,054	\$575,556	\$62,131	\$5,603,882	2.78%	\$5,603,911	-\$29
75											
76											
77	G-42/T-42 High Annual, High Winter Use	\$142,995	\$540,160	\$899,415		\$185,458		\$1,625,032	2.93%	\$1,629,080	
78			33.24%	55.35%		11.41%		100.00%			
79	G-52/T-52 High Annual, Low Winter Use	\$100,511	\$462,600	\$1,427,395		\$547,467		\$2,437,462	1.50%	\$2,433,528	
80			18.98%	58.56%		22.46%		100.00%			
81	Total Large Annual Use		\$1,002,760	\$2,326,809		\$732,925		\$4,062,494	2.07%	\$4,062,608	-\$114
82											
83											
84	Total	\$19,712,893	\$14,299,654	\$9,046,548	\$5,968,258	\$2,993,071	\$479,412	\$32,786,942	2.55%	\$32,787,080	-\$138
85		60.12%	43.61%	27.59%	18.20%	9.13%	1.46%	100.00%			
86								\$31,971,567		Existing Revenue (Page 2)	
87	Note:							\$815,513		Deficiency (Page 3)	
88	Revenue Recovery by Proposed Rate Components as a Percent of Total Proposed Revenues.										

NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN  
 SETTLEMENT

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
		Cost Study Existing Customer Charge	Proposed Customer Charges	Proposed Cust Chg Increase	Accounting Cost of Service Results @ 7.59% Equalized ROR				Marginal Cost of Service Results @ 7.59% Equalized ROR			
					Revenue (1) Total \$	Percent Increase	Customer (2) \$/Mo/Cust	FAC Charge(3) \$/Mo/Cust	Revenue Total \$	Percent Increase	Customer \$/Mo/Cust	FAC Charge(4) \$/Mo/Cust
90												
91	<b>CURRENT &amp; PROPOSED RATES</b>											
92	(excl Special Contract)											
93								23.04%				23.04%
94												
95	R-5 Residential, Heating	\$21.36	\$21.36	0.00%								
96	R-10 Residential Heating, Low Income	\$21.36	\$21.36	0.00%								
97	Total Heating				\$16,405,659	4.67%	\$44.86	\$3.13	\$16,630,697	6.10%	\$47.23	\$4.00
98												
99	R-6 Residential, Non-Heating	\$21.36	\$21.36	0.00%								
100	R-11 Residential Non-Heating, Low Income	\$21.36	\$21.36	0.00%								
101	Total Non-Heating				\$788,633	72.80%	\$44.20	\$0.63	\$696,512	52.61%	\$45.22	\$0.61
102												
103	G-40/T-40 Low Annual, High Winter Use	\$67.45	\$67.45	0.00%	\$5,136,992	-6.31%	\$53.85	\$8.38	\$5,457,817	-0.45%	\$56.51	\$12.63
104	G-50/T-50 Low Annual, Low Winter Use	\$67.45	\$67.45	0.00%	\$795,344	-14.13%	\$53.50	\$7.11	\$688,127	-25.71%	\$55.56	\$5.09
105												
106												
107	G-41/T-41 Medium Annual, High Winter Use	\$196.73	\$200.00	1.66%	\$3,949,104	-7.42%	\$159.33	\$81.23	\$4,641,440	8.82%	\$134.14	\$105.71
108	G-51/T-51 Medium Annual, Low Winter Use	\$196.73	\$200.00	1.66%	\$1,223,826	3.13%	\$156.26	\$60.88	\$987,106	-16.82%	\$124.65	\$46.09
109	Therms											
110	Block Differential Adjustment Rate											
111												
112	Proposed Therm Rates											
113	Proposed Revenue Recovery											
114												
115												
116	G-42/T-42 High Annual, High Winter Use	\$1,124.19	\$1,200.00	6.74%	\$1,518,176	-3.84%	\$560.01	\$721.24	\$1,693,586	7.27%	\$317.67	\$797.80
117	G-52/T-52 High Annual, Low Winter Use	\$1,124.19	\$1,200.00	6.74%	\$2,969,346	23.65%	\$771.89	\$1,782.34	\$1,991,795	-17.06%	\$260.73	\$1,153.97
118												
119												
120	Total				\$32,787,080	2.55%			\$32,787,080	2.55%		

Notes:

- (1) Accounting Cost - Schedule DLG/PMN-1G-6, Pages 5 and 6 of 8, Line 20
  - (2) Accounting Cost - Schedule DLG/PMN-1G-6, Pages 7 and 8 of 8, Line 19
  - (3) Accounting Cost - Schedule DLG/PMN-1G-6, Pages 6 and 7 of 9, Line 5 / line 24 \* 23.04% (percent of cost for 2" and below mains)
  - (4) Facilities Charge(FC): (Marginal Study Schedule DLG/PMN-2G-2, Table 14, Line 38 - Column (H)) \* 24.04%
- Reference Workpapers - Local Distribution Fixed Cost Factor

**NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN SETTLEMENT**

	(A)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)	(W)
90												
91	<b>CURRENT &amp; PROPOSED RATES</b>	Proposed Charges					Proposed Charges					
92	(excl Special Contract)	Winter		Summer			Block Differential					
93		<u>First</u>	<u>Second</u>	<u>First</u>	<u>Second</u>	<u>Total</u>	<u>Winter</u>	<u>Summer</u>	<u>First</u>	<u>Second</u>		
94												
95	R-5 Residential, Heating											
96	R-10 Residential Heating, Low Income											
97	Total Heating											
98												
99	R-6 Residential, Non-Heating											
100	R-11 Residential Non-Heating, Low Income											
101	Total Non-Heating											
102												
103	G-40/T-40 Low Annual, High Winter Use											
104	G-50/T-50 Low Annual, Low Winter Use											
105												
106												
107	G-41/T-41 Medium Annual, High Winter Use											
108	G-51/T-51 Medium Annual, Low Winter Use											
109	Therms	1,631,320	979,727	1,234,616	636,585	4,482,248						
110	Block Differential Adjustment Rate	\$0.0282	\$0.0280	\$0.0225								
111												
112	Proposed Therm Rates	0.1538	0.1256	0.1201	0.0976		\$584,332	0.0282	0.0225	0.0337	0.0280	
113	Proposed Revenue Recovery	\$250,897	\$123,054	\$148,277	\$62,131	\$584,359	\$27 Diff					
114					Rev Adj Fac	0.7485						
115												
116	G-42/T-42 High Annual, High Winter Use											
117	G-52/T-52 High Annual, Low Winter Use											
118												
119												
120	Total											

NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN  
 SETTLEMENT

CURRENT & PROPOSED RATES (excl Special Contract)			PERMANENT RATES (Pages 4 and 5)					PERMANENT RATES AUG17-DEC17 FOR RECOUPMENT (See below)				
			WINTER		SUMMER			WINTER		SUMMER		
			Settlement Customer Charge	Settlement First Block	Settlement Second Block	Settlement First Block	Settlement Second Block	Settlement Customer Charge	Settlement First Block	Settlement Second Block	Settlement First Block	Settlement Second Block
95	R-5	Residential, Heating	\$21.36	\$0.6239	\$0.5718	\$0.5449	\$0.5449	\$21.36	\$0.6733	\$0.6185	\$0.5903	\$0.5903
96	R-10	Residential Heating, Low Income	\$21.36	\$0.6239	\$0.5718	\$0.5449	\$0.5449	\$21.36	\$0.6733	\$0.6185	\$0.5903	\$0.5903
97		Total Heating										
99	R-6	Residential, Non-Heating	\$21.36	\$0.4823	\$0.4823	\$0.4823	\$0.4823	\$21.36	\$0.5823	\$0.5823	\$0.5823	\$0.5823
100	R-11	Residential Non-Heating, Low Income	\$21.36	\$0.4823	\$0.4823	\$0.4823	\$0.4823	\$21.36	\$0.5823	\$0.5823	\$0.5823	\$0.5823
101		Total Non-Heating										
103	G-40/T-40	Low Annual, High Winter Use	\$67.45	\$0.1676	\$0.1676	\$0.1676	\$0.1676	\$70.87	\$0.1761	\$0.1761	\$0.1761	\$0.1761
104	G-50/T-50	Low Annual, Low Winter Use	\$67.45	\$0.1676	\$0.1676	\$0.1676	\$0.1676	\$70.87	\$0.1761	\$0.1761	\$0.1761	\$0.1761
107	G-41/T-41	Medium Annual, High Winter Use	\$200.00	\$0.2179		\$0.1703		\$210.15	\$0.2290		\$0.1789	
108	G-51/T-51	Medium Annual, Low Winter Use	\$200.00	\$0.1538	\$0.1256	\$0.1201	\$0.0976	\$210.15	\$0.1616	\$0.1320	\$0.1262	\$0.1026
109		Therms										
110		Block Differential Adjustment Rate										
112		Proposed Therm Rates										
113		Proposed Revenue Recovery										
116	G-42/T-42	High Annual, High Winter Use	\$1,200.00	\$0.1782		\$0.1084		\$1,260.91	\$0.1872		\$0.1139	
117	G-52/T-52	High Annual, Low Winter Use	\$1,200.00	\$0.1545		\$0.0711		\$1,260.91	\$0.1623		\$0.0747	
118		Total										
118		Settlement Revenue Deficiency at 2018 Income Tax Rates				\$ 938,730		<i>Additional Residential Block Rate Increases with Existing Customer Charge</i>				
119		Settlement Revenue Deficiency at 2017 Income Tax Rates				\$ 2,602,918		R-6/R-11	Customer Charge Increase Assigned to Block Rates:			
120								\$ 1.08	16,650	Customers (Page 1)		
121		Settlement Permanent Base Revenue (Page 6)				\$ 32,786,942			\$ 18,052	Customer Charge Revenue		
122		Increased Revenue Deficiency at 2017 Income Tax Rates				\$ 1,664,188			239,073	Therms (Page 1)		
123		Permanent Base Revenue at 2017 Income Tax Rates				\$ 34,451,130			\$ 0.0755	Additional Rate/Therm Increase		
124		% Increase to Permanent Rates Aug 17-Dec 17				5.1%		R-5/R-10	Customer Charge Increase Assigned to Block Rates:			
125								\$ 1.08	282,692	Customers (Page 1)		
126									\$ 306,490	Customer Charge Revenue		
									17,320,928	Therms (Page 1)		
									\$ 0.0177	Additional Rate/Therm Increase		

REVENUE CHECK FOR PERMANENT RATES AUG 17-DEC 17 ANNUALIZED:

	Customer	Usage	Usage	Usage	Usage	Usage	Usage	Difference
R-5/R-10	\$6,038,302	\$ 4,077,738	\$ 5,024,186	\$ 1,623,483	\$ 230,679		\$16,994,387	(All classes are
R-6/R-11	\$355,651	\$ 139,201					\$494,852	5.1%
G-40/G-50	\$ 4,864,241	\$ 1,940,631					\$6,804,872	increases.)
G-41/G-51	\$ 2,389,078	\$ 2,436,259	\$ 448,966	\$ 263,632	\$ 129,300	\$ 155,804	\$5,888,322	
G-42/G-52	\$ 1,053,658	\$ 945,067	\$ 194,871	\$ 1,499,846	\$ 575,256		\$4,268,697	
							\$34,451,130	\$0

(NOTE: Usage revenue based on Rates above and Therms per block on Page 1.)

**NU - NH DIVISION 2017 PROPOSED GAS RATE DESIGN SETTLEMENT**

90		
91	<b>CURRENT &amp; PROPOSED RATES</b>	
92	(excl Special Contract)	
93		
94		
95	R-5 Residential, Heating	
96	R-10 Residential Heating, Low Income	
97	Total Heating	
98		
99	R-6 Residential, Non-Heating	
100	R-11 Residential Non-Heating, Low Income	
101	Total Non-Heating	
102		
103	G-40/T-40 Low Annual, High Winter Use	
104	G-50/T-50 Low Annual, Low Winter Use	
105		
106		
107	G-41/T-41 Medium Annual, High Winter Use	
108	G-51/T-51 Medium Annual, Low Winter Use	
109	Therms	
110	Block Differential Adjustment Rate	
111		
112	Proposed Therm Rates	
113	Proposed Revenue Recovery	
114		
115		
116	G-42/T-42 High Annual, High Winter Use	
117	G-52/T-52 High Annual, Low Winter Use	
118		
119		
120	Total	

**BASE RATES MAY 2018 WITH STEP ADJUSTMENT**

Customer Charge**	WINTER		SUMMER	
	First Block	Second Block	First Block	Second Block
\$21.36	\$0.6660	\$0.6660	\$0.5870	\$0.5870
\$21.36	\$0.6660	\$0.6660	\$0.5870	\$0.5870
\$21.36	\$0.6227	\$0.6227	\$0.6227	\$0.6227
\$21.36	\$0.6227	\$0.6227	\$0.6227	\$0.6227
\$ 72.26	\$ 0.1795	\$ 0.1795	\$ 0.1795	\$ 0.1795
\$ 72.26	\$ 0.1795	\$ 0.1795	\$ 0.1795	\$ 0.1795
\$ 214.26	\$ 0.2334		\$ 0.1824	
\$ 214.26	\$ 0.1648	\$ 0.1346	\$ 0.1287	\$ 0.1046
\$ 1,285.55	\$ 0.1909		\$ 0.1161	
\$ 1,285.55	\$ 0.1655		\$ 0.0762	

**(\*\* For Residential Classes: Customer Charges Held to Existing)**

**REVENUE CHECK WITH 2018 STEP ADJUSTMENT:**

	Customer	Usage	Usage	Usage	Usage	Usage	Usage	Difference
R-5/R-10	\$ 6,038,302	\$ 9,443,631	\$ 1,843,944					\$ 17,325,877 (All classes are
R-6/R-11	\$ 355,651	\$ 148,871						\$ 504,521 7.1%
G-40/G-50	\$ 4,959,393	\$ 1,978,021						\$ 6,937,414 increases.)
G-41/G-51	\$ 2,435,785	\$ 2,483,502	\$ 457,637	\$ 268,842	\$ 131,871	\$ 158,895	\$ 66,587	\$ 6,003,118
G-42/G-52	\$ 1,074,248	\$ 963,514	\$ 198,631	\$ 1,529,021	\$ 586,737			\$ 4,352,153

(NOTE: Usage revenue based on Rates above and Therms per block on Page 1.)

\$ 35,123,082 \$ (1,306)  
Due to Rate Rounding

Settlement Permanent Base Revenue (Page 6)	\$ 32,786,942
Settlement 2018 Step Adjustment	\$ 2,337,446
Revenue Requirement with 2018 Step Adjustment	\$ 35,124,388
% Increase Permanent Rates for May 18	7.1%

All C&I Permanent Rates increased by above %. See below for Residential.

R-5/R-10	\$16,173,461	Settlement Permanent Base Revenue (Page 6)
	7.1%	% Increase Permanent Rates for May 18
	\$1,153,038	Settlement 2018 Step Adjustment
	\$0.6239	Permanent Rates Jan18-Apr18 1st Block
	\$0.5718	Permanent Rates Jan18-Apr18 2nd Block
	\$0.0521	Difference
	8,122,942	Winter 2nd Block Therms (Page 1)
	\$423,205	Revenue from Winter 2nd Block Therms
		to Equalize Block Rates at \$0.6239
	\$1,153,038	Settlement 2018 Step Adjustment
	<del>\$423,205</del>	Revenue to Winter 2nd Block Therms to Equalize
	\$729,833	Revenue Requirement from 1st and 2nd Blocks
	17,320,928	Annual Therms Both Blocks (Page 1)
	\$0.0421	Therm Block Rate Increases After Winter Equalized
R-6/R-11	\$ 470,948	Settlement Permanent Base Revenue (Page 6)
	7.1%	% Increase Permanent Rates for May 18
	\$33,575	Settlement 2018 Step Adjustment
	239,073	Annual Therms Both Blocks (Page 1)
	\$0.1404	Therm Block Rate Increase

Northern Utilities, Inc. - New Hampshire  
Rate Plan Capital Expenditures - Eligible Facilities  
2018 Step Adjustment

Northern Utilities, Inc.  
Docket No. DG 17-070  
Exhibit 3  
Page 1 of 4

Line No.	Rate Effective Date	Description	Investment Year 2017
<b><u>Rate Base</u></b>			
1		Utility Plant Additions	\$ 15,471,311
2		Cost of Removal	646,584
3		2017 Capital Expenditures - Eligible Facilities	<u>16,117,895</u>
4		Accumulated Depreciation	<u>231,476</u>
5		Net Utility Plant	15,886,419
6		Accumulated Deferred Income Taxes (ADIT)	<u>31,933</u>
7		Rate Base	<u>\$ 15,854,486</u>
<b><u>Revenue Requirement</u></b>			
8		Rate Base	\$ 15,854,486
9		Pre-Tax Rate of Return	9.43%
10		Return and Related Income Taxes	<u>\$ 1,494,809</u>
11		Depreciation Expense	462,951
12		Property Taxes <sup>(1)</sup>	<u>379,685</u>
13		Revenue Requirement	<u>\$ 2,337,446</u>
<b><u>Rate Cap Limit:</u></b>			
14		Revenue Requirement	\$ 2,337,446
15		Cumulative Revenue Requirement	2,337,446
16		Revenue Requirement Cap	<u>4,552,719</u>
17		Allowable Revenue Requirement	<u>\$ 2,337,446</u>
<b><u>Supporting Calculations</u></b>			
18		<b><u>Book Depreciation</u></b>	\$ 462,951
<b><u>Tax Depreciation</u></b>			
19		Utility Plant Additions	\$ 15,471,311
20		Tax Depreciation Rate	3.75%
21		Tax Depreciation	<u>\$ 580,174</u>
22		Tax-Book Timing Difference	\$ 117,223
23		Income Tax Rate	27.24%
24		Accumulated Deferred Income Taxes (ADIT)	<u>\$ 31,933</u>
25		Accumulated Depreciation = Book Depreciation * 0.5	<u>\$ 231,476</u>

**Notes:**

(1) 2.39% rate (2017 Property Taxes of \$3,921,196 / 2017 Net Utility Plant of \$164,133,045)

Northern Utilities, Inc. - New Hampshire  
2017 Eligible Facilities Project Detail

Northern Utilities, Inc.  
Docket No. DG 17-070  
Exhibit 3  
Page 2 of 4

Line No.	Budget Category	Work Order Number	Work Order Description	Install	Removal	Total	In Service Date
<b>Gas Main Extensions</b>							
1	JAB	N-007013-00173410	407 Old Dover Rd. Rochester	\$ 897,086	\$ -	\$ 897,086	12/2017
2	JAB	N-007051-00173468	77 Farmington Rd Rochester NH	119,443	-	119,443	12/2017
3	JAB	N-007052-00173469	Tuscan Village Project/Pleasant St	455,007	-	455,007	12/2017
4	JAB	N-007062-00173480	920 Lafayette Rd Seabrook NH	67,318	-	67,318	12/2017
5	<b>Total Gas Main Extensions Excluding Services</b>			\$ 1,538,854	\$ -	\$ 1,538,854	
<b>Gas Main Extensions Carryover</b>							
6	JAC	N-005050-00153472	Beechwood Rd Salem NH	\$ 69,910	\$ -	\$ 69,910	04/2017
7	JAC	N-006030-00163444	100 Farmington Rd Rochester	1,610,151	-	1,610,151	01/2017
8	JAC	N-006031-00163445	Bramber Valley 128 Post Rd Greenland	197,489	-	197,489	12/2017
9	JAC	N-006039-00163458	Emerald Ln/Indian Ridge Dover	272,699	-	272,699	01/2017
10	JAC	N-006046-00163468	263 Drakeside Rd Hampton NH	119,411	-	119,411	01/2017
11	JAC	N-006052-00163475	181 Silver St (Silver Square) Dover	103,256	-	103,256	01/2017
12	JAC	N-006056-00163496	Concord Pl/McKay Dr Exeter NH	131,256	-	131,256	01/2017
13	<b>Total Gas Main Extensions Carryover Excluding Services</b>			\$ 2,504,171	\$ -	\$ 2,504,171	
<b>NH Bare Steel Replacement</b>							
14	JCB	N-007017-00173415	Spring St Dover NH	\$ 90,333	\$ 9,321	\$ 99,655	02/2017
15	JCB	N-007017-00173416	Central Ave @ Glenwood Dover NH	392,085	38,167	430,252	12/2017
16	JCB	N-007017-00173417	Chestnut St / Third St Dover NH	72,900	8,100	81,000	12/2017
17	JCB	N-007017-00173418	Fern Ct Dover NH	102,964	9,828	112,791	12/2017
18	JCB	N-007017-00173419	Fourth St Dover NH	110,703	9,169	119,872	09/2017
19	JCB	N-007017-00173420	Third St @ Central Ave Dover NH	166,565	15,366	181,930	09/2017
20	JCB	N-007017-00173421	Central Ave/ Washington St	827,165	86,665	913,830	12/2017
21	JCB	N-007017-00173422	Robie St Hampton NH	33,398	3,478	36,876	12/2017
22	JCB	N-007017-00173423	Scott Rd Hampton NH	37,616	3,862	41,479	12/2017
23	JCB	N-007017-00173424	Stickney Terr Hampton NH	95,313	9,526	104,838	12/2017
24	JCB	N-007017-00173425	Towle Ave Hampton NH	135,720	14,072	149,792	09/2017
25	JCB	N-007017-00173426	Naves Rd / Yeaton Rd Hampton NH	99,481	10,177	109,658	09/2017
26	JCB	N-007017-00173427	Ridgeview Terr Hampton NH	138,607	14,614	153,221	09/2017
27	JCB	N-007017-00173428	Garden Rd Plaistow Rd NH	28,110	3,002	31,112	12/2017
28	JCB	N-007017-00173429	Lafayette Rd @ Springbrook Cir Port	85,163	8,789	93,953	07/2017
29	JCB	N-007017-00173430	Dublin Way Rochester NH	12,051	1,173	13,224	09/2017
30	JCB	N-007017-00173431	High St / Walnut St Rochester NH	206,935	21,013	227,949	12/2017
31	JCB	N-007017-00173432	Lois St Rochester NH	43,490	4,477	47,967	12/2017
32	JCB	N-007017-00173433	Canal St Somersworth NH	201,705	21,490	223,194	12/2017
33	JCB	N-007017-00173434	Wolcott St Somersworth NH	31,943	3,197	35,140	08/2017
34	JCB	N-007017-00173435	520-522 Ocean Blvd Hampton NH	41,833	4,228	46,061	09/2017
35	JCB	N-007017-00173436	Boars Head / Cliff Ave Hampton NH	163,059	17,066	180,125	12/2017
36	JCB	N-007017-00173445	Pearl St Portsmouth NH	58,904	5,498	64,402	12/2017
37	JCB	N-007017-00173451	Prepaid Excavation Permits	104,074	11,307	115,381	12/2017
38	JCB	N-007017-00173456	Paving and lawn restoration for 201	539,293	59,539	598,832	12/2017
39	JCB	N-007017-00173462	10 Main St Gonic	137,298	13,843	151,141	09/2017
40	JCB	N-007017-00173467	Franklin D/Woodbury Ave	147,651	13,406	161,057	12/2017
41	JCB	N-007017-00173471	Fleet St Bare Steel Replacement	60,243	6,404	66,647	12/2017
42	JCB	N-007017-00173481	100 Main St Dover NH	270,039	29,337	299,376	12/2017
43	JCB	N-007017-00173490	Hampton/Seabrook Bridge	-	6,040	6,040	12/2017
44	<b>Total NH Bare Steel Replacement Program</b>			\$ 4,434,640	\$ 462,155	\$ 4,896,795	
<b>NH Bare Steel Replacement Carryover</b>							
45	JCC	N-006020-00163439	Bridge St, Hanover St Portsmouth NH	\$ 3,099	\$ -	\$ 3,099	08/2017
46	JCC	N-006020-00163446	Excavation Permits	47	-	47	08/2017
47	JCC	N-006020-00163504	New Franklin School - Myrtle St Portsmouth	11,169	21,765	32,934	01/2017
48	<b>Total NH Bare Steel Replacement Carryover</b>			\$ 14,315	\$ 21,765	\$ 36,080	
<b>Gas Highway Projects City State</b>							
49	JHB	N-007014-00173411	Whittier St Bridge Dover NH	\$ 692,247	\$ -	\$ 692,247	12/2017
50	JHB	N-007022-00173437	Congress St/Fleet St/Vaughn Mall	714,378	-	714,378	12/2017
51	JHB	N-007040-00173446	Islington St/Bartlett St Portsmouth	2,555,926	-	2,555,926	12/2017
52	JHB	N-007041-00173447	Lafayette Rd Seabrook NH	227,673	32,555	260,228	07/2017
53	JHB	N-007045-00173450	Dover Point Rd Crossing Dover NH	204,521	32,520	237,041	09/2017
54	JHB	N-007046-00173452	Wakefield St Rochester NH	637,717	-	637,717	12/2017
55	JHB	N-007048-00173455	16-30 High St Exeter	152,199	24,638	176,837	08/2017
56	JHB	N-007050-00173464	Court St HDD Exeter	159,883	-	159,883	12/2017
57	JHB	N-007058-00173476	Tanner, Parker, Sudbury, Brewster, McDonough, Hanover Sts Portsmouth	671,778	-	671,778	12/2017
58	JHB	N-007069-00173492	Chestnut St Portsmouth NH	9,651	-	9,651	12/2017
59	<b>Total Gas Highway Projects City State</b>			\$ 6,025,973	\$ 89,713	\$ 6,115,686	
<b>Gas Highway Projects Carryover City State</b>							
60	JHB	N-007014-00173411	Whittier St Bridge Dover NH	\$ (58,618)	\$ 63,438	\$ 4,820	12/2017
61	JHB	N-007022-00173437	Congress St/Fleet St/Vaughn Mall	0	1,141	1,141	12/2017
62	<b>Total Gas Highway Projects Carryover City State</b>			\$ (58,618)	\$ 64,580	\$ 5,961	
<b>Rochester Reinforcement</b>							
63	JPB	N-007059-00173477	Rochester Reinforcement	\$ 858,633	\$ -	\$ 858,633	12/2017
64	<b>Total Rochester Reinforcement</b>			\$ 858,633	\$ -	\$ 858,633	
<b>Farm Taps</b>							
65	JPN	N-007029-00173440	5 Andrews East Kingston (PLV)	31,322	2,123	33,445	08/2017
66	JPN	N-007032-00173443	356 Rt. 108 Madbury (PLV)	38,086	4,121	42,207	12/2017
67	MEB	N-006004-00163015	PLV Replacement	15,541	1,493	17,035	06/2017
68	MEB	N-006004-00163016	PLV Replacement	8,102	635	8,737	06/2017
69	MEB	N-007004-00172908	Install PLV	21,175	-	21,175	12/2017
70	MEB	N-007004-00172915	Install PLV	9,951	-	9,951	12/2017
71	MEB	N-007004-00172919	Install PLV	13,085	-	13,085	12/2017
72	MEB	N-007004-00172920	Install PLV	16,079	-	16,079	12/2017
73	<b>Total Farm Taps</b>			\$ 153,343	\$ 8,372	\$ 161,715	
74	<b>2017 Total Closed to Plant</b>			\$ 15,471,311	\$ 646,584	\$ 16,117,895	

Northern Utilities, Inc. - New Hampshire  
 Calculation of Rate Plan Depreciation Expense

Northern Utilities, Inc.  
 Docket No. DG 17-070  
 Exhibit 3  
 Page 3 of 4

Line No.	FERC ACCOUNT	Additions	Rate	Depreciation Expense
1	376-20 Mains, Coated/Wrapped-G	\$ 799,112	2.66%	\$ 21,256
2	376-30 Mains, Bare Steel-G	0	N/A	-
3	376-40 Mains, Plastic-G	12,142,973	2.87%	348,503
4	376-60 Mains, Cathodic Protectio-G	73,841	4.17%	3,079
5	378-20 Measuring & Regulating St-G	0	3.50%	0
6	380-00 Services-G	2,455,384	3.67%	90,113
7	Total	\$ 15,471,311		\$ 462,951

Northern Utilities, Inc. - New Hampshire  
Pre Tax Rate of Return  
December 31, 2016 Pro Forma

Northern Utilities, Inc.  
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Exhibit 3  
Page 4 of 4

Line No.	(1) Description	(2) Amount	(3) Weight	(4) Cost of Capital	(5) Weighted Cost of Capital	(6) Tax Factor	(7) Pre-Tax Cost
1	Common Stock Equity	\$155,183,729	51.70%	9.50%	4.91%	1.3744	6.75%
2	Long Term Debt	145,000,000	48.30%	5.55%	2.68%		2.68%
3	Short Term Debt	-	0.00%	2.19%	0.00%		0.00%
4	Total	<u>\$ 300,183,729</u>	<u>100.00%</u>		<u>7.59%</u>		<u>9.43%</u>

Northern Utilities Inc. - New Hampshire Division  
Settlement Agreement - Permanent Rates and Step Adjusted Rates

**Billing Determinants - 2016 Test Year Ending Annualized, Weather Normalized**

<u>Rate Class</u>	<u>Annual Customers</u>	<u>Winter Blocks</u>		<u>Summer Blocks</u>		<u>Total Therms</u>
		<u>First Therms</u>	<u>Excess Therms</u>	<u>First Therms</u>	<u>Excess Therms</u>	
R-5 Residential, Heating	270,640	5,789,680	7,839,764	2,642,288	382,014	16,653,745
R-10 Residential Heating, Low Income	12,052	267,004	283,179	108,201	8,800	667,183
R-6 Residential, Non-Heating	16,650	55,015	94,660	55,804	33,594	239,073
G-40/T-40 Low Annual, High Winter Use	58,925	1,839,901	6,193,053	729,110	576,749	9,338,812
G-50/T-50 Low Annual, Low Winter Use	9,708	218,399	697,489	219,197	545,720	1,680,805
G-41/T-41 Medium Annual, High Winter Use	8,266	10,640,539		2,508,973		13,149,512
G-51/T-51 Medium Annual, Low Winter Use	3,103	1,631,320	979,727	1,234,616	636,585	4,482,248
G-42/T-42 High Annual, High Winter Use	450	5,047,220		1,710,865		6,758,085
G-52/T-52 High Annual, Low Winter Use	386	9,238,799		7,699,964		16,938,763
<b>Total</b>	<b>380,227</b>	<b>34,728,045</b>	<b>16,087,960</b>	<b>16,909,271</b>	<b>2,183,591</b>	<b>69,908,867</b>

**Permanent Rates and Step 1 Adjustment**

<u>Rate Class</u>	<u>Customers</u>	<u>Winter Blocks</u>		<u>Summer Blocks</u>		<u>Revenue</u>
		<u>Charge</u>	<u>Therms \$/thm</u>	<u>Therms \$/thm</u>	<u>Therms \$/thm</u>	
R-5 Residential, Heating		\$21.36	\$0.6660	\$0.6660	\$0.5870	\$16,633,337
R-10 Residential Heating, Low Income		\$21.36	\$0.6660	\$0.6660	\$0.5870	\$692,540
Discount*		-\$12.82	-\$0.3996	-\$0.3996	-\$0.3522	
Total Residential Heating, Low Income		\$8.54	\$0.2664	\$0.2664	\$0.2348	
R-6 Residential, Non-Heating		\$21.36	\$0.6227	\$0.6227	\$0.6227	\$504,521
G-40/T-40 Low Annual, High Winter Use		\$72.26	\$0.1795	\$0.1795	\$0.1795	\$5,934,242
G-50/T-50 Low Annual, Low Winter Use		\$72.26	\$0.1795	\$0.1795	\$0.1795	\$1,003,171
G-41/T-41 Medium Annual, High Winter Use		\$214.26	\$0.2334		\$0.1824	\$4,712,107
G-51/T-51 Medium Annual, Low Winter Use		\$214.26	\$0.1648	\$0.1346	\$0.1287	\$1,291,011
G-42/T-42 High Annual, High Winter Use		\$1,285.55	\$0.1909		\$0.1161	\$1,740,815
G-52/T-52 High Annual, Low Winter Use		\$1,285.55	\$0.1655		\$0.0762	\$2,611,338
<b>Total</b>						<b>\$35,123,082</b>

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Northern Utilities Inc. - New Hampshire Division  
Settlement Agreement - Permanent Rates and Step Adjusted Rates

<b>2019 Step 2 \$ Increase</b>	\$2,215,273
<b>2019 Step 2 Percent Increase</b>	6.31%

**Illustrative 2019 Base Rates and Step 2 Adjustment**

Rate Class	Customers Charge	Winter Blocks		Summer Blocks		Revenue
		First Therms \$/thm	Excess Therms \$/thm	First Therms \$/thm	Excess Therms \$/thm	
R-5 Residential, Heating	\$22.71	\$0.7080	\$0.7080	\$0.6240	\$0.6240	\$17,682,430
R-10 Residential Heating, Low Income	\$22.71	\$0.7080	\$0.7080	\$0.6240	\$0.6240	\$736,219
Discount*	<u>-\$13.62</u>	<u>-\$0.4248</u>	<u>-\$0.4248</u>	<u>-\$0.3744</u>	<u>-\$0.3744</u>	
Total Residential Heating, Low Income	\$9.08	\$0.2832	\$0.2832	\$0.2496	\$0.2496	
R-6 Residential, Non-Heating	\$22.71	\$0.6620	\$0.6620	\$0.6620	\$0.6620	\$536,342
G-40/T-40 Low Annual, High Winter Use	\$76.82	\$0.1908	\$0.1908	\$0.1908	\$0.1908	\$6,308,525
G-50/T-50 Low Annual, Low Winter Use	\$76.82	\$0.1908	\$0.1908	\$0.1908	\$0.1908	\$1,066,443
G-41/T-41 Medium Annual, High Winter Use	\$227.77	\$0.2481		\$0.1939		\$5,009,307
G-51/T-51 Medium Annual, Low Winter Use	\$227.77	\$0.1752	\$0.1431	\$0.1368	\$0.1112	\$1,372,437
G-42/T-42 High Annual, High Winter Use	\$1,366.63	\$0.2029		\$0.1234		\$1,850,611
G-52/T-52 High Annual, Low Winter Use	\$1,366.63	\$0.1759		\$0.0810		\$2,776,040
<b>Total</b>						<b>\$37,338,355</b>

\* Revenues associated with the low income discounts are reconciled and recovered in the Residential Low Income Assistance and Regulatory Assessment Clause (RLIARA). Discounts are based on the same discounts as in current permanent distribution rates (prior to temporary rate adjustment).

000128

**Northern Utilities, Inc.**  
Calculation of Rate Case Expense Rate

<u>Issue</u>			
Legal	NA	\$	-
Equity	ScottMadden	\$	61,033
Rates	Management Applications		
	a) Rate Design	\$	16,688
	b) Accounting Cost of Service Study	\$	37,625
	c) Marginal Cost Study	\$	7,400
	d) Depreciation	\$	27,888
	e) Lead Lag	\$	15,775
Other	Staples	\$	1,006
	Temparary Help KBW	\$	24,711
	NH State Consultants	\$	25,000
TOTAL		\$	217,125
	Forecast Delivery (therms) May 2018 through April 2019		74,578,559
	<b>Rate Case Expense Rate (RCE)</b>		<b>\$0.0029</b>

Northern Utilities - NH Division  
Residential Heating Customer - R5  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	8.26	\$33.15	\$33.60	\$0.46	1.4%
20.0%	26.13	\$58.62	\$60.07	\$1.45	2.5%
30.0%	41.73	\$80.88	\$83.19	\$2.31	2.9%
40.0%	56.24	\$100.87	\$104.70	\$3.82	3.8%
50.0%	70.90	\$120.11	\$126.41	\$6.30	5.2%
60.0%	86.45	\$140.53	\$149.45	\$8.93	6.4%
70.0%	104.48	\$164.19	\$176.16	\$11.97	7.3%
80.0%	126.94	\$193.68	\$209.45	\$15.77	8.1%
90.0%	158.18	\$234.69	\$255.73	\$21.05	9.0%
100.0%	243.66	\$346.90	\$382.39	\$35.49	10.2%
Average	92.30	\$148.20	\$158.12	\$9.92	6.7%
<u>Distribution Only</u>					
10.0%	8.26	\$26.52	\$26.86	\$0.35	1.3%
20.0%	26.13	\$37.66	\$38.76	\$1.10	2.9%
30.0%	41.73	\$47.39	\$49.15	\$1.76	3.7%
40.0%	56.24	\$55.74	\$58.82	\$3.08	5.5%
50.0%	70.90	\$63.22	\$68.58	\$5.36	8.5%
60.0%	86.45	\$71.16	\$78.94	\$7.78	10.9%
70.0%	104.48	\$80.35	\$90.94	\$10.59	13.2%
80.0%	126.94	\$91.82	\$105.90	\$14.08	15.3%
90.0%	158.18	\$107.76	\$126.71	\$18.95	17.6%
100.0%	243.66	\$151.38	\$183.64	\$32.26	21.3%
Average	92.30	\$74.14	\$82.83	\$8.69	11.7%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$21.36 (1)	Customer Charge (\$/customer)		\$21.36 (3)
Distribution Charge - First 50 therms (\$/thm)		\$0.6239 (1)	Distribution Charge - First 50 therms (\$/thm)		\$0.6660 (3)
Distribution Charge - Excess 50 therms (\$/thm)		\$0.5103 (1)	Distribution Charge - Excess 50 therms (\$/thm)		\$0.6660 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.7535 (2)	COG (\$/thm)		\$0.7568 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000130

Northern Utilities - NH Division  
Residential Heating Customer - R5  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	2.61	\$23.91	\$24.06	\$0.14	0.6%
30.0%	6.85	\$28.07	\$28.45	\$0.38	1.4%
40.0%	10.34	\$31.48	\$32.05	\$0.57	1.8%
50.0%	13.64	\$34.71	\$35.47	\$0.76	2.2%
60.0%	17.10	\$38.09	\$39.04	\$0.95	2.5%
70.0%	21.29	\$42.20	\$43.38	\$1.18	2.8%
80.0%	27.06	\$47.85	\$49.35	\$1.50	3.1%
90.0%	37.40	\$57.97	\$60.04	\$2.07	3.6%
100.0%	75.30	\$95.07	\$99.24	\$4.17	4.4%
Average	21.16	\$42.07	\$43.24	\$1.17	2.8%
<u>Distribution Only</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	2.61	\$22.78	\$22.89	\$0.11	0.5%
30.0%	6.85	\$25.09	\$25.38	\$0.29	1.1%
40.0%	10.34	\$26.99	\$27.43	\$0.44	1.6%
50.0%	13.64	\$28.79	\$29.37	\$0.57	2.0%
60.0%	17.10	\$30.68	\$31.40	\$0.72	2.3%
70.0%	21.29	\$32.96	\$33.86	\$0.90	2.7%
80.0%	27.06	\$36.11	\$37.25	\$1.14	3.2%
90.0%	37.40	\$41.74	\$43.31	\$1.57	3.8%
100.0%	75.30	\$62.39	\$65.56	\$3.17	5.1%
Average	21.16	\$32.89	\$33.78	\$0.89	2.7%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$21.36 (1)	Customer Charge (\$/customer)		\$21.36 (3)
Distribution Charge - First 50 therms (\$/thm)		\$0.5449 (1)	Distribution Charge - First 50 therms (\$/thm)		\$0.5870 (3)
Distribution Charge - Excess 50 therms (\$/thm)		\$0.5449 (1)	Distribution Charge - Excess 50 therms (\$/thm)		\$0.5870 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.3850 (2)	COG (\$/thm)		\$0.3883 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000131

Northern Utilities - NH Division  
Residential Low Income Heating Customer - R10  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Present Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	13.42	\$22.66	\$23.06	\$0.40	1.8%
20.0%	30.86	\$41.00	\$41.93	\$0.93	2.3%
30.0%	43.75	\$54.57	\$55.89	\$1.32	2.4%
40.0%	55.35	\$66.52	\$68.43	\$1.91	2.9%
50.0%	66.76	\$78.01	\$80.78	\$2.77	3.6%
60.0%	79.29	\$90.63	\$94.34	\$3.72	4.1%
70.0%	93.47	\$104.90	\$109.69	\$4.79	4.6%
80.0%	112.63	\$124.18	\$130.42	\$6.24	5.0%
90.0%	140.35	\$152.08	\$160.41	\$8.33	5.5%
100.0%	207.60	\$219.77	\$233.18	\$13.42	6.1%
Average	84.35	\$95.71	\$99.81	\$4.10	4.3%
<u>Distribution Only</u>					
10.0%	13.42	\$11.89	\$12.11	\$0.23	1.9%
20.0%	30.86	\$16.24	\$16.76	\$0.52	3.2%
30.0%	43.75	\$19.46	\$20.20	\$0.74	3.8%
40.0%	55.35	\$22.11	\$23.28	\$1.17	5.3%
50.0%	66.76	\$24.44	\$26.32	\$1.88	7.7%
60.0%	79.29	\$27.00	\$29.66	\$2.67	9.9%
70.0%	93.47	\$29.89	\$33.44	\$3.55	11.9%
80.0%	112.63	\$33.80	\$38.55	\$4.74	14.0%
90.0%	140.35	\$39.46	\$45.93	\$6.47	16.4%
100.0%	207.60	\$53.19	\$63.84	\$10.66	20.0%
Average	84.35	\$28.03	\$31.01	\$2.98	10.6%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$8.54 (1)	Customer Charge (\$/customer)		\$8.54 (3)
Distribution Charge - First 50 therms (\$/thm)		\$0.2496 (1)	Distribution Charge - First 50 therms (\$/thm) *		\$0.2664 (3)
Distribution Charge - Excess 50 therms (\$/thm)		\$0.2041 (1)	Distribution Charge - Excess 50 therms (\$/thm) *		\$0.2664 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.7535 (2)	COG (\$/thm)		\$0.7568 (4)

(1) Current seasonal rates  
(2) 6 month average seasonal COG  
(3) Proposed Rates, Schedule DLG/PMN-1G-8  
(4) 6 month average seasonal COG adjusted for changes due to rate proposal

\* Assumes current 60% discount on distribution rates

000132

Northern Utilities - NH Division  
Residential Low Income Heating Customer - R10  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Present Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.09	\$8.60	\$8.60	\$0.00	0.0%
20.0%	3.46	\$10.80	\$10.90	\$0.10	1.0%
30.0%	7.52	\$13.44	\$13.67	\$0.23	1.7%
40.0%	10.44	\$15.34	\$15.66	\$0.32	2.1%
50.0%	13.36	\$17.25	\$17.65	\$0.40	2.3%
60.0%	16.33	\$19.18	\$19.68	\$0.49	2.6%
70.0%	20.10	\$21.64	\$22.25	\$0.61	2.8%
80.0%	25.06	\$24.88	\$25.63	\$0.76	3.0%
90.0%	34.33	\$30.92	\$31.95	\$1.04	3.4%
100.0%	64.97	\$50.89	\$52.85	\$1.96	3.9%
Average	19.57	\$21.29	\$21.88	\$0.59	2.8%
<u>Distribution Only</u>					
10.0%	0.09	\$8.56	\$8.56	\$0.00	0.0%
20.0%	3.46	\$9.29	\$9.35	\$0.06	0.6%
30.0%	7.52	\$10.18	\$10.31	\$0.13	1.2%
40.0%	10.44	\$10.81	\$10.99	\$0.18	1.6%
50.0%	13.36	\$11.45	\$11.68	\$0.23	2.0%
60.0%	16.33	\$12.10	\$12.37	\$0.28	2.3%
70.0%	20.10	\$12.92	\$13.26	\$0.34	2.6%
80.0%	25.06	\$14.00	\$14.42	\$0.42	3.0%
90.0%	34.33	\$16.02	\$16.60	\$0.58	3.6%
100.0%	64.97	\$22.70	\$23.79	\$1.10	4.8%
Average	19.57	\$12.80	\$13.13	\$0.33	2.6%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$8.54 (1)	Customer Charge (\$/customer)		\$8.54 (3)
Distribution Charge - First 50 therms (\$/thm)		\$0.2179 (1)	Distribution Charge - First 50 therms (\$/thm) *		\$0.2348 (3)
Distribution Charge - Excess 50 therms (\$/thm)		\$0.2179 (1)	Distribution Charge - Excess 50 therms (\$/thm) *		\$0.2348 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.3850 (2)	COG (\$/thm)		\$0.3883 (4)

(1) Current seasonal rates  
(2) 6 month average seasonal COG  
(3) Proposed Rates, Schedule DLG/PMN-1G-8  
(4) 6 month average seasonal COG adjusted for changes due to rate proposal

\* Assumes current 60% discount on distribution rates

000133

Northern Utilities - NH Division  
Residential Non-Heating Customer - R6  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Present Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	0.53	\$22.01	\$22.12	\$0.11	0.5%
30.0%	2.32	\$24.20	\$24.70	\$0.50	2.1%
40.0%	5.40	\$27.97	\$29.12	\$1.16	4.1%
50.0%	9.21	\$32.63	\$34.60	\$1.98	6.1%
60.0%	12.75	\$36.97	\$39.70	\$2.74	7.4%
70.0%	16.55	\$41.61	\$45.17	\$3.55	8.5%
80.0%	21.45	\$47.61	\$52.21	\$4.60	9.7%
90.0%	30.58	\$58.79	\$65.35	\$6.56	11.2%
100.0%	74.59	\$112.64	\$128.64	\$16.00	14.2%
Average	17.34	\$42.58	\$46.30	\$3.72	8.7%
<u>Distribution Only</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	0.53	\$21.58	\$21.69	\$0.11	0.5%
30.0%	2.32	\$22.34	\$22.81	\$0.47	2.1%
40.0%	5.40	\$23.63	\$24.72	\$1.09	4.6%
50.0%	9.21	\$25.24	\$27.09	\$1.85	7.3%
60.0%	12.75	\$26.73	\$29.30	\$2.57	9.6%
70.0%	16.55	\$28.33	\$31.67	\$3.33	11.8%
80.0%	21.45	\$30.40	\$34.72	\$4.32	14.2%
90.0%	30.58	\$34.25	\$40.40	\$6.16	18.0%
100.0%	74.59	\$52.79	\$67.80	\$15.01	28.4%
Average	17.34	\$28.67	\$32.16	\$3.49	12.2%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$21.36 (1)	Customer Charge (\$/customer)		\$21.36 (3)
Distribution Charge - First 10 therms (\$/thm)		\$0.4214 (1)	Distribution Charge - First 10 therms (\$/thm)		\$0.6227 (3)
Distribution Charge - Excess 10 therms (\$/thm)		\$0.4214 (1)	Distribution Charge - Excess 10 therms (\$/thm)		\$0.6227 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.7535 (2)	COG (\$/thm)		\$0.7568 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000134

Northern Utilities - NH Division  
Residential Non-Heating Customer - R6  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Present Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	0.84	\$22.08	\$22.26	\$0.18	0.8%
30.0%	2.36	\$23.37	\$23.88	\$0.51	2.2%
40.0%	4.47	\$25.18	\$26.14	\$0.96	3.8%
50.0%	6.84	\$27.21	\$28.68	\$1.47	5.4%
60.0%	8.97	\$29.04	\$30.96	\$1.93	6.6%
70.0%	11.19	\$30.93	\$33.33	\$2.40	7.8%
80.0%	13.87	\$33.22	\$36.20	\$2.98	9.0%
90.0%	18.00	\$36.76	\$40.62	\$3.86	10.5%
100.0%	36.07	\$52.21	\$59.95	\$7.74	14.8%
Average	10.26	\$30.14	\$32.34	\$2.20	7.3%
<u>Distribution Only</u>					
10.0%	0.00	\$21.36	\$21.36	\$0.00	0.0%
20.0%	0.84	\$21.71	\$21.88	\$0.17	0.8%
30.0%	2.36	\$22.35	\$22.83	\$0.47	2.1%
40.0%	4.47	\$23.24	\$24.14	\$0.90	3.9%
50.0%	6.84	\$24.24	\$25.62	\$1.38	5.7%
60.0%	8.97	\$25.14	\$26.95	\$1.81	7.2%
70.0%	11.19	\$26.08	\$28.33	\$2.25	8.6%
80.0%	13.87	\$27.20	\$30.00	\$2.79	10.3%
90.0%	18.00	\$28.95	\$32.57	\$3.62	12.5%
100.0%	36.07	\$36.56	\$43.82	\$7.26	19.9%
Average	10.26	\$25.68	\$27.75	\$2.07	8.0%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$21.36 (1)	Customer Charge (\$/customer)		\$21.36 (3)
Distribution Charge - First 10 therms (\$/thm)		\$0.4214 (1)	Distribution Charge - First 10 therms (\$/thm)		\$0.6227 (3)
Distribution Charge - Excess 10 therms (\$/thm)		\$0.4214 (1)	Distribution Charge - Excess 10 therms (\$/thm)		\$0.6227 (3)
LDAC (\$/thm)		\$0.0489 (1)	LDAC (\$/thm)		\$0.0589 (1)
COG (\$/thm)		\$0.3850 (2)	COG (\$/thm)		\$0.3883 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000135

Northern Utilities - NH Division  
General Service - Low Annual, High Winter Use - G40  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	4.43	\$71.70	\$76.61	\$4.92	6.9%
20.0%	27.64	\$93.94	\$99.41	\$5.47	5.8%
30.0%	54.57	\$119.75	\$125.86	\$6.11	5.1%
40.0%	86.90	\$150.73	\$157.62	\$6.88	4.6%
50.0%	126.77	\$188.95	\$196.79	\$7.84	4.1%
60.0%	177.28	\$237.36	\$246.40	\$9.04	3.8%
70.0%	245.10	\$302.36	\$313.02	\$10.66	3.5%
80.0%	338.06	\$391.45	\$404.33	\$12.88	3.3%
90.0%	484.85	\$532.13	\$548.52	\$16.39	3.1%
100.0%	923.90	\$952.93	\$979.80	\$26.87	2.8%
Average	246.95	\$304.13	\$314.84	\$10.71	3.5%
<u>Distribution Only</u>					
10.0%	4.43	\$68.17	\$73.06	\$4.89	7.2%
20.0%	27.64	\$71.91	\$77.22	\$5.31	7.4%
30.0%	54.57	\$76.26	\$82.05	\$5.79	7.6%
40.0%	86.90	\$81.48	\$87.86	\$6.37	7.8%
50.0%	126.77	\$87.92	\$95.02	\$7.09	8.1%
60.0%	177.28	\$96.08	\$104.08	\$8.00	8.3%
70.0%	245.10	\$107.03	\$116.26	\$9.22	8.6%
80.0%	338.06	\$122.05	\$132.94	\$10.90	8.9%
90.0%	484.85	\$145.75	\$159.29	\$13.54	9.3%
100.0%	923.90	\$216.66	\$238.10	\$21.44	9.9%
Average	246.95	\$107.33	\$116.59	\$9.26	8.6%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$67.45 (1)	Customer Charge (\$/customer)		\$72.26 (3)
Distribution Charge - First 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - First 75 therms (\$/thm)		\$0.1795 (3)
Distribution Charge - Excess 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - Excess 75 therms (\$/thm)		\$0.1795 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.7673 (2)	COG (\$/thm)		\$0.7706 (4)

(1) Current seasonal rates  
(2) 6 month average seasonal COG  
(3) Proposed Rates, Schedule DLG/PMN-1G-8  
(4) 6 month average seasonal COG adjusted for changes due to rate proposal

000136

Northern Utilities - NH Division  
General Service - Low Annual, High Winter Use - G40  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
20.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
30.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
40.0%	1.16	\$68.17	\$73.00	\$4.84	7.1%
50.0%	5.41	\$70.80	\$75.74	\$4.94	7.0%
60.0%	11.70	\$74.68	\$79.77	\$5.09	6.8%
70.0%	23.50	\$81.98	\$87.35	\$5.37	6.6%
80.0%	45.46	\$95.55	\$101.45	\$5.90	6.2%
90.0%	87.78	\$121.72	\$128.62	\$6.91	5.7%
100.0%	249.91	\$221.95	\$232.72	\$10.78	4.9%
Average	42.49	\$93.72	\$99.54	\$5.82	6.2%
<u>Distribution Only</u>					
10.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
20.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
30.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
40.0%	1.16	\$67.64	\$72.47	\$4.83	7.1%
50.0%	5.41	\$68.32	\$73.23	\$4.91	7.2%
60.0%	11.70	\$69.34	\$74.36	\$5.02	7.2%
70.0%	23.50	\$71.25	\$76.48	\$5.23	7.3%
80.0%	45.46	\$74.79	\$80.42	\$5.63	7.5%
90.0%	87.78	\$81.63	\$88.02	\$6.39	7.8%
100.0%	249.91	\$107.81	\$117.12	\$9.31	8.6%
Average	42.49	\$74.31	\$79.89	\$5.57	7.5%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$67.45 (1)	Customer Charge (\$/customer)		\$72.26 (3)
Distribution Charge - First 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - First 75 therms (\$/thm)		\$0.1795 (3)
Distribution Charge - Excess 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - Excess 75 therms (\$/thm)		\$0.1795 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.4271 (2)	COG (\$/thm)		\$0.4304 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000137

Northern Utilities - NH Division  
General Service - Low Annual, Low Winter Use - G50  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
20.0%	2.72	\$69.81	\$74.69	\$4.87	7.0%
30.0%	9.58	\$75.78	\$80.82	\$5.04	6.6%
40.0%	23.28	\$87.68	\$93.05	\$5.37	6.1%
50.0%	47.61	\$108.82	\$114.77	\$5.95	5.5%
60.0%	91.23	\$146.72	\$153.71	\$6.99	4.8%
70.0%	172.70	\$217.51	\$226.44	\$8.93	4.1%
80.0%	300.72	\$328.75	\$340.74	\$11.99	3.6%
90.0%	456.81	\$464.38	\$480.10	\$15.72	3.4%
100.0%	769.53	\$736.10	\$759.29	\$23.18	3.1%
Average	187.42	\$230.30	\$239.59	\$9.29	4.0%
<u>Distribution Only</u>					
10.0%	0.00	\$67.45	\$72.26	\$4.81	7.1%
20.0%	2.72	\$67.89	\$72.75	\$4.86	7.2%
30.0%	9.58	\$69.00	\$73.98	\$4.98	7.2%
40.0%	23.28	\$71.21	\$76.44	\$5.23	7.3%
50.0%	47.61	\$75.14	\$80.81	\$5.67	7.5%
60.0%	91.23	\$82.18	\$88.63	\$6.45	7.9%
70.0%	172.70	\$95.34	\$103.26	\$7.92	8.3%
80.0%	300.72	\$116.02	\$126.24	\$10.22	8.8%
90.0%	456.81	\$141.22	\$154.26	\$13.03	9.2%
100.0%	769.53	\$191.73	\$210.39	\$18.66	9.7%
Average	187.42	\$97.72	\$105.90	\$8.18	8.4%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$67.45 (1)	Customer Charge (\$/customer)		\$72.26 (3)
Distribution Charge - First 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - First 75 therms (\$/thm)		\$0.1795 (3)
Distribution Charge - Excess 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - Excess 75 therms (\$/thm)		\$0.1795 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.6778 (2)	COG (\$/thm)		\$0.6811 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000138

Northern Utilities - NH Division  
General Service - Low Annual, Low Winter Use - G50  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.07	\$67.49	\$72.30	\$4.81	7.1%
20.0%	2.86	\$68.99	\$73.87	\$4.88	7.1%
30.0%	8.24	\$71.88	\$76.89	\$5.01	7.0%
40.0%	17.63	\$76.94	\$82.17	\$5.23	6.8%
50.0%	35.77	\$86.69	\$92.36	\$5.66	6.5%
60.0%	71.14	\$105.72	\$112.23	\$6.51	6.2%
70.0%	142.62	\$144.18	\$152.40	\$8.22	5.7%
80.0%	247.68	\$200.70	\$211.43	\$10.72	5.3%
90.0%	372.16	\$267.68	\$281.37	\$13.70	5.1%
100.0%	611.33	\$396.36	\$415.76	\$19.41	4.9%
Average	150.95	\$148.66	\$157.08	\$8.41	5.7%
<u>Distribution Only</u>					
10.0%	0.07	\$67.46	\$72.27	\$4.81	7.1%
20.0%	2.86	\$67.91	\$72.77	\$4.86	7.2%
30.0%	8.24	\$68.78	\$73.74	\$4.96	7.2%
40.0%	17.63	\$70.30	\$75.42	\$5.13	7.3%
50.0%	35.77	\$73.23	\$78.68	\$5.45	7.4%
60.0%	71.14	\$78.94	\$85.03	\$6.09	7.7%
70.0%	142.62	\$90.48	\$97.86	\$7.38	8.2%
80.0%	247.68	\$107.45	\$116.72	\$9.27	8.6%
90.0%	372.16	\$127.55	\$139.06	\$11.51	9.0%
100.0%	611.33	\$166.18	\$181.99	\$15.81	9.5%
Average	150.95	\$91.83	\$99.36	\$7.53	8.2%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$67.45 (1)	Customer Charge (\$/customer)		\$72.26 (3)
Distribution Charge - First 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - First 75 therms (\$/thm)		\$0.1795 (3)
Distribution Charge - Excess 75 therms (\$/thm)		\$0.1615 (1)	Distribution Charge - Excess 75 therms (\$/thm)		\$0.1795 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.3469 (2)	COG (\$/thm)		\$0.3502 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000139

Northern Utilities - NH Division  
General Service - Medium Annual, High Winter Use - G41  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	310.17	\$508.98	\$535.65	\$26.67	5.2%
20.0%	818.65	\$1,020.88	\$1,062.54	\$41.66	4.1%
30.0%	1,089.68	\$1,293.73	\$1,343.38	\$49.65	3.8%
40.0%	1,314.59	\$1,520.15	\$1,576.43	\$56.28	3.7%
50.0%	1,553.42	\$1,760.59	\$1,823.91	\$63.32	3.6%
60.0%	1,858.38	\$2,067.59	\$2,139.90	\$72.31	3.5%
70.0%	2,313.08	\$2,525.34	\$2,611.06	\$85.71	3.4%
80.0%	3,035.26	\$3,252.38	\$3,359.38	\$107.00	3.3%
90.0%	4,276.44	\$4,501.90	\$4,645.49	\$143.59	3.2%
100.0%	7,338.99	\$7,585.01	\$7,818.88	\$233.87	3.1%
Average	2,390.87	\$2,603.65	\$2,691.66	\$88.01	3.4%

<u>Distribution Only</u>					
10.0%	310.17	\$261.80	\$286.65	\$24.85	9.5%
20.0%	818.65	\$368.48	\$405.33	\$36.85	10.0%
30.0%	1,089.68	\$425.34	\$468.59	\$43.25	10.2%
40.0%	1,314.59	\$472.53	\$521.08	\$48.55	10.3%
50.0%	1,553.42	\$522.64	\$576.83	\$54.19	10.4%
60.0%	1,858.38	\$586.62	\$648.00	\$61.39	10.5%
70.0%	2,313.08	\$682.01	\$754.13	\$72.12	10.6%
80.0%	3,035.26	\$833.53	\$922.69	\$89.16	10.7%
90.0%	4,276.44	\$1,093.93	\$1,212.38	\$118.45	10.8%
100.0%	7,338.99	\$1,736.45	\$1,927.18	\$190.73	11.0%
Average	2,390.87	\$698.33	\$772.29	\$73.95	10.6%

Present Rates

Customer Charge (\$/customer)	\$196.73 (1)
Distribution Charge - All therms (\$/thm)	\$0.2098 (1)
LDAC (\$/thm)	\$0.0296 (2)
COG (\$/thm)	\$0.7673 (2)

Proposed Rates

Customer Charge (\$/customer)	\$214.26 (3)
Distribution Charge - All therms (\$/thm)	\$0.2334 (3)
LDAC (\$/thm)	\$0.0322 (4)
COG (\$/thm)	\$0.7706 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000140

Northern Utilities - NH Division  
General Service - Medium Annual, High Winter Use - G41  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	0.00	\$196.73	\$214.26	\$17.53	8.9%
20.0%	5.88	\$200.37	\$218.05	\$17.68	8.8%
30.0%	39.86	\$221.40	\$239.97	\$18.57	8.4%
40.0%	119.15	\$270.47	\$291.11	\$20.64	7.6%
50.0%	230.97	\$339.67	\$363.23	\$23.55	6.9%
60.0%	364.21	\$422.14	\$449.16	\$27.03	6.4%
70.0%	509.61	\$512.13	\$542.95	\$30.82	6.0%
80.0%	719.54	\$642.06	\$678.35	\$36.29	5.7%
90.0%	1,106.64	\$881.63	\$928.02	\$46.39	5.3%
100.0%	2,524.27	\$1,759.00	\$1,842.36	\$83.36	4.7%
Average	562.01	\$544.56	\$576.75	\$32.19	5.9%
<u>Distribution Only</u>					
10.0%	0.00	\$196.73	\$214.26	\$17.53	8.9%
20.0%	5.88	\$197.68	\$215.33	\$17.65	8.9%
30.0%	39.86	\$203.20	\$221.53	\$18.34	9.0%
40.0%	119.15	\$216.06	\$235.99	\$19.94	9.2%
50.0%	230.97	\$234.19	\$256.39	\$22.20	9.5%
60.0%	364.21	\$255.80	\$280.69	\$24.89	9.7%
70.0%	509.61	\$279.39	\$307.21	\$27.82	10.0%
80.0%	719.54	\$313.44	\$345.50	\$32.06	10.2%
90.0%	1,106.64	\$376.23	\$416.11	\$39.88	10.6%
100.0%	2,524.27	\$606.17	\$674.69	\$68.52	11.3%
Average	562.01	\$287.89	\$316.77	\$28.88	10.0%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$196.73 (1)	Customer Charge (\$/customer)		\$214.26 (3)
Distribution Charge - All therms (\$/thm)		\$0.1622 (1)	Distribution Charge - All therms (\$/thm)		\$0.1824 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.4271 (2)	COG (\$/thm)		\$0.4304 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000141

Northern Utilities - NH Division  
General Service - Medium Annual, Low Winter Use - G51  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	335.07	\$484.70	\$508.48	\$23.79	4.9%
20.0%	725.69	\$820.40	\$851.49	\$31.08	3.8%
30.0%	853.10	\$929.90	\$963.36	\$33.46	3.6%
40.0%	971.90	\$1,031.99	\$1,067.68	\$35.68	3.5%
50.0%	1,107.19	\$1,148.26	\$1,186.47	\$38.21	3.3%
60.0%	1,275.87	\$1,293.23	\$1,334.59	\$41.36	3.2%
70.0%	1,495.24	\$1,476.26	\$1,521.33	\$45.07	3.1%
80.0%	1,899.30	\$1,812.12	\$1,863.92	\$51.81	2.9%
90.0%	2,635.60	\$2,424.15	\$2,488.23	\$64.09	2.6%
100.0%	5,025.23	\$4,410.45	\$4,514.39	\$103.94	2.4%
Average	1,632.42	\$1,590.28	\$1,637.64	\$47.36	3.0%
<u>Distribution Only</u>					
10.0%	335.07	\$247.66	\$269.48	\$21.82	8.8%
20.0%	725.69	\$307.04	\$333.85	\$26.82	8.7%
30.0%	853.10	\$326.40	\$354.85	\$28.45	8.7%
40.0%	971.90	\$344.46	\$374.43	\$29.97	8.7%
50.0%	1,107.19	\$365.02	\$396.72	\$31.70	8.7%
60.0%	1,275.87	\$390.66	\$424.52	\$33.86	8.7%
70.0%	1,495.24	\$418.50	\$454.78	\$36.28	8.7%
80.0%	1,899.30	\$468.52	\$509.17	\$40.64	8.7%
90.0%	2,635.60	\$559.68	\$608.27	\$48.59	8.7%
100.0%	5,025.23	\$855.51	\$929.92	\$74.40	8.7%
Average	1,632.42	\$435.48	\$473.24	\$37.76	8.7%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$196.73 (1)	Customer Charge (\$/customer)		\$214.26 (3)
Distribution Charge - First 1,300 therms (\$/thm)		\$0.1520 (1)	Distribution Charge - First 1,300 therms (\$/thm)		\$0.1648 (3)
Distribution Charge - Excess 1,300 therms (\$/thm)		\$0.1238 (1)	Distribution Charge - Excess 1,300 therms (\$/thm)		\$0.1346 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.6778 (2)	COG (\$/thm)		\$0.6811 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000142

Northern Utilities - NH Division  
General Service - Medium Annual, Low Winter Use - G51  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	164.90	\$278.32	\$298.54	\$20.21	7.3%
20.0%	521.45	\$454.75	\$480.77	\$26.02	5.7%
30.0%	628.41	\$507.68	\$535.44	\$27.76	5.5%
40.0%	721.26	\$553.62	\$582.89	\$29.27	5.3%
50.0%	808.31	\$596.70	\$627.38	\$30.69	5.1%
60.0%	930.76	\$657.29	\$689.97	\$32.68	5.0%
70.0%	1,113.81	\$745.30	\$780.78	\$35.48	4.8%
80.0%	1,362.49	\$862.76	\$901.89	\$39.13	4.5%
90.0%	1,768.95	\$1,054.73	\$1,099.83	\$45.09	4.3%
100.0%	3,649.96	\$1,943.17	\$2,015.87	\$72.70	3.7%
Average	1,167.03	\$770.44	\$806.70	\$36.26	4.7%
<u>Distribution Only</u>					
10.0%	164.90	\$216.24	\$235.48	\$19.24	8.9%
20.0%	521.45	\$258.42	\$281.37	\$22.95	8.9%
30.0%	628.41	\$271.07	\$295.14	\$24.07	8.9%
40.0%	721.26	\$282.05	\$307.09	\$25.03	8.9%
50.0%	808.31	\$292.35	\$318.29	\$25.94	8.9%
60.0%	930.76	\$306.84	\$334.05	\$27.21	8.9%
70.0%	1,113.81	\$325.93	\$354.86	\$28.93	8.9%
80.0%	1,362.49	\$349.76	\$380.88	\$31.12	8.9%
90.0%	1,768.95	\$388.70	\$423.39	\$34.70	8.9%
100.0%	3,649.96	\$568.90	\$620.15	\$51.25	9.0%
Average	1,167.03	\$331.03	\$360.43	\$29.40	8.9%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$196.73 (1)	Customer Charge (\$/customer)		\$214.26 (3)
Distribution Charge - First 1,000 therms (\$/thm)		\$0.1183 (1)	Distribution Charge - First 1,000 therms (\$/thm)		\$0.1287 (3)
Distribution Charge - Excess 1,000 therms (\$/thm)		\$0.0958 (1)	Distribution Charge - Excess 1,000 therms (\$/thm)		\$0.1046 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.3469 (2)	COG (\$/thm)		\$0.3502 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000143

Northern Utilities - NH Division  
General Service - High Annual, High Winter Use - G42  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
9.8%	3,268.24	\$4,305.22	\$4,533.18	\$227.96	5.3%
20.1%	7,419.74	\$8,345.94	\$8,658.50	\$312.56	3.7%
29.9%	9,222.99	\$10,101.08	\$10,450.39	\$349.30	3.5%
40.2%	10,830.36	\$11,665.56	\$12,047.62	\$382.06	3.3%
50.0%	12,077.18	\$12,879.11	\$13,286.58	\$407.47	3.2%
59.8%	14,047.99	\$14,797.33	\$15,244.96	\$447.63	3.0%
70.1%	16,354.75	\$17,042.54	\$17,537.17	\$494.63	2.9%
79.9%	18,890.81	\$19,510.93	\$20,057.25	\$546.31	2.8%
90.2%	24,097.25	\$24,578.45	\$25,230.86	\$652.41	2.7%
100.0%	98,242.53	\$96,745.28	\$98,908.61	\$2,163.33	2.2%
Average	21,445.18	\$21,997.14	\$22,595.51	\$598.37	2.7%
<u>Distribution Only</u>					
9.8%	3,268.24	\$1,700.71	\$1,909.46	\$208.75	12.3%
20.1%	7,419.74	\$2,433.03	\$2,701.98	\$268.95	11.1%
29.9%	9,222.99	\$2,751.13	\$3,046.22	\$295.09	10.7%
40.2%	10,830.36	\$3,034.67	\$3,353.07	\$318.40	10.5%
50.0%	12,077.18	\$3,254.60	\$3,591.08	\$336.48	10.3%
59.8%	14,047.99	\$3,602.25	\$3,967.31	\$365.06	10.1%
70.1%	16,354.75	\$4,009.17	\$4,407.67	\$398.50	9.9%
79.9%	18,890.81	\$4,456.53	\$4,891.81	\$435.28	9.8%
90.2%	24,097.25	\$5,374.95	\$5,885.72	\$510.77	9.5%
100.0%	98,242.53	\$18,454.17	\$20,040.05	\$1,585.88	8.6%
Average	21,445.18	\$4,907.12	\$5,379.44	\$472.32	9.6%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$1,124.19 (1)	Customer Charge (\$/customer)		\$1,285.55 (3)
Distribution Charge - All therms (\$/thm)		\$0.1764 (1)	Distribution Charge - All therms (\$/thm)		\$0.1909 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.7673 (2)	COG (\$/thm)		\$0.7706 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000144

Northern Utilities - NH Division  
General Service - High Annual, High Winter Use - G42  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
10.0%	194.84	\$1,233.94	\$1,398.30	\$164.36	13.3%
20.1%	466.60	\$1,387.03	\$1,555.56	\$168.54	12.2%
30.1%	1,161.76	\$1,778.61	\$1,957.84	\$179.23	10.1%
40.2%	2,092.77	\$2,303.05	\$2,496.59	\$193.54	8.4%
50.2%	3,103.77	\$2,872.54	\$3,081.63	\$209.09	7.3%
59.8%	3,754.37	\$3,239.03	\$3,458.12	\$219.09	6.8%
69.9%	4,661.49	\$3,750.01	\$3,983.05	\$233.04	6.2%
79.9%	6,258.51	\$4,649.61	\$4,907.21	\$257.60	5.5%
90.0%	8,711.55	\$6,031.41	\$6,326.73	\$295.33	4.9%
100.0%	42,931.93	\$25,307.75	\$26,129.31	\$821.56	3.2%
Average	7,333.76	\$5,255.30	\$5,529.43	\$274.14	5.2%
<u>Distribution Only</u>					
10.0%	194.84	\$1,144.96	\$1,308.17	\$163.21	14.3%
20.1%	466.60	\$1,173.93	\$1,339.72	\$165.79	14.1%
30.1%	1,161.76	\$1,248.03	\$1,420.43	\$172.40	13.8%
40.2%	2,092.77	\$1,347.28	\$1,528.52	\$181.24	13.5%
50.2%	3,103.77	\$1,455.05	\$1,645.90	\$190.85	13.1%
59.8%	3,754.37	\$1,524.41	\$1,721.43	\$197.03	12.9%
69.9%	4,661.49	\$1,621.10	\$1,826.75	\$205.64	12.7%
79.9%	6,258.51	\$1,791.35	\$2,012.16	\$220.82	12.3%
90.0%	8,711.55	\$2,052.84	\$2,296.96	\$244.12	11.9%
100.0%	42,931.93	\$5,700.73	\$6,269.95	\$569.21	10.0%
Average	7,333.76	\$1,905.97	\$2,137.00	\$231.03	12.1%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$1,124.19 (1)	Customer Charge (\$/customer)		\$1,285.55 (3)
Distribution Charge - All therms (\$/thm)		\$0.1066 (1)	Distribution Charge - All therms (\$/thm)		\$0.1161 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.4271 (2)	COG (\$/thm)		\$0.4304 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000145

Northern Utilities - NH Division  
General Service - High Annual, Low Winter Use - G52  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Winter

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
9.8%	3,102.47	\$3,797.02	\$4,011.98	\$214.96	5.7%
20.1%	9,768.47	\$9,539.89	\$9,870.02	\$330.14	3.5%
29.9%	14,676.19	\$13,767.97	\$14,182.90	\$414.93	3.0%
40.2%	20,424.77	\$18,720.47	\$19,234.72	\$514.26	2.7%
50.0%	24,742.79	\$22,440.52	\$23,029.38	\$588.86	2.6%
59.8%	35,960.92	\$32,105.12	\$32,887.81	\$782.69	2.4%
70.1%	46,755.90	\$41,405.18	\$42,374.38	\$969.20	2.3%
79.9%	54,331.66	\$47,931.82	\$49,031.92	\$1,100.10	2.3%
90.2%	69,522.58	\$61,019.05	\$62,381.61	\$1,362.56	2.2%
100.0%	191,929.38	\$166,474.55	\$169,952.04	\$3,477.49	2.1%
Average	47,121.51	\$41,720.16	\$42,695.68	\$975.52	2.3%
<u>Distribution Only</u>					
9.8%	3,102.47	\$1,602.28	\$1,799.01	\$196.73	12.3%
20.1%	9,768.47	\$2,629.51	\$2,902.23	\$272.72	10.4%
29.9%	14,676.19	\$3,385.79	\$3,714.46	\$328.67	9.7%
40.2%	20,424.77	\$4,271.65	\$4,665.85	\$394.20	9.2%
50.0%	24,742.79	\$4,937.05	\$5,380.48	\$443.43	9.0%
59.8%	35,960.92	\$6,665.77	\$7,237.08	\$571.31	8.6%
70.1%	46,755.90	\$8,329.27	\$9,023.65	\$694.38	8.3%
79.9%	54,331.66	\$9,496.70	\$10,277.44	\$780.74	8.2%
90.2%	69,522.58	\$11,837.62	\$12,791.54	\$953.92	8.1%
100.0%	191,929.38	\$30,700.51	\$33,049.86	\$2,349.35	7.7%
Average	47,121.51	\$8,385.62	\$9,084.16	\$698.55	8.3%
<u>Present Rates</u>			<u>Proposed Rates</u>		
Customer Charge (\$/customer)		\$1,124.19 (1)	Customer Charge (\$/customer)		\$1,285.55 (3)
Distribution Charge - All therms (\$/thm)		\$0.1541 (1)	Distribution Charge - All therms (\$/thm)		\$0.1655 (3)
LDAC (\$/thm)		\$0.0296 (2)	LDAC (\$/thm)		\$0.0322 (4)
COG (\$/thm)		\$0.6778 (2)	COG (\$/thm)		\$0.6811 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

000146

Northern Utilities - NH Division  
General Service - High Annual, Low Winter Use - G52  
Proposed Rates with Step Adjustment versus Present Rates, as filed  
Summer

Cumulative Percentage of Bills	Average Monthly Usage (Therms)	Monthly Bills @ Present Rates	Monthly Bills @ Proposed Rates	\$ Difference	% Difference
<u>Delivery and Supply</u>					
9.9%	5,926.56	\$3,774.64	\$4,003.44	\$228.79	6.1%
19.8%	10,415.80	\$5,782.31	\$6,062.18	\$279.87	4.8%
30.2%	15,361.14	\$7,993.95	\$8,330.09	\$336.14	4.2%
40.1%	20,456.75	\$10,272.79	\$10,666.90	\$394.11	3.8%
50.0%	24,326.38	\$12,003.35	\$12,441.50	\$438.14	3.7%
59.9%	29,065.87	\$14,122.93	\$14,615.00	\$492.07	3.5%
69.8%	34,228.84	\$16,431.90	\$16,982.71	\$550.81	3.4%
80.2%	40,790.42	\$19,366.34	\$19,991.81	\$625.47	3.2%
90.1%	63,504.84	\$29,524.61	\$30,408.52	\$883.91	3.0%
100.0%	156,775.16	\$71,236.66	\$73,181.78	\$1,945.13	2.7%
Average	40,085.18	\$19,050.95	\$19,668.39	\$617.44	3.2%

<u>Distribution Only</u>					
9.9%	5,926.56	\$1,543.20	\$1,737.15	\$193.96	12.6%
19.8%	10,415.80	\$1,860.59	\$2,079.23	\$218.65	11.8%
30.2%	15,361.14	\$2,210.22	\$2,456.07	\$245.85	11.1%
40.1%	20,456.75	\$2,570.48	\$2,844.35	\$273.87	10.7%
50.0%	24,326.38	\$2,844.07	\$3,139.22	\$295.16	10.4%
59.9%	29,065.87	\$3,179.15	\$3,500.37	\$321.22	10.1%
69.8%	34,228.84	\$3,544.17	\$3,893.79	\$349.62	9.9%
80.2%	40,790.42	\$4,008.07	\$4,393.78	\$385.71	9.6%
90.1%	63,504.84	\$5,613.98	\$6,124.62	\$510.64	9.1%
100.0%	156,775.16	\$12,208.19	\$13,231.82	\$1,023.62	8.4%
Average	40,085.18	\$3,958.21	\$4,340.04	\$381.83	9.6%

Present Rates

Customer Charge (\$/customer)	\$1,124.19 (1)
Distribution Charge - All therms (\$/thm)	\$0.0707 (1)
LDAC (\$/thm)	\$0.0296 (2)
COG (\$/thm)	\$0.3469 (2)

Proposed Rates

Customer Charge (\$/customer)	\$1,285.55 (3)
Distribution Charge - All therms (\$/thm)	\$0.0762 (3)
LDAC (\$/thm)	\$0.0322 (4)
COG (\$/thm)	\$0.3502 (4)

- (1) Current seasonal rates
- (2) 6 month average seasonal COG
- (3) Proposed Rates, Schedule DLG/PMN-1G-8
- (4) 6 month average seasonal COG adjusted for changes due to rate proposal

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**NHPUC No. 12 – Gas**  
**Superseding NHPUC No. 11 - Gas**

**NORTHERN UTILITIES, INC.**

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Issued by:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX.XXX in Docket No. 17-070, dated April XX, 2018.

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President

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**I. SERVICE AREA**

The territory authorized to be served by the Company and to which this Tariff applies is as follows:

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham, and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

Limited areas of the towns so identified above are as shown on the maps filed separately with the Commission and incorporated in this Tariff by reference.

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Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX, in Docket No.17-070, dated April X, 2018.

## II. GENERAL TERMS AND CONDITIONS

### 1. General

The Company shall furnish service under its Tariff for Gas Supply and Delivery Service in the State of New Hampshire as approved from time to time by the New Hampshire Public Utilities Commission which shall govern all service except as specifically modified by written agreements. Copies of the currently effective Tariff for Gas Supply and Delivery Service in the State of New Hampshire are available at the office of the Company.

### 2. Definitions

When used herein the following terms shall have the meaning defined below:

**Btu:** One British thermal unit; i.e., the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at sixty degrees (60°) Fahrenheit.

**Commission:** New Hampshire Public Utilities Commission.

**Company:** Northern Utilities, Inc.

**Customer:** Any person, firm, partnership, corporation, cooperative marketing association, tenant, governmental unit, or a subdivision of a municipality, or the State of New Hampshire or other entity (a) who is currently purchasing as a Customer of record, or (b) whose application for service has been accepted, or (c) who is receiving the benefit of the use when no other party is, or has made application to be, a Customer.

**Delivery Service:** The distribution of Gas by the Company on any Gas Day from the Designated Receipt Point to the Customer's Delivery Point and related Customer services.

**Main Line:** The pipe(s) used by the Company for the distribution of gas other than the service line.

**Meter:** The device installed to measure the quantity of gas used.

**Sales Service:** Commodity service provided on a firm basis to a Customer who is not receiving Supplier Service, in accordance with the

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## II. GENERAL TERMS AND CONDITIONS

provisions set forth in this tariff. The provision of Sales Service shall be the responsibility of the Company and shall be provided to the Customer by the Company or its designated Supplier pursuant to law or regulation.

- Service:** The activity carried out by the Company to provide the use of vaporized combustible gas for the benefit of and requested by the Customer.
- Service Line:** All piping between the main tap and up to but not including the first valve or fitting of the meter or regulator setting.
- Supplier:** Any entity that has met the Company's requirements set forth in Part VII, Section 20 and that has been designated by a Customer to supply Gas to a Designated Receipt Point for the Customer's account; provided, however, that a Customer may act as its own Supplier in accordance with Part VII, Section 5.2 .
- Supplier Service:** The sale of Gas to a customer by a Supplier.
- Tariff:** The current schedules of rates, charges, terms and conditions filed by Northern Utilities and either approved by the Commission or effective by operation of law.
- Therm:** An amount of Gas having a thermal content of 100,000 Btus .

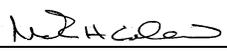
### 3. Service Classifications

- A. Residential Service (including Heating, Non-Heating and Low Income Heating) - a service supplied for residential purposes in a single family dwelling or building, or in an individual flat or apartment in a multiple family dwelling or building or portion thereof occupied as the home, residence, or dwelling place of one or more persons, including:
- i. A rooming house of less than six (6) rooms for rent.
  - ii. A structure used for commercial and residential purposes on the same premises where the commercial use in a ratio of square footage is less than fifty percent (50%) of the total square footage.

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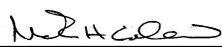
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## **II. GENERAL TERMS AND CONDITIONS**

- B. Commercial and Industrial Services - Services including the Sales and / or Delivery of natural gas supply provided to all commercial and industrial customers.
- i. Rate G-40 - A Customer receiving service under this schedule must have annual usage less than or equal to 8,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.
  - ii. Rate G-41 -A Customer receiving service under this schedule must have annual usage of greater than 8,000 therms but less than or equal to 80,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.
  - iii. Rate G-42 -A Customer receiving service under this schedule must have annual usage greater than 80,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.
  - iv. Rate G-50 -A Customer receiving service under this schedule must have annual usage less than or equal to 8,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.
  - v. Rate G-51 - A Customer receiving service under this schedule must have annual usage of greater than 8,000 therms but less than or equal to 80,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.
  - vi. Rate G-52 - A Customer receiving service under this schedule must have annual usage greater than 80,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.
- C. Service to Other Utilities - a service supplied to other privately owned utility companies, governmental agencies or utilities (municipal, county, state or federal), rural cooperatives, etc., for distribution and resale.
- D. Any other service classifications or contracts that may be approved by the Commission from time to time.

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## **II. GENERAL TERMS AND CONDITIONS**

- (4) All industrial requirements not specified in (2), (3), (5) or (6).
- (5) Firm industrial requirements for boiler fuel use at less than 3,000 Mcf per day, but more than 1,500 Mcf per day, where alternate fuel capabilities can meet such requirements.
- (6) Firm industrial requirements for large volume (3,000 Mcf or more per day) boiler fuel use where alternate fuel capabilities can meet such requirements.

### D. Storage Injection

Within each category, storage injection required to meet the needs of higher priorities may be given preference over all other uses within that category.

### E. Penalty

For all unauthorized volumes of gas taken by a Customer, the Customer shall pay the Company a penalty of \$2.50 per therm for each therm taken. Such penalty shall be added to the regular rates in effect. The Company shall have the right, without obligation, to waive any penalty for unauthorized use of gas if on the day when the penalty was incurred deliveries to other of the Company's Customers were not adversely affected. Continued unauthorized use, at the sole discretion of the Company, may result in termination of service.

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### **III. LINE EXTENSIONS**

1. Original Installation and Extension

In areas in which operation by the Company is authorized, service and main extensions will be extended for new customers and/or system improvements will be undertaken for customer initiated load increases pursuant to the Company's Tariff, Rules and Regulations and will be subject to the results of a discounted cash flow ("DCF") (i.e., a Net Present Value ("NPV")) analysis.

The Company uses a DCF method to evaluate main and service line extensions. This method considers an estimate of the cost of capital expenditures associated with the proposed extension, an estimate of the net revenue (revenues exclusive of related gas costs recoveries) to be derived from the expected new customer(s), an estimate of the associated operation and maintenance expenses, depreciation and property and other taxes. These amounts are reflected on an annual basis and result in the annual cash flow (after-tax) associated with the proposed new main or service line extension. These annual cash flows are discounted (over ten (10) years for commercial and industrial service and twenty (20) years for residential service) to a present value at a rate representative of the Company's updated after-tax weighted cost of capital. If the NPV is zero or greater, then no contribution is required. However, if the NPV is negative, then the excess cost is required as a Contribution in Aid of Construction ("CIAC") by the Initial Customer(s).

Payment will be required in advance or in accordance with installment program provisions in effect at the time that the installment contract is signed.

For administrative efficiency the Company has a "Standard Offer Service" ("SOS") and will apply the SOS when a single new service is required for residential gas heating. The SOS provides for the installation of 100 feet of service pipe, under normal installation conditions as determined by the Company, from a gas main at no charge to serve residential heating loads.

For the installation of additional feet of service pipe, the Company will calculate annually the cost per additional foot from a gas main, under normal installation conditions as determined by the Company. The cost per additional foot above of the SOS offered will be calculated using the DCF method above. The inputs for calculating the cash flows will be the average net revenue derived from a typical residential heating rate class customer and an estimate of capital cost such that the NPV is zero. The estimate of capital cost will then be applied to determine the cost per additional foot of service pipe above the SOS.

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**III. LINE EXTENSIONS**

2. Subsequent Customer Contributions and Refunds

If during the period of five (5) years immediately following the date of construction completion, additional Customers or Subsequent Customers, whose gas use was not reflected in any previous computation or re-computation of the CIAC, are connected to an extension which was installed subject to a CIAC, the CIAC will be recomputed. Such re-computation will result in a refund of some or all of the CIAC to the Initial Customer(s) if such Subsequent Customer(s) produces a positive NPV. A refund will be made by the Company to the Customer(s) who made the original payment and who continue to be customers of the Company.

3. Easements

The Company shall not be required to construct extensions hereunder other than on public ways unless the prospective Customer shall provide without expense or cost to the Company, the necessary permits, consents or easements for a satisfactory right-of-way for the construction, maintenance and operation of the main.

4. Winter Construction

Ordinarily no new service pipes or main extensions are installed during winter conditions (when frost is in the ground) unless the Customer defrays the extra expenses.

5. Title

Title of all extensions constructed in accordance with the above shall be vested in the Company.

6. Reasonable Duration

Under none of the foregoing provisions will the Company be required to install service pipes or to construct main extensions where the business to be secured will not be of reasonable duration.

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#### **IV. COST OF GAS CHARGE**

##### **Section**

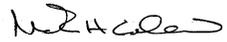
1. Purpose
2. Applicability
3. Cost of Firm Gas Allowable for Cost of Gas Charge (COGC)
4. Effective Date of COGC
5. Definitions
6. COGC Calculations by Customer Classification
7. Non-Core Sales Margins (“NCSM”)
8. Gas Suppliers' Refunds – FERC Account 242
9. Annual COGC Reconciliation Adjustment - Account 191
10. Bad Debt and Working Capital Reconciliation Adjustments – FERC Account 182
11. Application of COGC Factors to Bills
12. Information Required to be Filed with the NHPUC
13. Other Rules
14. Reconciliation Adjustment Accounts

##### 1. Purpose

The purpose of this clause is to establish procedures that allow the Company, subject to the jurisdiction of the New Hampshire Public Utilities Commission ("NHPUC"), to set on an annual basis seasonal firm gas supply Sales Service rates and to adjust these rates on a monthly basis.

The firm gas supply Sales Service rates recover the seasonal costs of gas supplies, any taxes applicable to those supplies, upstream pipeline and storage capacity costs, on-system production capacity and storage costs, miscellaneous overhead costs related to those supplies, bad debt expense associated with purchased gas costs, costs of purchased gas working capital, and any other costs approved by the NHPUC, and return the seasonal credits from supplier and pipeline refunds, non-core gas supply sales and transportation, interruptible gas supply sales and transportation, capacity assignment, capacity release, application of the Delivery-to-Sales Service Fee, and any other credits or revenue approved by the NHPUC 2.

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2. Applicability

This Cost of Gas Charge ("COGC") shall be applicable to all firm gas Supply Sales Service made by Northern, unless otherwise designated. Application of the COGC may, for good cause shown, be modified by the NHPUC. See Part IV, Section 13, "Other Rules."

3. Cost of Firm Gas Allowable for the COGC

All costs of firm gas supply including, but not limited to, commodity costs, taxes on commodity, demand charges, local production and storage costs, other gas supply expense incurred to procure and transport supplies, expense of the gas used in company operations, transportation fees, costs associated with buyouts of existing contracts, and bad debt expenses and purchased gas working capital may be included in the COGC. Any costs recovered through application of the COGC shall be identified and explained fully in the annual and monthly COGC filings outlined in Part IV, Section 12.

4. Effective Date of Cost of Gas Charges

The firm gas supply sales rates or COGCs shall be seasonal and become effective upon NHPUC approval for services rendered on the first day of each season as designated by the Company. Unless otherwise notified by the NHPUC, the Company shall submit its annual COGC filing as outlined in Part IV, Section 12 of this clause at least 45 days before taking effect on November 1<sup>st</sup>. The approved seasonal COGC may be adjusted by the Company on a monthly basis without further action by the NHPUC and shall become effective on the first day of the subsequent month. See Part IV, Section 13.

5. Definitions

The following terms shall be defined in this Section IV, unless the context requires otherwise.

- (1) **Bad Debt Expense** - The uncollectable expense attributed to the portion of the Company's charges associated with its gas costs.
- (2) **Capacity Assignment Revenue** – The revenue received from Suppliers for the mandatory assignment of capacity pursuant to the Company's Delivery Service Terms and Conditions.
- (3) **Capacity Release Revenue** - The revenue derived from the sale of upstream capacity, including the revenues resulting from the elective, short-term

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assignment of capacity.

- (4) **Carrying Charges** - Interest expense calculated on the average monthly COGC reconciliation balance and added to the end of month COGC reconciliation balance. The interest rate is to be adjusted each quarter using the prime interest rate as reported by the Wall Street Journal on the first date of the month preceding the first month of the quarter.
- (5) **Direct Gas Costs** - All purchased gas costs including supplier, storage and pipeline demand and commodity costs, as well as the commodity costs for production and storage gas (LP-air and LNG).
- (6) **Firm Sales Service Re-Entry Fee Revenues** The revenues resulting from billing certain customers who switched from firm transportation service to firm sales service after June 30, 2006.
- (7) **Indirect Gas Costs** – Bad Debt Expense, Working Capital Carrying Charges, COGC reconciliation balances, miscellaneous overhead costs, supplier and pipeline refunds, and local production and storage capacity costs.
- (8) **Interruptible Sales Margins** - The Economic Benefit derived from the interruptible sale of gas downstream of the Company's distribution system.
- (9) **Inventory Finance Charges** - As billed in each Winter Season for annual charges. The amount shall represent an accumulation of the projected charges as calculated using the monthly average of financed inventory at the Company's average short-term cost of borrowing for the month, or some other finance vehicle subject to the approval of the NHPUC.
- (10) **Modified PR Allocator** - The percentage allocated for the portion of annual capacity charges assigned to the Company's New Hampshire and Maine divisions calculated in each annual COGC filing using the Modified Proportional Responsibility ("PR") Method. The allocation percentages for Northern's New Hampshire and Maine divisions reflect the approval of the Modified PR Allocator by the NHPUC and Maine PUC in NHPUC Docket 05-080 and in MPUC Docket Nos. 2005-87 and 2005-273, respectively.
- (11) **Non-Core Commodity Revenues** - The commodity revenues associated with non-core sales to which the COGC is not applied. Non-core sales include sales made under interruptible contracts, non-core contracts and off-system sales contracts.
- (12) **Non-Core Demand Revenues** - The revenue derived from non-core transactions

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to which the COGC is not applied, including interruptible sales and other non-core sales generated from the use of the Company's gas supply resource portfolio.

- (13) **Off-System Sales Revenue** - The revenue derived from the non-firm sales of natural gas supplies upstream of Company's distribution system.
- (14) **Production and Storage Capacity Costs** - The costs of providing local, on-system storage service from the Company's storage facilities (i.e., LNG and LPG) as determined in the Company's most recent base rate proceeding.
- (15) **Purchased Gas Working Capital** - The allowable working capital derived from Winter and Summer Season demand and commodity related costs.
- (16) **Simplified Market Based Allocation (SMBA) method** – Used in determining the allocation of gas costs among the Company's High and Low load factor Commercial and Industrial Customer Classifications.
- (17) **Summer Commodity** - The gas supplies procured by the Company to serve firm sales load in the Summer Season.
- (18) **Summer Demand** - The gas supply demand and transmission capacity procured by the Company to serve firm sales load in the Summer Season.
- (19) **Summer Season** – The months May through October.
- (20) **Winter Commodity** - The gas supplies procured by the Company to serve firm sales load in the Winter Season.
- (21) **Winter Demand** – The gas supply demand, peaking demands, storage and transmission capacity procured by the Company to serve firm sales load in the Winter Season.
- (22) **Winter Season** – The months November through April.
- (23) **Working Capital Carrying Charge Rate**- the monthly prime interest rate, as reported by the Wall Street Journal on the first date of the month preceding the first month of the quarter.

#### 6. **COGC Calculations by Customer Classification**

##### 6.1 **Approved Cost Amounts**

The COGC calculations include costs and amounts periodically established by the

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NHPUC. The table below lists approved costs and amounts:

<b><u>VARIABLE</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>CURRENTLY APPROVED AMOUNTS</u></b>
MISC	Miscellaneous Overhead Costs	\$580,455
PS	Production and Storage Capacity Costs	\$476,106
WCA%	Working Capital Allowance Percentage	10.02 supply related net lag days / 365 days x WCCCR

**Where:** WCCCR=Working Capital Carrying Charge Rate

6.2 COGC Formulas

The COGC Formulas shall be computed on an annual basis for the Company’s three (3) groups of customer classes as shown in the table below. The computations will use forecasts of seasonal gas costs, carrying charges, sendout volumes, credits and sales volumes. Forecasts may be based on either historical data or Company projections, but must be weather-normalized. Any projections must be documented in full with each filing.

GROUP	CUSTOMER CLASSES
Residential	R-5, R-6 and R-10
Commercial and Industrial: Low Winter	G-50, G-51 and G-52
Commercial and Industrial: High Winter	G-40, G-41 and G-42

COGC will be calculated on a seasonal basis. The Winter Season COGC will be effective November 1<sup>st</sup> and Summer Season COG Factors will be effective on May 1<sup>st</sup>.

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The seasonal COGC for the Residential rate classes shall represent the total system average unit cost of gas for meeting firm sales load projected in each COGC season. The seasonal COGC for the Commercial and Industrial (“C&I”) Low Winter and High Winter classes shall be derived by using the load factor based SMBA method of allocating gas costs as defined in Part IV, Section 5, and shall include other costs and credits allowed by the NHPUC.

##### 6.3 Winter Season COGC

Winter Season COGC (COG<sub>w</sub>) shall be comprised of Winter Season direct costs of gas (DCOG<sub>w</sub>) which include Winter Season direct demand costs (DD<sub>w</sub>) and Winter Season commodity costs (C<sub>w</sub>), and Winter Season indirect costs (ICOG<sub>w</sub>) including Winter Season COGC reconciliation gas costs (R<sub>w</sub>), Winter Season working capital costs (WC<sub>w</sub>), Winter Season bad debt costs (BD<sub>w</sub>), production and storage capacity costs (PS), Winter Season miscellaneous overhead costs (MISC) and any supplier refunds allocated to the Winter Season (SR<sub>w</sub>) according to the following formulas:

$$\text{COG}_w = \text{DCOG}_w + \text{ICOG}_w$$

#### **Winter Direct Cost of Gas (DCOG<sub>w</sub>) and Indirect Cost of Gas (ICOG<sub>w</sub>) Formulas**

$$\text{DCOG}_w = \text{DD}_w + \text{C}_w$$

**and:**

$$\text{DD}_w = \text{DEM}_w - \text{NCDR}_w - \text{CAR}_w$$

**and:**

$$\text{ICOG}_w = \text{R}_w + \text{BD}_w + \text{WC}_w + \text{PS} + \text{MISC} * (\text{W:Sales} / \text{A:Sales}) + \text{SR}_w$$

**Where:**

A:Sales      Forecasted annual firm gas supply sales volumes.

BD<sub>w</sub>          Bad debt expense allocated to the Winter Season.

CAR<sub>w</sub>        Capacity assignment revenues, pursuant to the capacity assignment provisions in the Company’s Delivery Service Terms and Conditions, allocated to the Winter Season.

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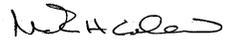
**IV. COST OF GAS CHARGE**

Cw	Commodity gas costs allowable for the Winter Season.
COGw	Total cost of gas for the Winter Season to serve the Company's firm sales customer classes previously defined.
DDw	Direct demand costs allowable for the Winter Season
DCOGw	Direct gas costs allowable for the Winter Season.
DEMw	Demand costs allocated to the Winter Season defined in Part IV, Section 5.
ICOGw	Indirect gas costs allowable for the Winter Season.
MISC	The amount of gas costs associated with acquisition, dispatching, Administrative and General expenses, and miscellaneous overhead costs as determined in the Company's most recent base rate proceeding. Refer to Part IV, Section 6.1 for this amount.
NCDRw	Winter Season returnable capacity release revenues and return to sales service revenues.
PS	The amount of costs associated with production and storage capacity, as determined in the Company's most recent rate proceeding, less any production and storage capacity assignment revenues. Refer to Part IV, Section 6.1 for this amount.
Rw	Annual reconciliation costs allocated to Winter Season from the Account 191 balance, inclusive of the associated Account 191 interest, as outlined in Part IV, Section 9.
SRw	Supplier demand and commodity related refunds assigned to the Winter Season associated with refund program credits derived from Account 242, "Undistributed Gas Suppliers' Refunds." See Part IV, Section 8.
WCw	Working capital carrying charges allocated to the Winter Season as defined in Part IV, Section 10.
W:Sales	Forecasted Winter Season firm gas supply sales volumes.

**Winter Commodity Cost (Cw) Formula**

$$Cw = WSC - NCCRw + FC$$

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**Where:**

- FC Annual inventory finance charges as defined in Part IV, Section 5.
- NCCRw Non-core commodity gas revenues incurred in the Winter Season as defined in Part IV, Section 5.
- WSC Commodity gas costs associated with gas supply dispatched to firm gas supply sales customers in the Winter Season.

**Winter Working Capital Carrying Charges (WCw) Formula**

$$WCw = (DCOGw) \times WCAw \% + Rwcw$$

**Where:**

- WCAw % Working capital allowance percentage associated with Winter Season gas costs. See Part IV, Section 6.1.
- Rwcw Working capital allowance reconciliation adjustment associated with Winter Season gas costs Account 173 balance, as outlined in Part IV, Section 10.

**Winter Bad Debt Cost (BDw) Formula**

$$BDw = EBDw + Rbdw$$

**Where:**

- EBDw Estimated bad debt expense for the Winter Season.
- Rbdw Bad debt expense reconciliation adjustment assigned to the Winter Season.

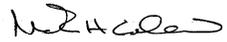
**Winter Supplier Refund (SRw) Formula**

$$SRw = (SRD + SRC) * (W:Sales / A:Sales)$$

**Where:**

- SRD Annualized supplier refund for demand related charges

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SRC Annualized supplier refund for commodity related charges

**Residential COGC Winter Season (COGFACTOR<sub>wr</sub>)**

All Residential firm sales customers will pay the same GOGC for the Winter Season. This COGC represents the total forecasted Winter Season average cost of gas. This COGC is calculated according to the following formula:

$$\text{COGFACTOR}_{wr} = \frac{\text{COG}_w}{W:\text{Sales}}$$

**Where:**

COGFACTOR<sub>wr</sub> Per unit Residential customer Winter Season COGC.

**Commercial and Industrial (C&I) Winter Season COGCs**

The C&I firm sales customer’s Winter Season COGCs will be based on the SMBA method of allocating direct gas costs to each of the two C&I firm sales load factor based customer groups Rates G-50, G-51 and G-52 which are High Load Factor or Low Winter Use and Rates G-40, G-41 and G-42 which are Low Load Factor or High Winter Use. In addition, the C&I COGCs will include a rate adjustment that allocates any difference between the Residential average cost of gas and the Residential COGC using the SMBA method. This difference is then added to the C&I firm sales customer classes COGC. Both C&I firm sales customer classes as well as the Residential customer class pay the Winter Season system average cost for indirect gas costs.

The formulas below pertain to Low Load Factor or High Winter Use C&I firm sales customers. The formulas determining COGC for High Load Factor or Low Winter Use C&I firm sales customers are not presented but are identical except for the subscripts: For High Load Factor or Low Winter Use C&I firm sales customers, all variables with a “wh” designation are replaced with a “wl” designation.

$$\text{COGFACTOR}_{wh} = \text{DCOG}_{wh} + \text{ICOG}_{wh}$$

**and**

$$\text{DCOG}_{wh} = \text{AD}_{wh} + \text{AC}_{wh}$$

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**and**

$$ADwh = \frac{DDwh + RRADwh}{WH:Sales}$$

**and**

$$ACwh = \frac{Cwh + RRACwh}{WH:Sales}$$

**and**

$$ICOGwh = ICOGw/W:Sales$$

**and**

$$RRADwh = (RDSMBA - RDAVG)*Dwh\%$$

**and**

$$RRACwh = (RCSMBA - RCAVG)*Cwh\%$$

**Where:**

ACwh Per unit Winter Season adjusted commodity costs associated with the High Winter Use C&I firm sales customers.

ADwh Per unit Winter Season adjusted direct demand costs allocated to the High Winter Use C&I firm sales customers.

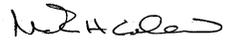
COGFACTORwh Per unit Winter Season COGC for G-40, G-41 and G-42 C&I rate classes.

Cwh Winter Season commodity costs associated with the High Winter Use C&I firm sales customers.

Cwh% Percent of C&I Winter Season commodity gas costs allocated to High Winter Use C&I firm sales customers.

DOCGwh Per unit direct cost of gas for the Winter Season for High Winter Use C&I firm sales customers.

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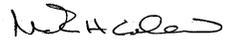
DDwh	Winter Season direct demand costs allocated to the High Winter Use C&I firm sales customer classes.
Dwh%	Percent of C&I Winter Season demand costs allocated to High Winter Use firm sales C&I firm sales customers.
ICOGw	As previously defined above.
ICOGwh	Per unit indirect cost of gas for the Winter Season for High Winter Use C&I firm sales customers.
RRADwh	Residential reallocation adjustment for Winter Season demand costs to High Winter Use C&I firm sales customers.
RRACwh	Residential reallocation adjustment for Winter Season commodity costs to High Winter Use C&I firm sales customers.
RDSMBA	Residential demand costs per the SMBA methodology.
RCSMBA	Residential commodity costs per the SMBA methodology.
RDAVG	Demand cost per average Residential rate.
RCAVG	Commodity cost per average Residential rate.
WH:Sales	Winter Season forecasted C&I High Winter Use firm sales volumes.

6.4 Summer Season COGC

Summer Season COGC costs shall be comprised of Summer Season direct costs of gas (DCOGs) which include Summer Season direct demand costs (DDs) and Summer Season commodity costs (Cs), and Summer Season indirect costs (IGOCs) including Summer Season reconciliation gas costs (Rs), Summer Season working capital costs (WCs), Summer Season bad debt costs (BDs), Summer Season miscellaneous overhead costs (MISC) and any supplier refunds allocated to the Summer Season (SRs) according to the following formulas:

$$\text{COGCs} = \text{DCOGs} + \text{ICOGs}$$

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**IV. COST OF GAS CHARGE**

**Summer Direct Cost of Gas (DCOGs) and Indirect Cost of Gas (ICOGs) Formulas**

$$\text{DCOGs} = \text{DDs} + \text{Cs}$$

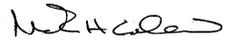
**And:**

$$\text{ICOGs} = \text{Rs} + \text{BDs} + \text{WCs} + \text{MISC} * (\text{S:Sales} / \text{A:Sales}) + \text{SRs}$$

**Where:**

- A:Sales      Forecasted annual firm gas supply sales volumes.
- BDs          Bad debt expense allocated to the Summer Season.
- Cs            Commodity gas costs allowable for the Summer Season.
- COGs        The total cost of gas for the Summer Season to serve the Company's firm sales customer classes previously defined.
- DDs          Direct demand costs allowable for the Summer Season.
- DCOGs       Direct gas costs allowable for the Summer Season.
- ICOGs       Indirect gas costs allowable for the Summer Season.
- MISC         The amount of gas costs associated with acquisition, dispatching, Administrative and General expenses, and miscellaneous overhead costs as determined in the Company's most recent base rate proceeding. Refer to Part IV, Section 6.1 for this amount.
- Rs            Annual reconciliation costs allocated to the Summer Season from the Account 191 balance, inclusive of the associated Account 191 interest, as outlined in Part IV, Section 9.
- SRs          Supplier demand and commodity related refunds assigned to the Summer Season associated with refund program credits derived from Account 242, "Undistributed Gas Suppliers' Refunds." See Part IV, Section 8.
- S:Sales      Forecasted Summer Season firm gas supply sales volumes.

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**IV. COST OF GAS CHARGE**

WCs Working capital carrying charges allocated to the Summer Season as defined in Part IV, Section 10.

**Summer Commodity Cost (Cs) Formula**

$$Cs = SSC - NCCRs$$

**Where:**

NCCRs Non-core commodity gas revenues incurred in the Summer Season as defined in Part IV, Section 5.

SSC Commodity gas cost charges associated with gas supply dispatched to firm gas supply sales customers in the summer season.

**Summer Working Capital Carrying Charges (WCs) Formula**

$$WCs = DCOGs \times WCAs\% + Rwcs$$

**Where:**

WCAs% Working capital allowance percentage associated with Summer Season gas costs. Refer to Part IV, Section 6.1.

Rwcs Working capital allowance reconciliation adjustment associated with the Summer Season gas costs, Account 173 balance, as outlined in Part IV, Section 10.

**Summer Bad Debt (BDs) Formula**

$$BDs = EBDs + Rbds$$

**Where:**

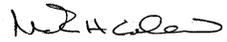
EBDs Estimated bad debt expense for the Summer Season.

Rbds Bad debt expense reconciliation adjustment assigned to the Summer Season.

**Summer Supplier Refund (SRw) Formula**

$$SRs = (SRD + SRC) * (S:Sales / A:Sales)$$

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**Where:**

SRD Annualized supplier refund for demand related charges

SRC Annualized supplier refund for commodity related charges

**Residential COGC Summer Season (COGFACTORsr)**

All Residential firm sales customers will pay the same COGC for the Summer Season. This COGC represents the total forecasted Summer Season average cost of gas rate. This factor is calculated according to the following formula:

$$\text{COGFACTORsr} = \frac{\text{COGs}}{\text{S:Sales}}$$

**Where:**

COGFACTORsr = Per unit Residential customer Summer Season COG Factor

**Commercial and Industrial (C&I) Summer Season COGC**

The C&I firm sales Summer Season COGC will be based on the SMBA method of allocating direct gas costs to each of the two C&I load factor based customer groups: Rates G-50, G-51 and G-52 which are High Load Factor or Low Winter Use and Rates G-40, G-41 and G-42 which are Low Load Factor or High Winter Use. In addition, the C&I COGCs will include a rate adjustment that allocates any difference between the Residential average cost of gas and the Residential COGC using the SMBA method. This difference is then added to the C&I firm sales customer classes COGC. Both C&I firm sales customer classes as well as the Residential customer classes pay the Summer Season system average cost for indirect costs.

The formulas below pertain to Low Load Factor or High Winter Use C&I firm sales customers. The formulas determining COG Factors for High Load Factor or Low Winter Use C&I firm sales customers are not presented but are identical except for the subscripts: For High Load Factor or Low Winter Use C&I firm sales customers, all variables with a “sh” designation would be replaced with a “sl” designation.

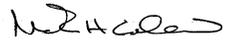
$$\text{COGFACTORsh} = \text{DCOGsh} + \text{ICOGsh}$$

**and**

$$\text{DCOGsh} = \text{ADsh} + \text{ACsh}$$

**and**

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$$\text{ADsh} = \frac{\text{DDsh} + \text{RRADsh}}{\text{SH:Sales}}$$

**and**

$$\text{ACsh} = \frac{\text{Csh} + \text{RRACsh}}{\text{SH:Sales}}$$

**and**

$$\text{ICOGsh} = \text{ICOGs/S:Sales}$$

**and**

$$\text{RRADsh} = (\text{RDSMBA} - \text{RDAVG}) * \text{Dsh}\%$$

**and**

$$\text{RRACsh} = (\text{RCSMBA} - \text{RCAVG}) * \text{Csh}\%$$

**Where:**

ACsh Per unit Summer Season adjusted commodity costs associated with the High Winter Use C&I firm sales customers.

ADsh Per unit Summer Season adjusted direct demand costs allocated to the High Winter Use C&I firm sales customers.

COGFACTORsh Per unit Summer Season COGC for G-40, G-41 and G-42 C&I rate classes.

Csh Summer Season commodity costs associated with the High Winter Use C&I firm sales customers.

Csh% Percent of C&I Summer Season commodity gas costs allocated to High Winter Use C&I firm sales customers.

DDsh Summer Season direct demand costs allocated to the High Winter Use C&I firm sales customer classes.

DOCGsh Per unit direct cost of gas for the Summer Season for High Winter Use C&I firm sales customers.

Dsh% Percent of C&I Summer Season demand costs allocated to High Winter Use C&I firm sales customers

ICOGs As previously defined above.

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ICOGsh	Per unit indirect cost of gas for the Summer Season for High Winter Use C&I firm sales customers.
RRADsh	Residential reallocation adjustment for Summer Season demand costs to High Winter Use C&I firm sales customers.
RRACsh	Residential reallocation adjustment for Summer Season commodity costs to High Winter Use C&I firm sales customers.
RDSMBA	Residential demand costs per the SMBA methodology.
RCSMBA	Residential commodity costs per the SMBA methodology.
RDAVG	Demand cost per average Residential rate
RCAVG	Commodity cost per average Residential rate
SH:Sales	Summer Season forecasted C&I High Winter Use firm sales volumes.

7. Non-Core Sales Demand and Commodity Revenues

One hundred percent (100%) of revenues from Interruptible Sales, Off-System Sales, and Capacity Release will be credited to firm sales customers within the derivation to COGC.

8. Gas Suppliers' Refunds – FERC Account 242

Refunds from upstream capacity suppliers and suppliers of product demand are credited to Account 242, "Undistributed Purchased Capacity/Product Demand Refunds." Refunds from suppliers of gas are credited to account 242, "Commodity Undistributed Gas Suppliers' Refunds." Transfers from these accounts will be reflected as a credit in the annual calculation of the seasonal COGC to be calculated as follows:

Refund programs shall be initiated with each annual COGC filing and shall remain in effect for a period of one year. The amount to be placed into a given refund program shall be net of over/under-balances from expired refund programs plus refunds received from suppliers since the previous program was initiated. Refunds shall be segregated by demand and commodity and distributed volumetrically, producing a per unit refund that will return the principal amount with interest applied to the average of the beginning and

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end of month balances of refunds. The interest rate is to be adjusted each quarter using the prime interest rate as reported by the Wall Street Journal on the first date of the month preceding the first month of the quarter . The Company shall track and report on all Account 242 activities as specified in Part IV, Section 12.

#### 9. **Annual COGC Reconciliation Adjustment – FERC Account 191**

(1) The following **definitions** pertain to the annual COGC reconciliation adjustment:

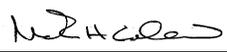
a. **Capacity Costs Allowable** shall be:

- i. Charges associated with upstream storage and transmission capacity and product demand procured by the Company to serve firm gas supply sales service.
- ii. Charges associated with peaking, downstream production and storage capacity to serve firm gas supply sales load, dispatching costs, and other administrative and general expenses in connection with purchasing gas supplies allocated to firm gas supply sales services in the respective season. These expenses are from the test year of the Company's most recent base rate proceeding, and are provided in Part IV, Section 6.1.
- iii. Non-Core Sales Margins or Economic Benefits associated with returnable capacity release, off-system sales and interruptible sales margins allocated to the firm gas supply sales service.
- iv. Credits associated with daily imbalance charges and the fixed component of penalty charges billed Delivery Service, as well as revenues associated with: (a) mandatory assignment of capacity to meet the requirements of firm transportation customers (non-grandfathered customers); (b) the billing of the Capacity Reservation Charge; and (c) the billing of the Delivery-to-Sales Service Fee to firm customers switching from transportation to firm gas supply sales service.
- v. Capacity Cost Carrying Charges.

b. **Commodity Gas Costs Allowable** shall be:

- i. Commodity Charges associated with gas supplies, including any applicable taxes, purchased by the Company to serve firm gas supply sales service.

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- ii. Credit for non-core commodity costs assigned to non-core customers to which the COGC does not apply, as defined in Part IV, Section 6.3 (NCCCw and NCCCs), as well as the commodity costs of all supplies nominated by third party Suppliers associated with the assignment of Company-Managed resources, as defined in the Company’s Delivery Service Terms and Conditions.
  - iii. Inventory finance charges.
  - iv. Commodity Cost Carrying Charges.
- (2) Allocation of the annual COGC Reconciliation Adjustment to the Summer Season (Rs) and Winter Season (Rw).

Account 191 contains the accumulated difference between actual COG Factor revenues and the actual monthly COGC costs incurred by the Company including Carrying Charges. The allocation of the annual COGC reconciliation ending balance to the Winter and Summer Seasons is derived by multiplying the ratio of each season’s firm gas supply sales service to annual firm gas supply sales service by the annual COGC reconciliation ending balance.

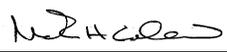
Carrying Charges shall be calculated on the average monthly balance of each subaccount. The interest rate is to be adjusted each quarter using the prime interest rate as reported by the Wall Street Journal on the first date of the month preceding the first month of the quarter.

The annual COGC Reconciliation filing shall coincide with the next annual COGC filing each year.

10. **Bad Debt and Working Capital Reconciliation Adjustments – FERC Account 173**

- (1) The following **definitions** pertain to Working Capital and Bad Debt reconciliation adjustment calculations:
- a. **Working Capital Costs Allowable** shall be:
    - i. Charges associated with gas supplies, upstream storage, transmission capacity, and product demand procured by the Company, as well as applicable taxes, to serve firm gas supply sales customers in the respective season. The annual working capital accumulated difference is then

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be applicable to gas used on or after the first day of the month in which the COG Factors become effective.

12. Information Required to be Filed with the NHPUC

Information pertaining to the COGC shall be filed with the NHPUC in accordance with the format established by the NHPUC. Reporting requirements include filing the Company’s annual COGC filing with seasonal COGC and its monthly calculations of the projected over or under-collection of the COGC reconciliation ending balance, along with notification by the Company to the NHPUC of any revised COGCs for the subsequent month, not less than five (5) business days prior to the first day of the subsequent month.

Additionally, the Company shall file with the NHPUC an annual reconciliation of gas costs and gas cost collections containing information in support of the reconciliation calculation set out in Part IV, Section 9 (2). Such information shall include the complete list of gas costs claimed as recoverable through the COGC over the previous year. This annual COGC reconciliation shall be submitted with each annual COGC filing, along with complete documentation of the COGC reconciliation adjustment calculations.

The Company shall file with the NHPUC an annual reconciliation of bad debt expense and bad debt collections containing information in support of the reconciliation calculation set out in Part IV, Section 10 (2). Such information shall detail the revenues collected as an allowance for bad debt as well as the per books actual gas cost bad debt expense claimed as recoverable through the COGC over the previous year. This annual reconciliation of bad debt expenses shall be included with the respective annual COGC reconciliation filing, along with supporting documentation.

The Company shall file with the NHPUC an annual reconciliation of gas supply related working capital expense and working capital collections containing information in support of the reconciliation calculation set out in Part IV, Section 10 (2). Such information shall detail the revenues collected as an allowance for gas supply related working capital as well as the per books actual gas supply related working capital expense claimed as recoverable through the COGC over the previous year. This annual reconciliation of gas supply related working capital expense shall be included with the respective annual COGC reconciliation filing, along with supporting documentation.

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**IV. COST OF GAS CHARGE**

13. Other Rules

- (1) The NHPUC may, where appropriate, on petition or on its own motion, grant an exception from the provisions of this Section IV, upon such terms that it may determine to be in the public interest.
- (2) The Company may, without further NHPUC action, adjust the approved seasonal COGCs upward or downward monthly based on the Company’s calculation of the projected COG reconciliation ending balance over or under-collection for the applicable Summer or Winter Season, but the cumulative upward adjustments shall not exceed twenty-five (25) percent of the approved seasonal COGCs.
- (3) The Company may, at any time, file with the NHPUC an amended COGC. An amended COGC filing must be submitted 45 days before the first day of the month in which it is proposed to take effect.
- (4) The operation of the COGC is subject all powers of suspension and investigation vested in the NHPUC.

14. Reconciliation Adjustment of FERC Accounts

- 191 Annual Gas Cost Reconciliation Adjustment for COGC  
This account shall be used to record the cumulative difference between annual gas revenues and annual gas costs. Entries to this account shall be determined as outlined in the COGC.
- 173 Annual Bad Debt Reconciliation Adjustment for COGC  
This account shall be used to record the cumulative difference between annual bad debt revenues and annual bad debt costs. Entries to this account shall be determined as outlined in the COGC.
- 173 Annual Gas Working Capital Allowance Reconciliation Adjustment for COGC  
This account shall be used to record the cumulative difference between annual gas working capital allowance revenues and the annual gas working capital allowance. Entries to this account shall be determined as outlined in the COGC.

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- 242      Undistributed Purchase Capacity/Product Demand Refunds  
This account shall be used to record the refunds from upstream capacity suppliers and suppliers of product demand and the transfer of credits in the annual calculation of the seasonal COGCs. Entries to this account shall be determined as outlined in the COGC.
- 242      Undistributed Commodity Gas Supplier Refunds.  
This account shall be used to record the refunds from upstream commodity supplies and suppliers of product commodity and the transfers of credits in the annual calculation of the seasonal COGCs. Entries to this account shall be determined as outlined in the COGC.

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**Anticipated Cost of Gas**  
**New Hampshire Division**  
**Period Covered: November 1, 2017 - April 30, 2018**

(Col 1)	(Col 2)	(Col 3)
<b><u>ANTICIPATED DIRECT COST OF GAS</u></b>		
<b>Purchased Gas:</b>		
Demand Costs:	\$2,736,659	
Supply Costs:	\$8,821,653	
<b>Storage &amp; Peaking Gas:</b>		
Demand, Capacity:	\$8,330,279	
Commodity Costs:	\$5,967,050	
<b>Hedging (Gain)/Cost</b>	\$112,028	
<b>Interruptible Included Above</b>	\$0	
<b>Inventory Finance Charge</b>	\$3,454	
<b>Capacity Release, &amp; Asset Management</b>	(\$1,894,561)	
<b>Off-system Peaking Demand Cost Adjustment</b>	\$ (44,199)	
<b>Total Anticipated Direct Cost of Gas</b>		<u>\$24,032,363</u>
<b><u>ANTICIPATED INDIRECT COST OF GAS</u></b>		
<b>Adjustments:</b>		
Prior Period Under/(Over) Collection	(\$292,077)	
Interest	(\$25,703)	
Refunds	\$0	
<u>Interruptible Margins</u>	<u>\$0</u>	
Total Adjustments		(\$317,780)
<b>Working Capital:</b>		
Total Anticipated Direct Cost of Gas	\$24,032,363	
Working Capital Percentage	<u>0.1077%</u>	
Working Capital Allowance	\$ 25,884	
Plus: Working Capital Reconciliation (Acct 182.11)	<u>\$2,771</u>	
Total Working Capital Allowance		\$28,656
<b>Bad Debt:</b>		
Bad Debt Allowance	\$184,403	
Plus: Bad Debt Reconciliation (Acct 182.16)	(\$3,161)	
Total Bad Debt Allowance		\$181,243
<b>Local Production and Storage Capacity</b>		\$420,658
<b>Miscellaneous Overhead-81.59% Allocated to WinterSeason</b>		\$418,262
<b>Total Anticipated Indirect Cost of Gas</b>		\$731,039
<b>Total Cost of Gas</b>		<u>\$24,763,402</u>

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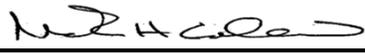
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**Anticipated Cost of Gas**  
**New Hampshire Division**  
**Period Covered: May 1, 2018 - October 31, 2018**

	(Col 1)	(Col 2)	(Col 3)
<b><u>ANTICIPATED DIRECT COST OF GAS</u></b>			
<b>Purchased Gas:</b>			
Demand Costs:		\$592,766	
Supply Costs:		\$2,119,016	
<b>Storage &amp; Peaking Gas:</b>			
Demand, Capacity:		\$370,493	
Commodity Costs:		\$29,837	
<b>Hedging (Gain)/Cost</b>		\$0	
<b>Interruptible Included Above</b>		\$0	
<b>Inventory Finance Charge</b>		\$0	
<b>Capacity Release, &amp; Asset Management</b>		\$0	
<b>Total Anticipated Direct Cost of Gas</b>			<b>\$3,112,112</b>
<b><u>ANTICIPATED INDIRECT COST OF GAS</u></b>			
<b>Adjustments:</b>			
Prior Period Under/(Over) Collection		(\$65,925)	
Interest		(\$27,527)	
Refunds		\$0	
<u>Interruptible Margins</u>		\$0	
Total Adjustments			(\$93,452)
<b>Working Capital:</b>			
Total Anticipated Direct Cost of Gas		\$3,112,112	
Working Capital Percentage		<u>0.1077%</u>	
Working Capital Allowance		\$3,352	
Plus: Working Capital Reconciliation (Acct 182.11)		\$626	
Total Working Capital Allowance			\$3,977
<b>Bad Debt:</b>			
Bad Debt Allowance		\$11,146	
Plus: Bad Debt Reconciliation (Acct 182.16)		(\$713)	
Total Bad Debt Allowance			\$10,433
<b>Local Production and Storage Capacity</b>			\$0
<b>Miscellaneous Overhead-18.41% Allocated to the Summer Season</b>			\$94,406
<b>Total Anticipated Indirect Cost of Gas</b>			\$15,364
<b>Total Cost of Gas</b>			<b>\$3,127,475</b>

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**CALCULATION OF FIRM SALES COST OF GAS RATE**

Period Covered: November 1, 2017 - April 30, 2018

(Col 1)	(Col 2)	(Col 3)
Total Anticipated Direct Cost of Gas	\$24,032,363	
Projected Prorated Sales (11/01/17 - 04/30/18)	34,865,979	
<b>Direct Cost of Gas Rate</b>		\$0.6893 per therm
<b>Demand Cost of Gas Rate</b>	\$9,128,178	\$0.2618 per therm
<b>Commodity Cost of Gas Rate</b>	<u>\$14,904,185</u>	<u>\$0.4275</u> per therm
<b>Total Direct Cost of Gas Rate</b>	\$24,032,363	<b>\$0.6893</b> per therm
Total Anticipated Indirect Cost of Gas	\$731,226	
Projected Prorated Sales (11/01/17 - 04/30/18)	34,865,979	
<b>Indirect Cost of Gas</b>		\$0.0210 per therm
<b>TOTAL PERIOD AVERAGE COST OF GAS</b>		<b>\$0.7103 per therm</b>

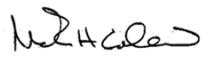
Period Ending over-collection as determined on 01/19/17	\$2,500,000
Projected Sales (02/01/18 - 04/30/18)	16,202,626
Per unit change in Cost of Gas (02/01/18 - 04/30/18)	\$0.1543
*1 Over-collection w/o rate adjustment as contained in NUI's COG Report dated January 19, 2018	

<b>RESIDENTIAL COST OF GAS RATE - 02/01/18</b>	<b>COGwr</b>	<b>\$0.8646 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.8879</b>
RESIDENTIAL COST OF GAS RATE - 11/01/17		\$0.7103
CHANGE IN PER UNIT COST		\$0.1543
RESIDENTIAL COST OF GAS RATE - 2/01/18		\$0.8646

<b>COM/IND LOW WINTER USE COST OF GAS RATE - 02/01/18</b>	<b>COGwl</b>	<b>\$0.7767 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.7780</b>
COMM/IND LOW WINTER USE COST OF GAS RATE - 11/01/17		\$0.6224
CHANGE IN PER UNIT COST		\$0.1543
COMM/IND LOW WINTER USE COST OF GAS RATE - 2/01/18		\$0.7767

<b>COM/IND HIGH WINTER USE COST OF GAS RATE - 02/01/18</b>	<b>COGwh</b>	<b>\$0.8779 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.9045</b>
COMM/IND HIGH WINTER USE COST OF GAS RATE - 11/01/17		\$0.7236
CHANGE IN PER UNIT COST		\$0.1543
COMM/IND HIGH WINTER USE COST OF GAS RATE - 2/01/18		\$0.8779

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**CALCULATION OF FIRM SALES COST OF GAS RATE**

Period Covered: May 1, 2018 - October 31, 2018

(Col 1)	(Col 2)	(Col 3)
Total Anticipated Direct Cost of Gas	\$3,112,112	
Projected Prorated Sales (05/01/18 - 10/31/18)	7,869,571	
<b>Direct Cost of Gas Rate</b>		\$0.3955 per therm
<b>Demand Cost of Gas Rate</b>	\$963,258	\$0.1224 per therm
<b>Commodity Cost of Gas Rate</b>	<u>\$2,148,854</u>	<u>\$0.2731</u> per therm
<b>Total Direct Cost of Gas Rate</b>	\$3,112,112	<b>\$0.3955</b> per therm
Total Anticipated Indirect Cost of Gas	\$15,364	
Projected Prorated Sales (05/01/18 - 10/31/18)	7,869,571	
<b>Indirect Cost of Gas</b>		\$0.0020 per therm
<b>TOTAL PERIOD AVERAGE COST OF GAS</b>		<b>\$0.3975 per therm</b>

<b>RESIDENTIAL COST OF GAS RATE -05/01/18</b>	<b>COGwr</b>	<b>\$0.3975 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.4969</b>

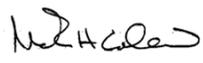
<b>COM/IND LOW WINTER USE COST OF GAS RATE - 05/01/18</b>	<b>COGwl</b>	<b>\$0.3543 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.4429</b>

C&I HLF DEMAND COSTS ALLOCATED PER SMBA	\$125,955
PLUS: RESIDENTIAL DEMAND RELOCATION TO C&I HLF	<u>\$13,376</u>
C&I HLF TOTAL ADJUSTED DEMAND COSTS	\$139,331
C&I HLF PROJECTED PRORATED SALES (05/01/18 - 10/31/18)	1,757,926
<b>DEMAND COST OF GAS RATE</b>	<b>\$0.0793</b>
C&I HLF COMMODITY COSTS ALLOCATED PER SMBA	\$480,017
PLUS: RESIDENTIAL COMMODITY REALLOCATION TO C&I HLF	<u>(\$55)</u>
C&I HLF TOTAL ADJUSTED COMMODITY COSTS	\$479,961
C&I HLF PROJECTED PRORATED SALES (05/01/18 - 10/31/18)	1,757,926
<b>COMMODITY COST OF GAS RATE</b>	<b>\$0.2730</b>
<b>INDIRECT COST OF GAS</b>	<b>\$0.0020</b>
<b>TOTAL C&amp;I HLF COST OF GAS RATE</b>	<b>\$0.3543</b>

<b>COM/IND HIGH WINTER USE COST OF GAS RATE - 05/01/18</b>	<b>COGwh</b>	<b>\$0.4254 per therm</b>
	<b>Maximum (COG+25%)</b>	<b>\$0.5318</b>

C&I LLF COMMODITY COSTS ALLOCATED PER SMBA	\$368,794
PLUS RESIDENTIAL DEMAND REALLOCATION TO C&I LLF	<u>\$39,165</u>
C&I LLF TOTAL ADJUSTED DEMAND COSTS	\$407,959
C&I LLF PROJECTED PRORATED SALES (05/01/18 - 10/31/18)	2,713,210
<b>DEMAND COST OF GAS RATE</b>	<b>\$0.1504</b>
C&I LLF COMMODITY COSTS ALLOCATED PER SMBA	\$740,865
PLUS: RESIDENTIAL COMMODITY REALLOCATION TO C&I LLF	<u>(\$85)</u>
C&I LLF TOTAL ADJUSTED COMMODITY COSTS	\$740,780
C&I LLF PROJECTED PRORATED SALES (05/01/18 - 10/31/18)	2,713,210
<b>COMMODITY COST OF GAS RATE</b>	<b>\$0.2730</b>
<b>INDIRECT COST OF GAS</b>	<b>\$0.0020</b>
<b>TOTAL C&amp;I LLF COST OF GAS RATE</b>	<b>\$0.4254</b>

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## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

### **Section**

1. Purpose
2. Applicability
3. Energy Efficiency ("EE") Program Costs Allowable for Local Delivery Adjustment Charge ("LDAC") –Energy Efficiency ("EE")
4. Lost Revenue Allowable for LDAC -- ("LR")
5. Environmental Response Costs Allowable for LDAC -- ("ERC")
6. Interruptible Transportation Margin Credit Allowable for LDAC -- ("ITMC")
7. Residential Low Income Assistance and Regulatory Assessment ("RLIARA") Costs Allowable for LDAC
8. Expenses Related to Rate Case ("RCE")
9. Reconciliation of Permanent Changes in Delivery Rates ("RPC")
10. Effective Date of Local Delivery Adjustment Charge
11. Local Delivery Adjustment Charge (LDAC) Formula
12. Application of LDAC to Bills
13. Other Rules
14. Amendments to Uniform System of Accounts

### **1. Purpose**

The purpose of this clause is to establish procedures that allow Northern Utilities ("Northern" or the "Company") subject to the jurisdiction of the State of New Hampshire Public Utilities Commission ("PUC" or "NHPUC"), to adjust, on an annual basis, its rates for firm gas Sales and firm Delivery Services in order to recover Energy Efficiency program costs, recover lost revenue related to the Energy Efficiency programs, recover environmental response costs, return interruptible transportation margin credits, recover revenue shortfall associated with customer participation in the Residential Low Income Assistance Program, recover the non-distribution portion of the annual NHPUC regulatory assessment, recover rate case expenses and recover and return the reconciliation of revenues related to permanent changes in delivery rates.

### **2. Applicability**

This Local Delivery Adjustment Charge ("LDAC") shall be applicable in whole or part to all of Northern's firm Sales and firm Delivery Services customers as shown on the table below. The application of the clause may, for good cause shown, be modified by the NHPUC. See Part V, Section 12, "Other Rules."

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**V. LOCAL DELIVERY ADJUSTMENT CHARGE**

Applicability	EE V.3.	LR V3A	ERC V.4.	ITM V.5.	RLIARA V.7.	RCE V.9.	RPC V.10.
Residential Non-Heating	X	X	X	X	X	X	X
Residential Heating	X	X	X	X	X	X	X
Small C&I	X	X	X	X	X	X	X
Medium C&I	X	X	X	X	X	X	X
Large C&I	X	X	X	X	X	X	X
No Previous Sales Service	X	X	X	X	X	X	X

Notes:

- 1 N/A - Not applicable
- 2 X - Applicable to all
- 3 Specific EEC and LR Rates for Residential Heating and Non-Heating
- 4 Specific EEC and LR Rates for All C&I classes

**3. Energy Efficiency Program Costs Allowable for LDAC**

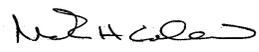
3.1 Purpose

The purpose of this provision is to establish a procedure that allows Northern, subject to the jurisdiction of the NHPUC, to adjust on an annual basis, the Energy Efficiency Charge applicable to firm gas Sales and firm Delivery Services throughput in order to recover from firm ratepayers Energy Efficiency program costs and performance incentives.

3.2 Applicability

An Energy Efficiency Charge ("EEC") shall be applied to firm Sales and firm Delivery Services throughput of the Company as determined in accordance with the provisions of Part V, Section 3 of this clause. Such EEC shall be determined annually by the Company, separately for each Rate Category defined below, subject to review and approval by the NHPUC as provided for in this clause.

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For purposes of applying the respective EEC each "Rate Category" shall be as follows:

Residential	Rates R-5, R-6, R-10,
Commercial/Industrial (including multi-family)	Rates G-40, G-50, G-41, G-42, G-51, G-52

Special contract customers are exempt from the EEC.

### 3.3 Reporting

The Company shall submit monthly and annual reports by Rate Category to the Commission reconciling any difference between the actual Energy Efficiency costs and actual revenues collected under this rate schedule. The difference, whether positive or negative, will be carried forward, with interest, into the EEC for the next recovery period. Annual reports shall be filed with the Commission at least 45 days prior to the effective date of the next subsequent twelve-month period.

### 3.4 Effective Date of EEC

Forty-five ("45") days prior to November 1 of each year, the Company will file with the NHPUC for its consideration and approval, the Company's request for a change in the EEC applicable to each Rate Category during the next subsequent twelve-month period commencing with the calendar month of November.

### 3.5 Calculation of the EEC

The EEC for each Rate Category will be derived by dividing the projected annual EE costs, including performance incentives, plus the reconciliation balance, by forecast firm annual throughput. The reconciliation balance shall reflect both actual and projected data, as necessary, through October of the prior rate period.

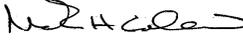
### 3.6 Reconciliation Adjustments

Account 173 shall contain the accumulated difference between EEC revenues collected and actual Energy Efficiency program costs and performance incentives, plus carrying charges calculated on the average monthly balance and then added or credited to the end-of-month balance. Interest shall be calculated based on the prime rate, with said prime rate to be fixed on a quarterly basis and to be established as reported in the Wall Street Journal on the first business day of the

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month preceding the calendar quarter; if more than one rate is reported the average of the reported rates shall be used.

### 3.7 Application of EEC Rate to Bills

The EEC Rate (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm sales volumes and transportation throughput.

### 3.8 Information to be Filed with the NHPUC

An annual EEC filing will be required forty-five (45) days prior to the effective date of November 1, containing the calculation of the new annual EEC to become effective November 1. The calculation will reflect the forecast of EEC annual costs, the updated annual EEC reconciliation balance and throughput forecast for the upcoming period. Monthly and annual reconciliation reports will be filed in accordance with Section 3.3 above.

## **4. Lost Revenue Allowable for LDAC**

### 4.1 Purpose

The purpose of this provision is to establish a procedure that allows Northern, subject to the jurisdiction of the NHPUC, to adjust on an annual basis, the Lost Revenue Rate applicable to firm gas Sales and firm Delivery Services throughput in order to recover from firm ratepayers lost revenue related to Energy Efficiency programs, pursuant to Order No. 25,932 in Docket DE 15-137, Energy Efficiency Resource Standard.

### 4.2 Applicability

Effective January 1, 2017, a Lost Revenue Rate ("LRR") shall be applied to firm Sales and firm Delivery Services throughput of the Company as determined in accordance with the provisions of Part V, Section 3.A of this clause. Such LRR shall be determined annually by the Company, separately for each Rate Category defined below, subject to review and approval by the NHPUC as provided for in this clause.

For purposes of applying the respective LRR each "Rate Category" shall be as follows:

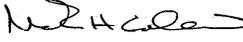
Residential

Rates R-5, R-6, R-10

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Commercial/Industrial (including multi-family) Rates G-40, G-50, G-41,  
G-42, G-51, G-52

Special contract customers are exempt from the LRR.

### 4.3 Effective Date of the LRR

Forty-five ("45") days prior to November 1 of each year, the Company will file with the NHPUC for its consideration and approval, the Company's request for a change in the LRR applicable to each Rate Category during the next subsequent twelve-month period commencing with the calendar month of November.

### 4.4 Calculation of the LRR

The LRR for each Rate Category will be derived by dividing the projected annual lost revenue, plus the reconciliation balance and projected interest, by forecast firm annual throughput. The reconciliation balance shall reflect both actual and projected data, as necessary, through October of the prior rate period.

### 4.5 Reconciliation Adjustments

Account 173 shall contain the accumulated difference between LRR revenues collected and actual costs, plus carrying charges calculated on the average monthly balance and then added or credited to the end-of-month balance. Interest shall be calculated based on the prime rate, with said prime rate to be fixed on a quarterly basis and to be established as reported in the Wall Street Journal on the first business day of the month preceding the calendar quarter; if more than one rate is reported the average of the reported rates shall be used.

### 4.6 Application of LRR to Bills

The LRR (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm sales volumes and transportation throughput.

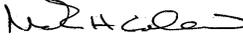
### 4.7 Information to be Filed with the NHPUC

An annual LRR filing will be required forty-five (45) days prior to the effective date of November 1, containing the calculation of the new annual LRR to become effective November 1. The calculation will reflect the forecast of LRR annual costs, the updated annual LRR reconciliation balance and throughput forecast for

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## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

the upcoming period.

### **5. Environmental Response Costs Allowable for LDAC**

#### **5.1 Purpose**

In order to recover Environmental Response Cost ("ERC") expenditures associated with former manufactured gas plants, there shall be an ERC Rate applied to all firm gas Sales and firm Delivery Services throughput billed under the Company's sales and delivery service rate schedules.

#### **5.2 Applicability**

An annual ERC Rate shall be calculated effective every November 1 for the annual period of November 1 through October 31. The annual ERC Rate shall be filed with the Company's Annual Cost of Gas Charge ("COGC") filing and be subject to review and approval by the Commission. The annual ERC Rate will be applied to firm Sales and to firm Delivery Services throughput as a separate surcharge. Special contract customers are exempt from the ERC.

#### **5.3 Environmental Response Cost Allowable**

All approved environmental response costs associated with manufactured gas plants shall be included in the ERC Rate.

The total annual charge to the Company's ratepayers for environmental response costs during any annual ERC recovery period shall not exceed five percent (5%) of the Company's total revenues from firm gas sales and Delivery Service throughput during the preceding twelve (12) month period ending June 30. The total annual charge shall represent the ERC expenditures to be in effect for the upcoming twelve month period, November 1 through October 31. If this recovery limitation results in the Company recovering less than the amount that would otherwise be recovered in a particular ERC Recovery Year, then the Company would defer this unrecovered amount, with interest, calculated monthly on the average monthly balance, until the next recovery period in which this amount could be recovered without violating the 5% limitation. The interest rate is to be adjusted each quarter using the prime interest rate as reported by the Wall Street Journal on the first date of the month preceding the first month of the quarter.

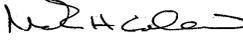
#### **5.4 Effective Date**

Forty-five ("45") days prior to November 1 of each year, the Company will file with the NHPUC for its consideration and approval, the Company's request for a

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change in the ERC applicable to all firm sales and firm delivery service throughput for the subsequent twelve month period commencing with the calendar month of November.

### 5.5 Definitions

**Environmental Response Costs** shall include all costs of investigation, testing, remediation, litigation expenses, and other liabilities relating to manufactured gas plant sites, disposal sites, or other sites onto which material may have migrated, as a result of the operating or decommissioning of New Hampshire gas manufacturing facilities. ERCs shall also include the expenses incurred by the Company in pursuing insurance and third-party claims and any recoveries or other benefits received by the company as a result of such claims.

### 5.6 Reconciliation Adjustments

Prior to the Annual COGC filing, the Company will calculate the difference between (a) the revenues derived by multiplying firm sales and Delivery Service throughput by the ERC Rate through October 31, and (b) the historical amortized costs approved for recoveries in the prior November's Annual ERC Recovery Period. This cumulative difference will be recorded in Account 173. The Company shall file the reconciliation along with its COG filing forty-five (45) days prior to the beginning of the annual period.

### 5.7 Calculation of the ERC

The ERC Rate calculated annually consists of one-seventh of actual response costs incurred by the Company in the twelve month period ending June 30 of each year until fully amortized (over seven years). Any insurance and third-party recoveries or other benefits for the twelve month period ending June 30 shall be applied to reduce the unamortized balance, shortening the amortization period. The sum of these amounts is then divided by the Company's forecast of total firm sales and Delivery Service throughput for the upcoming twelve months of November 1 through October 31.

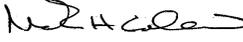
### 5.8 Application of ERC to Bills

The annual ERC Rate shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm gas sales by being included in the determination of the semiannual COGC, and also will be applied to the

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monthly firm Delivery throughput of each firm Delivery customer's bill.

### **6. Interruptible Transportation Margins Allowable for LDAC**

#### 6.1 Purpose

The purpose of this provision is to establish a procedure that allows Northern subject to the jurisdiction of the NHPUC to adjust the Interruptible Transportation Margin Credit ("ITMC") applicable to firm gas Sales and firm Delivery Services throughput in order to return the Interruptible Transportation margins allocated to the local distribution firm ratepayers.

#### 6.2 Applicability

An Interruptible Transportation Margin Credit ("ITMC") shall be applied to all firm Sales and firm Delivery Services throughput of the Company subject to the jurisdiction of the NHPUC as determined in accordance with the provisions of Part V, Section 5 of this clause. Such ITMC shall be determined annually by the Company as defined below, subject to review and approval by the NHPUC as provided for in this clause. The ITMC is not applied to the bills of special contract customers.

The application of this provision may, for good cause shown, be modified by the NHPUC. See Part V, Section 12, "Other Rules."

#### 6.3 Effective Date of Interruptible Transportation Margin

The ITMC shall become effective on November 1 as designated by the Company.

#### 6.4 Interruptible Transportation Margins

The ITMC shall be computed annually based on a forecast of Interruptible Transportation margins and firm sales and firm delivery service throughput volumes.

#### 6.5 Annual ITM Credit Formula

The annual ITM Credit shall be calculated according to the following formulas:

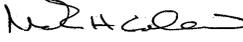
$$\text{ITMC} = \frac{\text{ITM}}{\text{A:TPvol}} + \text{RF}_{\text{ITM}}$$

**and:**

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$$RF_{ITM} = \frac{R_{ITM}}{A:TP_{vol}}$$

**Where:**

A : TP <sub>vol</sub>	Forecast annual firm sales and firm delivery service throughput.
ITMC	Annual Interruptible Transportation Margin Credit.
ITM	Interruptible Transportation margins
RF <sub>ITM</sub>	Annual Interruptible Transportation margin reconciliation adjustment factor applicable to total firm sales and firm delivery service throughput.
R <sub>ITM</sub>	Reconciliation costs - interruptible Transportation margins, Account 173 balance, inclusive of the associated Account 173 interest.

### 6.6 Reconciliation Adjustments

Account 173 shall contain the accumulated difference between annual, interruptible Transportation margins returned toward the local distribution function, as calculated by multiplying the interruptible Transportation margin credit (ITMC) times monthly firm sales and firm delivery service throughput during the year, and the actual margins for the year.

See Part V, Section 5.5 for Reconciliation formulas.

### 6.7 Application of ITMC to Bills

The ITMC (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm by period and will be applied to the monthly firm sales and firm delivery service throughput.

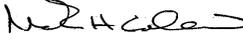
### 6.8 Information to be Filed with the NHPUC

Information pertaining to the Interruptible Transportation Margins will be filed with the NHPUC along with the gas cost information as required pursuant to the LDAC and COGC. Required filings include an annual report providing actual data and resulting updated projection of the end-of-period reconciliation balance, as well as an annual calculation of the ITM credit, which shall be included in an annual LDAC filing. Also, the annual ITM reconciliation balances shall be filed along with the other reconciliation balances included in the LDAC.

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## V. LOCAL DELIVERY ADJUSTMENT CHARGE

### 7. Residential Low Income Assistance and Regulatory Assessment (“RLIARA”) Costs Allowable for LDAC

#### 7.1 Purpose:

The purpose of this provision is to allow Northern Utilities, subject to the jurisdiction of the NHPUC, to recover the revenue shortfall (costs) associated with customers participating in the Residential Low Income Assistance Program, as well as the associated administrative costs, pursuant to DG 05-076. This rate shall also recover the change in the Company’s annual NHPUC regulatory assessment. Such costs shall be recovered by applying the RLIARA Rate to all firm gas Sales and firm Delivery Services throughput billed under the Company’s sales and delivery service rate schedules.

#### 7.2 Applicability:

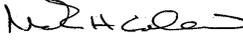
The RLIARA Rate shall be applied to all firm Sales and Delivery Services customers with the exception of special contract customers who are exempt from the LDAC. The RLIARA Rate shall be determined annually by the Company as defined below, subject to review and approval by the NHPUC as provided in this clause.

#### 7.3 Residential Low Income Assistance and Regulatory Assessment Costs (“RLIARAC”) Allowable for LDAC

The amount of Residential Low Income Assistance costs is comprised of the revenue shortfall plus the associated administrative costs. Such revenue shortfall shall be derived by applying the actual billing determinants of the customers enrolled under the Residential Low Income Assistance Program to the difference in the monthly customer charge and volumetric rates of the Residential Heating Rate, R-5, versus the Low Income Residential Heating Rate, R-10. The revenue shortfall and administrative costs shall be the amount approved by the NHPUC. Effective July 5, 2017, the amount of the NH PUC regulatory assessment to be charged, or credited, through this clause shall be calculated by taking the total assessment minus the amount in base rates of \$310,650 established in DG 17-070.

#### 7.4 Effective Date of Residential Low Income Assistance and Regulatory Assessment Rate

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Forty five (45) days prior to November 1 of each year, the Company will file with the NHPUC for its consideration and approval, the Company's request for a change in the RLIARA Rate applicable to all consumption of tariff customers eligible to receive delivery service for the subsequent twelve month period commencing with billings for gas consumed on and after November 1.

### 7.5 Definitions:

Residential Low Income Assistance Costs are the difference in revenues determined by comparing the delivery service revenues generated from customers participating in the Residential Low Income Assistance Program with revenues from those same customers under the regular Residential Heating R-5 rate schedule. Also, these costs include the associated administrative costs, which include associated Information Technology and start-up costs. The Company shall calculate the shortfall or reduced delivery service revenues by applying the monthly gas use of all customers of record under the Low Income Residential Heating Service R-10 rate schedule to the difference in the delivery service rates of the Low Income Residential Heating Service R-10 Rate and Residential Heating R-5 Rate.

### 7.6 Residential Low Income Assistance and Regulatory Assessment ("RLIARA") Rate Formula:

$$\text{RLIARA Rate} = \frac{\text{RLIARAC} + \text{RA}_{\text{RLIARA}}}{\text{A:TPvol}}$$

and:

$$\text{RLIARAC} = (\text{Cust} \times \text{DCust\$}) + (\text{Cust} \times \text{Avgthm} \times \text{Dbr}) + \text{AdminC} + \text{Assessment}$$

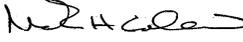
#### **Where:**

AdminC	Costs associated with administering the Residential Low Income Assistance Program, including IT and start-up costs.
Assessment	The amount of the annual NHPUC regulatory assessment which is above or below the amount of \$310,650 in base rates established in Docket 17-070.
Avgthm	Estimated average therm use per customer for period determined from most recent historical therm use under the Company's Residential Low Income Assistance Program, or Residential Heating, rate schedules.
Cust	Estimated number of customers participating in the Residential Low Income Assistance Program.
Dbr	Difference between the Residential Heating R-5 and Low

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## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

DCust\$	Income Residential Heating Service R-10 base rate charges. Difference between the Residential Heating R-5 and Low Income Residential Heating Service R-10 monthly customer charge.
RLIARAC	Costs, comprised of the revenue shortfall associated with customer participation in the Residential Low Income Assistance Program, plus associated administrative costs, as defined in section 6.5, and the non-distribution portion of the annual NHPUC regulatory assessment.
RA <sub>RLIARAPC</sub>	Reconciliation Adjustment associated with Residential Low Income Assistance and Regulatory Assessment Costs and revenues - Account 173 balance, inclusive of the associated Account 175.9 interest, as outlined in Section 6.7
A:TPvol	Forecast annual firm sales and firm delivery service throughput.

### 7.7 Reconciliation Adjustments

Account 173 shall contain the accumulated difference between revenues toward Residential Low Income Assistance and Regulatory Assessment costs as calculated by multiplying the (RLIARA) Rate times monthly firm throughput volumes and actual RLIARAC, comprised of the revenue shortfall and administrative costs, allowed as defined in Section 6.5, plus the non-distribution portion of the annual NHPUC regulatory assessment, plus carrying charges calculated on the average monthly balance using the .Federal Reserve Statistical Release prime lending rate and then added to the end-of-month balance.

### 7.8 Application of RLIARA Rate to Bills

The RLIARA Rate (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm sales volumes and transportation throughput.

### 7.9 Information to be Filed with the NHPUC

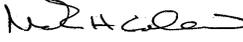
Information pertaining to the Residential Low Income Assistance and Regulatory Assessment (RLIARA) costs and revenue shall be filed with the NHPUC consistent with the filing requirements of all costs and revenue information included in the LDAC. An annual RLIARA filing will be required forty-five (45) days prior to the effective date of November 1, containing the calculation of the new annual RLIARA Rate to become effective November 1. The calculation will reflect the forecast of RLIARA annual costs, the updated annual RLIARA reconciliation balance and throughput forecast for the upcoming annual period.

## 8. Expenses Related to Rate Cases Allowable for LDAC

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## V. LOCAL DELIVERY ADJUSTMENT CHARGE

### 8.1 Purpose

The purpose of this provision is to establish a procedure that allows Northern Utilities to adjust its rates for the recovery of NHPUC-approved rate case expenses.

### 8.2 Applicability

The Rate Case Expenses (“RCE”) shall be applied to all firm tariffed customers with the exception of special contract customers. The RCE will be determined by the Company, as defined below.

### 8.3 Rate Case Expenses Allowable for LDAC

The total amount of the RCE will be equal to the amount approved by the Commission.

### 8.4 Rate Case Expenses Allowable for LDAC

The effective date of the RCE will be determined by the NHPUC in an individual rate proceeding.

### 8.5 Definition

The RCE includes all rate case-related expenses approved by the NHPUC. This includes legal expenses, costs for bill inserts, costs for legal notices, consulting fees, processing expenses, and other approved expenses.

### 8.6 Rate Case Expense (RCE) Factor Formulas

The RCE will be calculated according to the Commission Order issued in an individual proceeding to establish details including the number of years over which the RCE shall be amortized and the allocation of recovery among rate classes. In general, the RCE Factor will be derived by dividing the annual portion of the total RCE, plus the RCE Reconciliation Adjustment, by forecast firm annual throughput.

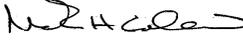
### 8.7 Reconciliation Adjustments

Account 173 shall contain the accumulated difference between revenues toward

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Title: Senior Vice President

## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

Rate Case Expenses as calculated by multiplying the Rate Case Expense Factor (RCEF) times the appropriate monthly volumes and Rate Case Expense allowed.

At the end of the recovery period, any under or over recovery will be included in an active LDAC component, as approved by the Commission.

### 8.8 Application of RCE to Bills

The RCE (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm sales and firm delivery service throughput of tariffed customers.

### 8.9 Information to be Filed with the NHPUC

Information pertaining to the RCE will be filed with the NHPUC consistent with the filing requirements of all cost and revenue information included in the LDAC. The RCE filing will contain the calculation of the new RCE and will include the updated RCE reconciliation balance.

## **9. Reconciliation of Permanent Changes in Distribution Rates**

### 9.1 Purpose

The purpose of this provision is to establish a procedure that allows Northern Utilities to adjust its rates for the reconciliation of revenues related to a permanent change in the Company's distribution service rates implemented subsequent to the effective date of such change. This provision includes the reconciliation for the difference in revenues charged under temporary versus permanent rates.

### 9.2 Applicability

The factor to reconcile the revenues resulting from a permanent rate change ("RPC") shall be applied to all firm tariffed customers. The Company will determine the RPC, as defined in this section.

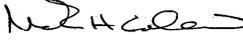
### 9.3 Amount of RPC Allowable for LDAC

The amount of the RPC will be equal to the amount approved by the Commission.

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## V. LOCAL DELIVERY ADJUSTMENT CHARGE

### 9.4 Effective Date of RPC Charge

The effective date of the RPC Charge will be determined by the NHPUC on a case by case basis.

### 9.5 Definition

The RPC is a surcharge mechanism, which allows Northern Utilities to adjust its rates for the reconciliation of revenues generated under delivery service rates that have been permanently changed.

### 9.6 Formulas to Reconcile Revenues Resulting From a Permanent Rate Change

The RPC will be calculated according to the Commission Order issued in an individual proceeding.

### 9.7 Reconciliation Adjustment Account

Account 173 shall contain the accumulated difference between revenues toward reconciliation expenses as calculated by multiplying the reconciliation of the permanent changes in delivery rate charge (RPC) times the appropriate monthly volumes and reconciliation amount allowed.

### 9.8 Application of RPC Charge to Bills

The RPC charge (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm sales and firm delivery service throughput of tariffed customers.

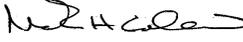
### 9.9 Information to be Filed with the NHPUC

Information pertaining to the RPC will be filed with the NHPUC consistent with the filing requirements of all cost and revenue information included in the LDAC. The RPC filing will contain the calculation of the new RPC charge and will include the updated RPC reconciliation balance.

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## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

### **10. Effective Date of LDAC**

The LDAC shall be filed annually and become effective on November 1 of each year pursuant to NHPUC approval. In order to minimize the magnitude of future reconciliation adjustments, the Company may request interim revisions to the LDAC rates, subject to review and approval of the NHPUC.

### **11. LDAC Formulas**

The LDAC shall be calculated on an annual basis, by summing up the various factors included in the LDAC, where applicable.

#### **LDAC Formula**

$$\text{LDAC}^x = \text{EEC}^x + \text{LBR}^x + \text{ERC} - \text{ITMC} + \text{RLIARA} + \text{RCEF}^x + \text{RPC}^x$$

**Where:**

EEC <sup>x</sup>	Annualized class specific Energy Efficiency Charge
LR <sup>x</sup>	Annualized class specific Lost Revenue Rate
LDAC <sup>x</sup>	Annualized class specific Local Delivery Adjustment Clause
ITMC	Annualized Interruptible Transportation Margin Credit
ERC	Total firm annualized Environmental Response Charge
RCEF <sup>x</sup>	Annualized class specific Rate Case Expense Factor
RLIARA	Annualized Residential Low Income Assistance and Regulatory Assessment Rate
RPC <sup>x</sup>	Reconciliation of Permanent Changes in Delivery Rates

### **12. Application of LDAC to Bills**

The component costs comprising the LDAC (\$ per therm) shall be calculated to the nearest one one-hundredth of a cent per therm and will be applied to the monthly firm Sales and firm Delivery Services throughput in accordance with the table shown in Part V, Section 2.

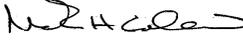
### **13. Other Rules**

- (1) The NHPUC may, where appropriate, on petition or on its own motion, grant an exception from the provisions of these regulations, upon such terms that it may

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## **V. LOCAL DELIVERY ADJUSTMENT CHARGE**

determine to be in the public interest.

- (2) Such amendments may include the addition or deletion of component cost categories, subject to the review and approval of the NHPUC.
- (3) The Company may implement an amended LDAC with the NHPUC approval at any time.
- (4) The NHPUC may, at any time, require the Company to file an amended LDAC.
- (5) The operation of the LDAC is subject to all powers of suspension and investigation vested in the NHPUC.

### **14. Amendments to Uniform System of Accounts**

#### 173 Interruptible Transportation Margin Reconciliation Adjustment for LDAC

This account shall be used to record the cumulative difference between annual Interruptible Transportation margin returns and annual Interruptible Transportation margins. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 5.

#### 173 Energy Efficiency Reconciliation Adjustment

This account shall be used to record the cumulative difference between the sum of Energy Efficiency program costs and performance incentives and the revenues collected from customers pursuant to this clause with respect to a given Rate Category. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 3.

#### 173 Environmental Response Costs Reconciliation Adjustment

This account shall be used to record the cumulative difference between the revenues toward environmental response costs as calculated by multiplying the ERC times monthly firm sales volumes and delivery service throughput and environmental response costs allowable per formula. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 4.

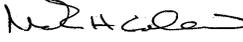
#### 173 Rate Case Expense Reconciliation Adjustment

This account shall be used to record the cumulative difference between the recovery and actual amounts of third party incremental expenses associated with

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**V. LOCAL DELIVERY ADJUSTMENT CHARGE**

the Company's Rate Case initiatives. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 7.

173 Reconciliation of Permanent Changes in Delivery Rates

This account shall be used to record the cumulative differences between the recovery or refund and actual amount of the reconciliation of permanent changes in delivery rates. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 8.

173 Residential Low Income Assistance and Regulatory Assessment Reconciliation Adjustment

This account shall be used to record the cumulative difference between the recovery and actual Residential Low Income Assistance and Regulatory Assessment Costs. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 6.

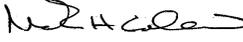
173 Lost Revenue Reconciliation Adjustment

This account shall be used to record the cumulative difference between the lost revenue of the Company and the revenue collected from customers pursuant to this clause with respect to a given Rate Category. Entries to this account shall be determined as outlined in the Local Delivery Adjustment Charge, Part V, Section 3.A.

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**Local Delivery Adjustment Clause**

Rate Schedule	RLIARA	EEC	LRR	ERC	ITM	RCE	RPC	LDAC
Residential Heating	\$0.0039	\$0.0433	\$0.0028	\$0.0060	\$0.0000	\$0.0029	\$0.0000	\$0.0589
Residential Non-Heating	\$0.0039	\$0.0433	\$0.0028	\$0.0060	\$0.0000	\$0.0029	\$0.0000	\$0.0589
Small C&I	\$0.0039	\$0.0184	\$0.0010	\$0.0060	\$0.0000	\$0.0029	\$0.0000	\$0.0322
Medium C&I	\$0.0039	\$0.0184	\$0.0010	\$0.0060	\$0.0000	\$0.0029	\$0.0000	\$0.0322
Large C&I	\$0.0039	\$0.0184	\$0.0010	\$0.0060	\$0.0000	\$0.0029	\$0.0000	\$0.0322
No Previous Sales Service								

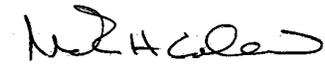
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Issued by:



Title:

Senior Vice President

**VI. RATE SCHEDULES**

**RATE SCHEDULE R-5 - RESIDENTIAL HEATING SERVICE**

CHARACTER OF SERVICE

Natural Gas or its equivalent having a nominal heat content of 1,000 Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

Service hereunder is available under this rate at single, domestic locations for all purposes in individual private dwellings and individual apartments including condominiums and their facilities which use gas as the principal household heating fuel or at locations which are otherwise deemed ineligible for non-heating service based on availability.

RATE – MONTHLY

Customer Charge				\$21.36 per month
Summer	-	First 50 therms	@	\$0.5870 per therm
	-	Excess 50 therms	@	\$0.5870 per therm
Winter	-	First 50 therms	@	\$0.6660 per therm
	-	Excess 50 therms	@	\$0.6660 per therm

MINIMUM BILL

The minimum monthly bill for gas service will be the Customer Charge Per Month.

COST OF GAS FACTOR AND LOCAL DELIVERY ADJUSTMENT CLAUSE

The provisions of the Company's Cost of Gas Charge, Part IV, and the Local Delivery Adjustment Charge, Part V, apply to gas sold under this rate schedule.

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## **VI. RATE SCHEDULES**

### **RATE SCHEDULE R-5 - RESIDENTIAL HEATING SERVICE**

(continued)

#### DEFINITIONS

**Summer** - Defined as being the Company's billing cycles May through October

**Winter** - Defined as being the Company's billing cycles November through April.

#### TERMS OF PAYMENT

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### TERM OF CONTRACT

Contract for service shall be for a period of one year.

#### TURN-ON CHARGE

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### TERMS AND CONDITIONS

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company as filed with the New Hampshire Public Utilities Commission and set forth in Part II herein.

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## VI. RATE SCHEDULES

### **RATE SCHEDULE R-10- LOW INCOME RESIDENTIAL HEATING SERVICE**

#### **CHARACTER OF SERVICE**

Natural Gas or its equivalent having a nominal heat content of 1,000 Btu per cubic foot.

#### **APPLICABILITY**

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

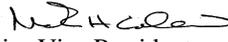
#### **AVAILABILITY**

Service hereunder is available under this rate at single, domestic locations for all purposes in individual private dwellings and individual apartments including condominiums and their facilities, which use gas as the principal household heating fuel, or at locations which are otherwise deemed ineligible for non-heating service based on availability, and if any member of the household qualifies for a benefit through one of the programs listed below.

Qualified Programs:

- a. Low Income Home Energy Assistance Program (LIHEAP)
- b. Electric Assistance Program (EAP)
- c. Supplemental Security Income Program
- d. Women, Infants and Children Program
- e. Commodity Surplus Foods Program (for women, infants and children)
- f. Elderly Commodity Surplus Foods Program
- g. Temporary Aid to Needy Families Program
- h. Housing Choice Voucher Program (also known as Section 8)
- i. Head Start Program
- J. Aid to the Permanently and Totally Disabled Program
- k. Aid to the Needy Blind Program
- l. Old Age Assistance Program
- m. Food Stamp Program
- n. Any successor program of the above listed program

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**VI. RATE SCHEDULES**

**RATE SCHEDULE R-10 - LOW INCOME RESIDENTIAL HEATING SERVICE**

(continued)

RATE – MONTHLY

Customer Charge				\$8.54 per month
Summer	-	First 50 therms	@	\$0.2348 per therm
	-	Excess 50 therms	@	\$0.2348 per therm
Winter	-	First 50 therms	@	\$0.2664 per therm
	-	Excess 50 therms	@	\$0.2664 per therm

MINIMUM BILL

The minimum monthly bill for gas service will be the Customer Charge Per Month.

COST OF GAS FACTOR AND LOCAL DELIVERY ADJUSTMENT CLAUSE

The provisions of the Company's Cost of Gas Charge, Part IV, and the Local Delivery Adjustment Charge, Part V, apply to gas sold under this rate schedule.

DEFINITIONS

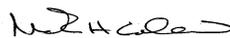
**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

TERMS OF PAYMENT

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

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## **VI. RATE SCHEDULES**

### **RATE SCHEDULE R-10 – LOW INCOME RESIDENTIAL HEATING SERVICE**

(continued)

#### **TERM OF CONTRACT**

Contract for service shall be for a period of one year.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company as filed with the New Hampshire Public Utilities Commission and set forth in Part II herein.

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Title: Senior Vice President

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**VI. RATE SCHEDULES**

**RATE SCHEDULE R-6 - RESIDENTIAL NON-HEATING SERVICE**

CHARACTER OF SERVICE

Natural Gas or its equivalent having a nominal heat content of 1,000 Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, , Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

Service hereunder is available for any residential purpose other than for use as the principal heating fuel except that this rate is not available at locations where usage in the six winter months of November through April is greater than or equal to 80% of annual usage and usage exceeds 100 therms in any winter month.

RATE - MONTHLY

Customer Charge				\$21.36 per month
Summer	-	First 10 therms	@	\$0.6227 per therm
	-	Excess 10 therms	@	\$0.6227 per therm
Winter	-	First 10 therms	@	\$0.6227 per therm
	-	Excess 10 therms	@	\$0.6227 per therm

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**RATE SCHEDULE R-6 - RESIDENTIAL NON-HEATING SERVICE**

(continued)

MINIMUM BILL

The minimum charge for gas service will be the Customer Charge per month.

COST OF GAS CLAUSE AND LOCAL DELIVERY ADJUSTMENT CLAUSE

The provisions of the Company's Cost of Gas Charge, Part IV, and the Local Delivery Adjustment Cost Charge, Part V, apply to gas sold under this rate schedule.

DEFINITIONS

**Summer** - Defined as being the Company's billing cycles May through October

**Winter** - Defined as being the Company's billing cycles November through April.

TERMS OF PAYMENT

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

TERM OF CONTRACT

Contract for service shall be for a period of one year.

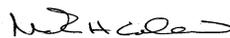
TURN-ON CHARGE

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

TERMS AND CONDITIONS

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company as filed with the New Hampshire Public Utilities Commission and set forth in Part II herein.

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Title: Senior Vice President

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VI. RATE SCHEDULES

NHPUC No 12 - Gas  
Northern Utilities, Inc.

RATE SCHEDULE IT

CHARACTERISTICS OF CUSTOMER

A customer receiving service under this rate schedule must submit to the Company evidence of the Customer's ability to use an alternate fuel.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

Service under this rate schedule will be provided on an interruptible basis and will be subject to interruption and/or curtailment in accordance with the Company's Delivery Terms and Conditions. Such interruption may include curtailment for a 30 consecutive day curtailment period once a year, during the Winter Season and at any other time that the Company determines such curtailment is necessary to allow it to optimize the use of the distribution system for service to firm sales and Delivery customers. Service may be arranged in conjunction with interruptible sales service. The customer may elect to enter into concurrent interruptible sales and Delivery contracts. Should the Customer elect to do so, the Customer must also elect on a monthly basis which service is to be utilized. In the event that concurrent service contracts are entered into, the Customer will be responsible for a single fixed meter charge, one which is the greater of the two individual meter charges for sales and Delivery service.

RATE - MONTHLY

Customer Charge Per Month			\$170.21
Summer	First 20,000 therms	@	\$0.0407 per therm
	Excess 20,000 therms	@	\$0.0347 per therm
Winter	First 20,000 therms	@	\$0.1299 per therm
	Excess 20,000 therms	@	\$0.1108 per therm

The above rates are subject to adjustment provided for in the Company's Delivery Terms and Conditions.

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Title: Senior Vice President

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## VI. RATE SCHEDULES

### RATE SCHEDULE IT (continued)

#### MINIMUM BILL

The minimum monthly bill for gas service will be the Customer Charge Per Month/

#### FLEXING OF RATES

The Company may, at its own discretion and on a nondiscriminatory basis, charge an Interruptible Customer at a rate less than the approved tariffed rates. In no case however, shall the Interruptible Transportation Rate be less than the short run marginal cost of the service plus \$0.01 per therm.

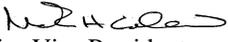
#### TERM OF CONTRACT

The term of contract for service shall be contained in a separate transportation service agreement but not less than a period of one year.

#### TERMS AND CONDITIONS

The Company's General Terms and Conditions, Delivery Terms and Conditions in effect from time to time, where not inconsistent with any specific provision hereof and the executed Interruptible Transportation Agreement between Customer and Company are a part of this schedule.

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Title: Senior Vice President

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## VI. RATE SCHEDULES

### **RATE SCHEDULE ISGS - INTERRUPTIBLE STAND-BY GAS SUPPLY**

#### APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

#### AVAILABILITY

Service hereunder is available on a best efforts basis and will be subject to interruption and/or curtailment in accordance with the Company's Terms and Conditions. The customer must execute a contract for Interruptible Transportation Service with the Company which includes a provision for this service.

#### COMMODITY COST

The cost per therm for Interruptible Stand-By Gas Supply Quantities scheduled by the Customer shall be equal to the Marginal Cost, which is equal to the variable cost of the Company's marginal source of supply for the Gas Day, plus a charge of up to \$.05 per therm used. In addition to the Commodity Costs, Customer shall pay any charges due and payable under contracts between Customer and the Company for Delivery service pursuant to the Company's Interruptible Transportation Rate Schedule.

#### SCHEDULING

A Customer with an executed Interruptible Stand-by Gas Supply Service agreement shall provide notification to the Gas Dispatching Center as soon as practicable, but no later than one hour after having received notification of interruption or curtailment from Customer's Supplier or Customer's Transporting Pipeline, requesting Stand-by Gas Supply Service. The Company shall notify Customer as soon as practicable if it can provide the quantities requested. The notification from the Customer to the Gas Dispatching Center shall include the Scheduled Stand-by Gas Supply Quantity for each day during the remainder of the calendar month. Thereafter, scheduling requirements for Stand-by Gas Supply Quantities shall coincide with and be made at the same time as provided for in Rate Schedule FGSS.

#### TERMS AND CONDITIONS

The Company's General Terms and Conditions, Delivery Terms and Conditions in effect from time to time, where not inconsistent with any specific provision hereof and the executed Firm Delivery Agreement between Customer and Company are a part of this schedule.

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**VI. RATE SCHEDULES**

**RATE SCHEDULE G-40 - COMMERCIAL AND INDUSTRIAL SERVICE**  
**(Low Annual Use, High Winter Use)**

CHARACTER OF SERVICE

The standard gas unit is defined as 100 cubic feet of gas containing one thousand (1,000) Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

RATE - MONTHLY

Customer Charge				\$72.26 per month
Summer	-	First 75 therms	@	\$0.1795 per therm
	-	Excess 75 therms	@	\$0.1795 per therm
Winter	-	First 75 therms	@	\$0.1795 per therm
	-	Excess 75 therms	@	\$0.1795 per therm

RATE ADJUSTMENT

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April XX, 2018.

## **VI. RATE SCHEDULES**

### **SCHEDULE G-40 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(Low Annual Use, High Winter Use)**

(continued)

#### **CHARACTERISTICS OF CUSTOMER**

A Customer receiving service under this schedule must have annual usage less than or equal to 8,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.

#### **MINIMUM BILL**

Customer charge per month.

#### **TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### **DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April XX,  
2018.

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-41 - COMMERCIAL AND INDUSTRIAL SERVICE**  
**(Medium Annual Use, High Winter Use)**

CHARACTER OF SERVICE

The standard gas unit is defined as 100 cubic feet of gas containing 1,000 Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

RATE - MONTHLY

Customer Charge				\$214.26 per month
Summer	-	All therms	@	\$0.1824 per therm
Winter	-	All therms	@	\$0.2334 per therm

RATE ADJUSTMENT

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

CHARACTERISTICS OF CUSTOMER

A Customer receiving service under this schedule must have annual usage of greater than 8,000 therms but less than or equal to 80,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.

Issued: April XX, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April XX, 2018.

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-41 - COMMERCIAL AND INDUSTRIAL  
SERVICE (Medium Annual Use, High Winter Use)**

(continued)

**MINIMUM BILL**

Customer charge per month.

**TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

**DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

**TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

**TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company, Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. 17-070, dated April X, 2018.

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-42 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(High Annual Use, High Winter Use)**

CHARACTER OF SERVICE

The standard gas unit is defined as 100 cubic feet of gas containing 1,000 Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

RATE - MONTHLY

Customer Charge				\$1,285.55 per month
Summer	-	All therms	@	\$0.1161 per therm
Winter	-	All therms	@	\$0.1909 per therm

RATE ADJUSTMENT

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

CHARACTERISTICS OF CUSTOMER

A Customer receiving service under this schedule must have annual usage greater than 80,000 therms and peak period usage greater than or equal to 67% of annual usage, as determined by the Company's records and procedures.

Issued: April XX, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April X,  
2018.

## **VI. RATE SCHEDULES**

### **RATE SCHEDULE G-42 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(High Annual Use, High Winter Use)**

(continued)

#### **MINIMUM BILL**

Customer charge per month.

#### **TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### **DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company, Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April X,  
2018

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-50 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(Low Annual Use, Low Winter Use)**

CHARACTER OF SERVICE

The standard gas unit is defined as 100 cubic feet of gas containing 1,000 Btu per cubic foot.

APPLICABILITY

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

AVAILABILITY

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

RATE - MONTHLY

Customer Charge				\$72.26 per month
Summer	-	First 75 therms	@	\$0.1795 per therm
	-	Excess 75 therms	@	\$0.1795 per therm
Winter	-	First 75 therms	@	\$0.1795 per therm
	-	Excess 75 therms	@	\$0.1795 per therm

RATE ADJUSTMENT

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

Issued: April XX, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

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## **VI. RATE SCHEDULES**

### **RATE SCHEDULE G-50 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(Low Annual Use, Low Winter Use)**

**(continued)**

#### **CHARACTERISTICS OF CUSTOMER**

A Customer receiving service under this schedule must have annual usage less than or equal to 8,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.

#### **MINIMUM BILL**

Customer charge per month.

#### **TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### **DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company, Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
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Issued By:   
Title: Senior Vice President

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2018.

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-51 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(Medium Annual Use, Low Winter Use)**

**CHARACTER OF SERVICE**

The standard gas unit is defined as 100 cubic feet of gas containing 1,000Btu per cubic foot.

**APPLICABILITY**

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

**AVAILABILITY**

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

**RATE - MONTHLY**

Customer Charge				\$214.26 per month
Summer	-	First 1,000 therms	@	\$0.1287 per therm
	-	Excess 1,000 therms	@	\$0.1046 per therm
Winter	-	First 1,300 therms	@	\$0.1648 per therm
	-	Excess 1,300 therms	@	\$0.1346 per therm

**RATE ADJUSTMENT**

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

Issued: April XX, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April X,  
2018.

## **VI. RATE SCHEDULES**

### **RATE SCHEDULE G-51 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(Medium Annual Use, Low Winter Use)**

(continued)

#### **CHARACTERISTICS OF CUSTOMER**

A Customer receiving service under this schedule must have annual usage of greater than 8,000 therms but less than or equal to 80,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.

#### **MINIMUM BILL**

Customer charge per month.

#### **TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### **DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company, Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April X,  
2018.

**VI. RATE SCHEDULES**

**RATE SCHEDULE G-52 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(High Annual Use, Low Winter Use)**

**CHARACTER OF SERVICE**

The standard gas unit is defined as 100 cubic feet of gas containing 1,000 Btu per cubic foot.

**APPLICABILITY**

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

**AVAILABILITY**

This schedule is available at single locations throughout the territory served by the Company to Commercial and Industrial customers having certain characteristics, as defined below, for all purposes when gas is for their exclusive use and not for resale.

**RATE - MONTHLY**

Customer Charge				\$1,285.55 per month
Summer	-	All therms	@	\$0.0762 per therm
Winter	-	All therms	@	\$0.1655 per therm

**RATE ADJUSTMENT**

The above rate is subject to adjustment according to the provisions of the Cost of Gas Charge, Part IV, if applicable, and the Local Delivery Adjustment Charge, Part V.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April X, 2018.

## **VI. RATE SCHEDULES**

### **RATE SCHEDULE G-52 - COMMERCIAL AND INDUSTRIAL SERVICE**

**(High Annual Use, Low Winter Use)**

(continued)

#### **CHARACTERISTICS OF CUSTOMER**

A Customer receiving service under this schedule must have annual usage greater than 80,000 therms and peak period usage less than 67% of annual usage, as determined by the Company's records and procedures.

#### **MINIMUM BILL**

Customer charge per month.

#### **TERMS OF PAYMENT**

Bills are due and payable upon presentation. A late payment charge at a rate to be determined by the NHPUC from time to time will be assessed from the date of the bill on balances unpaid within twenty five days after the billing date. When bills are paid by remittance through the mail, the postmark on the envelope will be considered as the date of payment.

#### **DEFINITIONS**

**Summer** - Defined as being the Company's billing cycles May through October.

**Winter** - Defined as being the Company's billing cycles November through April.

#### **TURN-ON CHARGE**

Where service is established or re-established during regular working hours, a service charge of \$36.00 will be required; after hours and on Saturday, Sunday or holidays a charge of \$75.00 will be required.

#### **TERMS AND CONDITIONS**

Service under this Rate Schedule is subject to the General Terms and Conditions of the Company, Part II, and, if applicable, the Delivery Service Terms and Conditions, Part VII, as filed with the New Hampshire Public Utilities Commission and set forth herein.

Issued: April X, 2018  
Effective: May 1, 2018

Issued By:   
Title: Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April xx,  
2018.



**NORTHERN UTILITIES - NEW HAMPSHIRE DIVISION**  
**SUMMER SEASON RESIDENTIAL RATES**

<b>Summer Season May 2018 - October 2018</b>		<b>Tariff Rates</b>	<b>Total Delivery Rates (Includes LDAC)</b>	<b>Total Billed Rates Tariff Rates, LDAC Plus Cost of Gas</b>
Residential Heating	<b><u>Tariff Rate R 5:</u></b> Monthly Customer Charge First 50 therms All usage over 50 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$21.36 \$0.5870 \$0.5870 <b>\$0.0589</b>  <b>\$0.3975</b>	\$21.36 <b>\$0.6459</b> <b>\$0.6459</b>	\$21.36 <b>\$1.0434</b> <b>\$1.0434</b>
Residential Heating Low Income	<b><u>Tariff Rate R 10:</u></b> Monthly Customer Charge First 50 therms All usage over 50 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$8.54 \$0.2348 \$0.2348 <b>\$0.0589</b>  <b>\$0.3975</b>	\$8.54 <b>\$0.2937</b> <b>\$0.2937</b>	\$8.54 <b>\$0.6912</b> <b>\$0.6912</b>
Residential Non-Heating	<b><u>Tariff Rate R 6:</u></b> Monthly Customer Charge First 10 therms All usage over 10 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$21.36 \$0.6227 \$0.6227 <b>\$0.0589</b>  <b>\$0.3975</b>	\$21.36 <b>\$0.6816</b> <b>\$0.6816</b>	\$21.36 <b>\$1.0791</b> <b>\$1.0791</b>

Issued: April X, 2018

Effective: With Service Rendered On and After May 1, 2018

Authorized by NHPUC Order No. XXX in Docket No. DG 17-170, dated April X, 2018

Issued by:

*Handwritten Signature*

Title:

Senior Vice President

**NORTHERN UTILITIES - NEW HAMPSHIRE DIVISION**  
**WINTER SEASON C & I RATES**

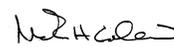
Winter Season November 2017 - April 2018	Tariff Rates	Total Delivery Rates (Includes LDAC)	Total Billed Rates Tariff Rates, LDAC Plus Cost of Gas
C&I Low Annual/High Winter <u><b>Tariff Rate G 40:</b></u> Monthly Customer Charge \$67.45 First 75 therms \$0.1844 All usage over 75 therms \$0.1844 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.8779	\$67.45 \$0.1844 \$0.1844 \$0.0293 \$0.8779	\$67.45 \$0.2137 \$0.2137	\$67.45 \$1.0916 \$1.0916
C&I Low Annual/Low Winter <u><b>Tariff Rate G 50:</b></u> Monthly Customer Charge \$67.45 First 75 therms \$0.1844 All usage over 75 therms \$0.1844 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.7767	\$67.45 \$0.1844 \$0.1844 \$0.0293 \$0.7767	\$67.45 \$0.2137 \$0.2137	\$67.45 \$0.9904 \$0.9904
C&I Medium Annual/High Winter <u><b>Tariff Rate G 41:</b></u> Monthly Customer Charge \$196.73 All usage \$0.2327 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.8779	\$196.73 \$0.2327 \$0.0293 \$0.8779	\$196.73 \$0.2620	\$196.73 \$1.1399
C&I Medium Annual/Low Winter <u><b>Tariff Rate G 51:</b></u> Monthly Customer Charge \$196.73 First 1,300 therms \$0.1749 All usage over 1,300 therms \$0.1467 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.7767	\$196.73 \$0.1749 \$0.1467 \$0.0293 \$0.7767	\$196.73 \$0.2042 \$0.1760	\$196.73 \$0.9809 \$0.9527
C&I High Annual/High Winter <u><b>Tariff Rate G 42:</b></u> Monthly Customer Charge \$1,124.19 All usage \$0.1993 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.8779	\$1,124.19 \$0.1993 \$0.0293 \$0.8779	\$1,124.19 \$0.2286	\$1,124.19 \$1.1065
C&I High Annual/Low Winter <u><b>Tariff Rate G 52:</b></u> Monthly Customer Charge \$1,124.19 All usage \$0.1770 <b>LDAC</b> \$0.0293 <u><b>Gas Cost Adjustment:</b></u> Cost of Gas \$0.7767	\$1,124.19 \$0.1770 \$0.0293 \$0.7767	\$1,124.19 \$0.2063	\$1,124.19 \$0.9830

Issued: April X, 2018

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Authorized by NHPUC Order No. XXX in Docket No. DG 17-170, dated April X, 2018

Issued by:



Title:

Senior Vice President

**NORTHERN UTILITIES - NEW HAMPSHIRE DIVISION**  
**SUMMER SEASON C&I RATES**

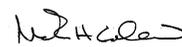
<b>Summer Season May 2018 - October 2018</b>		<b>Tariff Rates</b>	<b>Total Delivery Rates (Includes LDAC)</b>	<b>Total Billed Rates Tariff Rates, LDAC Plus Cost of Gas</b>
C&I Low Annual/High Winter	<b><u>Tariff Rate G 40:</u></b> Monthly Customer Charge First 75 therms All usage over 75 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$72.26 \$0.1795 \$0.1795 <b>\$0.0322</b>  <b>\$0.4254</b>	\$72.26 <b>\$0.2117</b> <b>\$0.2117</b>	\$72.26 <b>\$0.6371</b> <b>\$0.6371</b>
C&I Low Annual/Low Winter	<b><u>Tariff Rate G 50:</u></b> Monthly Customer Charge First 75 therms All usage over 75 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$72.26 \$0.1795 \$0.1795 <b>\$0.0322</b>  <b>\$0.3543</b>	\$72.26 <b>\$0.2117</b> <b>\$0.2117</b>	\$72.26 <b>\$0.5660</b> <b>\$0.5660</b>
C&I Medium Annual/High Winter	<b><u>Tariff Rate G 41:</u></b> Monthly Customer Charge All usage <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$214.26 \$0.1824 <b>\$0.0322</b>  <b>\$0.4254</b>	\$214.26 <b>\$0.2146</b>	\$214.26 <b>\$0.6400</b>
C&I Medium Annual/Low Winter	<b><u>Tariff Rate G 51:</u></b> Monthly Customer Charge First 1,000 therms All usage over 1,000 therms <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$214.26 \$0.1287 \$0.1046 <b>\$0.0322</b>  <b>\$0.3543</b>	\$214.26 <b>\$0.1609</b> <b>\$0.1368</b>	\$214.26 <b>\$0.5152</b> <b>\$0.4911</b>
C&I High Annual/High Winter	<b><u>Tariff Rate G 42:</u></b> Monthly Customer Charge All usage <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$1,285.55 \$0.1161 <b>\$0.0322</b>  <b>\$0.4254</b>	\$1,285.55 <b>\$0.1483</b>	\$1,285.55 <b>\$0.5737</b>
C&I High Annual/Low Winter	<b><u>Tariff Rate G 52:</u></b> Monthly Customer Charge All usage <b>LDAC</b> <b><u>Gas Cost Adjustment:</u></b> Cost of Gas	\$1,285.55 \$0.0762 <b>\$0.0322</b>  <b>\$0.3543</b>	\$1,285.55 <b>\$0.1084</b>	\$1,285.55 <b>\$0.4627</b>

Issued: April X, 2018

Effective: With Service Rendered On and After May 1, 2018

Authorized by NHPUC Order No. XXX in Docket No. DG 17-170, dated April X, 2018

Issued by:



Title:

Senior Vice President

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

1. Rates and Charges

- 1.1 The Company shall apply this tariff on a non-discriminatory and non-preferential basis to all Customers who obtain service from the Company, except as this tariff is explicitly modified by order of the NHPUC. The provisions of Part VII, Section 20 will specifically apply to all entities designated by the Customer as set forth in Part VII, Section 20.5 to supply Gas to a Designated Receipt Point for the Customer’s account.
- 1.2 The Company reserves the right to impose reasonable fees and charges pursuant to the various provisions of this tariff.
- 1.3 In the event that the Company incurs minimum bill, inventory, transition, take or pay, imbalance, or any other charges associated with the provision of Delivery Service to Customers, the Company may impose an additional charge on the Suppliers serving said Customers as approved by the NHPUC.

2. Definitions

**Adjusted Target Volume (“ATV”):**

The volume of Gas determined by the Company using a Consumption Algorithm and required to be nominated and delivered each Gas Day by the Supplier on behalf of Customers taking non-daily metered Delivery Service.

**Aggregation Pool:**

One or more Customer accounts whose Gas Usage is served by the same Supplier and aggregated pursuant to Part VII, Section 20.6 of this tariff for operational purposes, including but not limited to nominating, scheduling, and balancing Gas deliveries to Designated Receipt Point(s) within the associated Gas Service Area.

**Annual Reassignment Date:** Five (5) Business Days prior to November 1 of each year when the Company reassigns Capacity to Suppliers pursuant to Part VII, Section 11.6 of this tariff.

**Annual TCQ Review:** Process outlined in Part VII, Section 11.3.6 of this tariff pursuant to which the Company reviews Customer TCQ each year.

**Assignment Date:** Five (5) Business Days prior to the first Gas Day of each month when the Company assigns Capacity to Suppliers pursuant to Part VII, Section 11.4 of this tariff.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- Authorization Number:** A number unique to the Customer generated by the Company and printed on the Customer's bill that the Customer must furnish to the Supplier to enable the Supplier to obtain the Customer's Gas Usage information pursuant to Part VII, Section 20.4, and to initiate or terminate Supplier Service as set forth in Part VII, Section 20.5 of this tariff.
- Btu:** See Part II, Section 2.
- Business Day:** Monday through Friday excluding holidays recognized by the Company. Where relevant, a Business Day shall consist of the hours during which the Company is open for business with the public. If any performance date referenced in this Tariff is not a Business Day, such performance shall be the next succeeding Business Day.
- Capacity:** Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity as defined in this tariff.
- Capacity Allocators:** The estimated proportions of the Customer's Total Capacity Quantity that comprise Pipeline Capacity, Storage Withdrawal Capacity and Peaking Capacity.
- Capacity Assigned Customer:** A Customer with a TCQ greater than zero pursuant to Part VII, Section 11.3.2.
- Capacity Exempt Customer:** A Customer assigned a TCQ of zero pursuant to Part VII, Section 11.3.3 or Part VII, Section 11.3.4, or a customer with a TCQ determined to be zero pursuant to Part VII, Section 11.3.2.
- Capacity Mitigation Service:** The service available to Suppliers in accordance with Part VII, Section 11.10.
- Capacity Ratio:** Capacity divided by estimated aggregate Gas Usage of Sales Service Customers on the Peak Day and estimated aggregate Gas Usage of Capacity Assigned Customers on the Peak Day.
- City Gate:** The interconnection between a Delivering Pipeline and the Company's distribution facilities.
- Commodity:** See Gas.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**Company:** Northern Utilities, Inc.

**Company Gas Allowance:** The difference between the sum of all amounts of Gas received into the Company's distribution system (including Gas produced by the Company) and the sum of all amounts of Gas delivered from the Company's distribution system divided by said amount of Gas received. Such difference shall include but not be limited to Gas consumed by the Company for its own purposes, line losses, and Gas vented and lost as a result of force majeure, excluding Gas otherwise accounted for.

**Company-Managed Supplies:** Capacity and Supply contracts held and managed by the Company and made available to the Supplier pursuant to Part VII, Section 11.9 of this tariff including Supply-sharing contracts and load-management contracts.

**Consumption Algorithm:** A mathematical formula used to estimate a Customer's daily consumption.

**Critical Day:** In accordance with Part VII, Section 16 of this tariff, a day declared at any time by the Company in its reasonable discretion when unusual operating conditions may jeopardize operation of the Company's distribution system.

**Customer:** The recipient of Delivery Service whose Gas Usage is recorded by a meter or group of meters at a specific location and who is a customer of record of the Company.

**Daily Baseload:** The Customer's average usage per Gas Day that is assumed to be unrelated to weather.

**Daily Index:** The mid-point of the range of prices as published by Gas Daily under the heading "Daily Price Survey, Midpoint, Citygates, Tennessee/Zone 6 (delivered)" for the relevant Gas Day listed under "Flow date(s)".

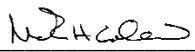
In the event that the Gas Daily index becomes unavailable, the Company shall apply its daily marginal cost of Gas as the basis for this calculation until such time that the NHPUC approves a suitable replacement.

**Dekatherm:** Ten Therms.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- Delivery Point:** The interconnection between the Company’s facilities and the Customer’s facilities.
- Delivery Service:** See Part II Section 2
- Design Peak Season:** The forecasted Peak Season during which the Company’s system experiences the highest aggregate Gas Usage.
- Designated Receipt Point:** For each Customer, the Company designated interconnection between a Transporting Pipeline and the Company’s distribution facilities at which point, or such other point as the Company may designate from time to time for operational purposes, the Supplier will make deliveries of Gas for the Customer’s account.
- Designated Representative:** The designated representative of the Customer, who shall be authorized to act for, and conclusively bind, the Customer regarding Delivery Service in accordance with the provisions of Part VII, Section 21 of this tariff.
- Effective Degree Day:** A measure used to estimate weather-sensitive Gas consumption calculated by subtracting the average temperature for each day from the number 65, plus factoring in wind speed. Each degree day that represents a degree below 65 is considered an Effective Degree Day.
- Gas:** Natural Gas that is received by the Company from a Transporting Pipeline at the Designated Receipt Point and delivered by the Company to the Delivery Point for the Customer’s account. In addition, the term shall include amounts of vaporized liquefied natural Gas and/or propane-air vapor that are introduced by the Company into its system and made available to the Customer as the equivalent of natural Gas that the Customer is otherwise entitled to have delivered by the Company.
- Gas Day:** A period of twenty-four (24) consecutive hours beginning at 10:00 a.m., E.T., and ending at 10:00 a.m., E.T., the next calendar day, or other such hours used by the Transporting Pipeline.
- Gas Service Area:** An area within the Company’s distribution system as defined in Part VII, Section 4 of this tariff, for the purposes of administering Capacity

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Title: Senior Vice President

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

assignments, Nominations, balancing, imbalance trading, and Aggregation Pools.

**Gas Usage:** The actual quantity of Gas used by the Customer as measured by the Company's metering equipment at the Delivery Point.

**Heating Factor:** The Customer's estimated weather-sensitive Gas consumption per Heating Degree Day.

**Interruptible Delivery Service:** Delivery Service provided to the Customer by the Company on less than a year-round basis, or as local distribution operating conditions permit.

**MMBtu :** One million Btus.

**Maximum Daily Peaking Quantity ("MDPQ"):** The portion of a Customer's Total Capacity Quantity identified and allocated as Peaking Capacity, such that the maximum daily amount of Gas that can be withdrawn from a Supplier's Peaking Service Account pursuant to Part VII, Section 14 of this tariff shall be equal to the sum of the MDPQs for all Customers in that Supplier's Aggregation Pool.

**Month:** A calendar month of Gas Days.

**Monthly Index:** The average of the Daily Index numbers for all Gas Days in a Month.

**NHPUC:** The New Hampshire Public Utilities Commission.

**Nomination:** The notice given by the Supplier to the Company that specifies, in accordance with the Standard Nomination Form attached as Appendix B, an intent to deliver a quantity of Gas to the Designated Receipt Point(s) on behalf of one or more Customers, including the volume to be received, the Designated Receipt Point(s), the Transporting Pipeline, the delivering contract(s), the shipper, and other such non-confidential information as may be reasonably required by the Company.

**Off-Peak Season:** The consecutive months of May to October, inclusive.

**On-System Peaking Capacity:** Capacity resources such as Liquefied Natural Gas plants

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

located within the Company’s service territory.

**Operational Flow Order (“OFO”):** The Company’s instructions to the Supplier to take such action as conditions require including, but not limited to, diverting Gas to or from the Company’s distribution system pursuant to Part VII, Section 16 of this tariff.

**Peak Day:** The forecasted Gas Day during which the Company’s system experiences the highest aggregate Gas Usage.

**Peak Season:** The consecutive months of November to April, inclusive.

**Peaking Capacity:** Peaking Capacity includes On-System Peaking Capacity and Granite State Gas Transmission, Inc. (“Granite”) capacity not designated as either Pipeline Capacity or Storage Withdrawal Capacity.

**Peaking Service:** A Company-managed resource consisting of On-System Peaking Capacity and associated Peaking Supply.

**Peaking Service Account:** An account whose balance indicates the total volumes of Peaking Service resources available to a Supplier, where the maximum balance in the account shall equal the Peaking Supply assigned to the Supplier pursuant to this tariff.

**Peaking Service Rule Curve:** A system of operational parameters associated with the use of the Company’s Peaking Capacity including, but not limited to, indicators of the necessary levels of Peaking Supply that must be maintained in Suppliers’ Peaking Service Accounts in order for the Company to meet system demands under Design Peak Season conditions. The Company will communicate, by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means, the Peaking Service Rule Curve as identified in Part VII, Section 14 of this tariff.

**Peaking Supply:** Peaking Supply includes only supply from On-System Peaking Capacity resources.

**Peaking Supply Allocator:** An allocation factor that represents the proportion of a Customer’s estimated Gas Usage during the Design Peak Season that is generally served with Peaking Service supplies.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**Pipeline Capacity:** Transportation capacity on interstate pipeline systems normally used for deliveries of Gas to the Company's city gates, exclusive of Storage Withdrawal Capacity. Granite capacity may be assigned as Pipeline Capacity when associated with Pipeline Capacity resources upstream of Granite.

**Pre-Determined Allocation:** Instructions from the Supplier to the Company for the method allocation of discrepancies in confirmed Nominations among the Supplier's Aggregation Pools and/or Customers as set forth in the Supplier Service Agreement.

**Rate Schedule:** The schedule of rates included in this tariff.

**Reference Period:** A period of at least twelve (12) months for which a Customer's Gas Usage information is typically available to the Company.

**Sales Service:** See Part II, Section 2.

**Seasonal Storage Capacity:** Contracts for Capacity in off-system storage facilities used to accumulate and maintain Gas inventories for re-delivery to the Company's city gates normally during the Peak Season.

**Storage Withdrawal Capacity:** Capacity for the withdrawal of Gas inventories maintained in off-system storage facilities, as well as the Pipeline Capacity used to deliver such Gas to the Company's city gates. Granite capacity may be assigned as Storage Withdrawal Capacity when associated with Storage Withdrawal Capacity resources upstream of Granite.

**Supplier:** See Part II, Section 2.

**Supplier Service:** See Part II, Section 2.

**Supplier Service Agreement:** An agreement, substantially in the form set forth in Appendix B, which must be executed by the Company and a Supplier in order for the Supplier to serve Customers on the Company's system.

**Supply:** See Gas.

**Therm:** See Part II, Section 2

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**Total Capacity Quantity ("TCQ"):** The total amount of Capacity assignable to a Supplier on behalf of a Customer.

**Transporting Pipeline:** The interstate pipeline company that transports and delivers Gas to the Designated Receipt Point.

3. Character of Service

3.1 All rates within the Rate Schedule are predicated upon service to a Customer at a single Delivery Point and metering installation, except as otherwise specifically provided by a given rate. Where service is supplied to a Customer at more than one Delivery Point or metering installation, each single Delivery Point or metering installation shall be considered to be a separate Customer for purposes of applying the Rate Schedule, except when a Customer is served through multiple points of delivery or metering installations for the Company's own convenience.

3.2 The Company may refuse to supply service to loads of unusual characteristics which, in its sole reasonable judgment, might adversely affect the quality of service supplied to other Customers, the public safety or the safety of the Company's personnel. In lieu of such refusal, the Company may require a Customer to install any necessary regulating and protective equipment in accordance with the requirements and specifications of the Company.

4. Gas Service Areas And Designated Receipt Points

4.1 There shall be one (1) Gas Service Area defined for purposes of administering Capacity assignments, Nominations, balancing, imbalance trading, and Aggregation Pools pursuant to this tariff. Each such Gas Service Area shall be defined to include the municipalities listed within each such Gas Service Area, as follows:

(1) Area 1: Northern Utilities' Inc. New Hampshire Gas Service Area

The towns of Brentwood, Dover, Durham, East Kingston, East Rochester, Exeter, Gonic, Greenland, Hampton, Hampton Falls, Kensington, Madbury, Newington, North Hampton, Plaistow, Portsmouth, Rochester, Salem, Seabrook, Somersworth, Stratham, and limited areas of Atkinson, Rollinsford and the contiguous territory served by the Company.

4.2 For each Aggregation Pool as set forth by Part VII, Section 20.6, the Company will designate at least one specific interconnection between a Transporting

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Pipeline and the Company’s distribution facilities, at which point, or such other point as the Company may designate from time to time, the Supplier will make deliveries for the Aggregation Pool. The interconnections that the Company may assign as the Customer’s Designated Receipt Point for the Aggregation Pool are as follows:

- (1) Name Transporting Pipeline: Granite State Gas Transmission, Inc.  
Names of City Gates: New Salem, Forrest St., Sweethill Rd., East Kingston, Exeter West, Epping Rd., Newfields Rd., Greenland Rt. 151, Ocean Road, Panaway, Hospital Station Borthwick Ave, Pease Development, Gosling Rd., Schiller, Nimble Hill, Dover Point, New Bellamy Ln., Varney Brook.

5. Customer Request for Service From Company

- 5.1 Application for Delivery Service, Sales Service, or any other service offered by the Company to a Customer will be received by any duly authorized representative or agent of the Company.
- 5.2 Before any service from the Company may commence, the Customer must request such service. A Customer applying for Delivery Service only must also arrange for Supplier Service with a Supplier pursuant to Part VII, Section 20. A

Customer may act as its own Supplier provided it meets all of the Supplier requirements delineated in Part VII, Section 20.

6 Quality and Condition of Gas

- 6.1 Gas delivered to the Company by or for the Customer shall conform, in all respects, to the Gas quality standards of the Transporting Pipeline. All Gas tendered by a Supplier at a Designated Receipt Point shall be of merchantable quality and shall be interchangeable with Gas purchased by the Company from its Suppliers. The Company reserves the right to refuse non-conforming Gas.
- 6.2 In no event shall the Company be obligated to accept and deliver any Gas that does not meet the quality standards of the Transporting Pipeline.
- 6.3 The Company reserves the right to commingle Gas tendered by a Supplier at a Designated Receipt Point with other Gas, including liquefied natural Gas and propane-air vapor.
- 6.4 Gas tendered by a Supplier at a Designated Receipt Point will be at a pressure sufficient to enter the Company’s distribution system without requiring the

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Company to adjust its normal operating pressures to receive the Gas. The Company has no obligation to receive Gas at a pressure that exceeds the maximum allowable operating pressure of the Company's distribution system at the Designated Receipt Point.

7. Possession of Gas

7.1 Gas shall be deemed to be in the control and possession of the Company after such Gas is delivered to the Designated Receipt Point and until the Gas is delivered to the Customer at the Delivery Point. The Company shall not be responsible for the Gas when the Gas is not in the Company's control and possession.

7.2 The Company shall not be liable to the Supplier or the Customer for any loss arising from or out of Delivery Service, including loss of Gas in the possession of the Company or for any other cause, except for the negligence of the Company's own employees or agents.

8. Company Gas Allowance

8.1 The amount of Gas tendered by the Supplier to the Designated Receipt Point will be reduced, upon delivery to the Customer's Delivery Point, by the Company Gas Allowance. The Company Gas Allowance shall be in effect from November 1 through October 31. Such adjustment shall be recalculated prior to the Company's Peak Season cost of Gas filing with the NHPUC.

9. Daily Metered Delivery Service

9.1 Applicability

Part VII, Section 9 of this tariff shall be applicable in the following conditions:

9.1.1 All Customers whose service may be interrupted at any time during the year shall be required to take daily metered Delivery Service.

9.1.2 Any Customer, regardless of annual Gas Usage, may elect daily metered Delivery Service.

9.1.3 Customers taking Delivery Service under Rate Schedules G-42 and G-52 are required to take Daily Metered Delivery Service. In addition, the Company may require a Customer to take Daily Metered Delivery Service if the Company determines that the daily Gas Usage characteristics of the Customer cannot be accurately modeled using the Company's Consumption Algorithm or if the volumes reasonably anticipated by the Company to be used by the Customer are

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

of a size that may materially affect the integrity of the Company's distribution system.

### 9.2 Delivery Service Provided

For Customers taking Daily Metered Delivery Service, this service provides firm, year-round delivery of Customer purchased Gas from the Designated Receipt Point to the Delivery Point on any Gas Day.

### 9.3 Nominations and Scheduling of Service

9.3.1 The Supplier is responsible for nominating and delivering to the Designated Receipt Point(s) every Gas Day an amount of Gas that equals the aggregated Gas Usage of Customers in the Aggregation Pool plus the Company Gas Allowance in accordance with Part VII, Section 8 of this tariff.

9.3.2 Nominations shall be communicated to the Company by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means.

9.3.3 Nominations for the first Gas Day of a Month shall be submitted to the Company no later than two (2) hours prior to the deadline for first of the Month Nominations of the Transporting Pipeline or such lesser period as determined by the Company. The Company will make available, from time to time, a schedule of Nomination due dates. Nominations on weekends, holidays, and non-business hours will be accepted by the Company on a basis consistent with that utilized for its own operations.

9.3.4 The Supplier may make daily Nominations including, but not limited to, changes to existing Nominations, within a given Month no later than two (2) hours prior to the deadline for daily Nominations of the Transporting Pipeline for the Gas Day on which the Nomination is to be effective, or such lesser period as determined by the Company. Nominations on weekends, holidays, and non-business hours will be accepted by the Company on a basis consistent with that utilized for its own operations.

9.3.5 The Supplier may make intra-Gas Day Nominations, including but not limited to changes to existing Nominations, within a given Gas Day no later than two (2) hours prior to the intra-Gas Day Nomination deadline for the Transporting Pipeline on which the Nomination is to be effective, or such lesser period as determined by the Company. Intra-Gas Day Nominations on weekends, holidays, and non-business hours will be

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

accepted by the Company on a basis consistent with that utilized for its own operations.

9.3.6 Nominations will be conditionally accepted by the Company pending confirmation by the Transporting Pipeline. The Company will attempt to confirm the nominated volume with the Transporting Pipeline. In the event of a discrepancy between the volume nominated to the Company by the Supplier and the volume nominated by the Supplier to the Transporting Pipeline, the lower volume will be deemed confirmed. The Company will allocate such discrepancy based on a predetermined allocation method set forth in the Supplier Service Agreement. If no predetermined allocation method has been established prior to the event of such discrepancy, the Company will allocate the discrepancy on a pro rata basis.

9.3.7 Nominations may be rejected, at the sole reasonable discretion of the Company, if they do not satisfy the conditions for Delivery Service in effect from time to time.

9.4 Determination of Receipts

9.4.1 The quantity of Gas deemed received by the Company for the Supplier's Aggregation Pool at the Designated Receipt Point(s) will equal the volume so scheduled by the Transporting Pipeline(s).

9.4.2 The Company Gas Allowance will be assessed against receipts pursuant to Part VII, Section 8 of this tariff.

9.5 Metering and Determination of Deliveries

9.5.1 The Company shall furnish and install, at the Customer's expense, telemetering equipment and any related equipment for the purpose of measuring Gas Usage at each Customer's Delivery Point. Telemetering equipment shall remain the property of the Company at all times. The Company shall require each Customer to install and maintain, at the Customer's expense, reliable telephone lines and electrical connections that meet the Company's operating requirements. The Company may require the Customer to furnish a dedicated telephone line. If the Customer fails to maintain such telephone lines and electrical connections for fourteen (14) consecutive days after notification by the Company, the Company may discontinue service to the Customer.

9.5.2 Should a Customer or a Supplier request that additional telemetering equipment or a communication device be attached to the existing telemetering equipment in addition to that provided pursuant to Part VII,

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Section 9.5.1, the Company shall install, test, and maintain the requested telemetering equipment or communication device; provided that such telemetering equipment or communication device does not interfere with the operation of the equipment required for the Company's purposes and otherwise meet the Company's requirements. The Customer or Supplier shall provide such telemetering equipment or communication device, unless the Company elects to do so. The Customer or Supplier shall bear the cost of providing and installing the telemetering equipment, communication device, or any other related equipment, and shall have electronic access to the Customer's Gas Usage information. Upon installation, the telemetering equipment or communication device shall become the property of the Company and will be maintained by the Company. The Company shall bill the Customer or Supplier after installation.

9.5.3 The Company shall complete installation of telemetering equipment and communication devices, if reasonably possible, within sixty (60) days of receiving a written request from the Customer or Supplier provided that the Customer completes the installation of any required telephone or electrical connections within ten (10) days of such request.

9.5.4 The Company may, at its sole discretion, bill the Customer on a calendar month or cycle month basis.

9.6 Balancing

9.6.1 The Supplier must maintain a balance between daily receipts and daily Gas Usage within the following tolerances:

Off-Peak Season: The difference between the Supplier's aggregate actual receipts on the Transporting Pipeline to each Gas Service Area and the aggregated Gas Usage of Customers in the Aggregation Pool shall be within 15% of said receipts. The Supplier shall be charged 0.1 times the Daily Index for all differences not within the 15% tolerance.

Peak Season: The difference between the Supplier's aggregate actual receipts on the Transporting Pipeline to each Gas Service Area and the aggregated Gas Usage of Customers in the Aggregation Pool shall be within 10% of said receipts. The Supplier shall be charged 0.5 times the Daily Index for all differences not within the 10% tolerance.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Critical Day(s): The Company will determine if the Critical Day will be aggravated by an under-delivery or an over-delivery, and so notify the Supplier when a Critical Day is declared pursuant to Part VII, Section 16.

Critical Day That Will Be Aggravated by Under-delivery.

Supplier who under-delivers. A Supplier who under-delivers on a Critical Day that will be aggravated by under-delivery shall be charged 5 times the Daily Index for the aggregated Gas Usage of Customers in the Aggregation Pool that exceeds 102% of the Supplier's aggregate actual receipts on the Transporting Pipeline to each Gas Service Area.

Supplier who over-delivers. A Supplier who over-delivers on a Critical Day that will be aggravated by under-delivery shall be charged 0.1 times the Daily Index to the extent that the difference between the Supplier's aggregate actual receipts on the Transporting Pipeline to each Gas Service Area and the aggregated Gas Usage of Customers in the Aggregation Pool exceeds 20% of said receipts [(Receipts - Usage) > (20% x Receipts)].

Critical Day That Will Be Aggravated by Over-delivery.

Supplier who under-delivers. A Supplier who under-delivers on a Critical Day that will be aggravated by over-delivery shall be charged 0.1 times the Daily Index to the extent that the difference between the Supplier's aggregated Gas Usage of Customers in the Aggregation Pool exceeds 120% of the Supplier's aggregate actual receipts on the Transporting Pipeline to each Gas Service Area.

Supplier who over-delivers. A Supplier who over-delivers on a Critical Day that will be aggravated by over-delivery shall be charged 5 times the Daily Index to the extent that the difference between the Supplier's actual receipts on the Transporting Pipeline to each Gas Service Area and the Supplier's aggregated Gas Usage of Customers in the Aggregation Pool exceeds 2% of said receipts [(Receipts - Usage) > (2% x Receipts)].

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Point Specific Balancing: In the event that the Transporting Pipeline requires its customers to balance on a point-specific basis, the Supplier must balance pursuant to this Section at each Designated Receipt Point.

- 9.6.2 If the Supplier has an accumulated imbalance within a Month, the Supplier may nominate to reconcile such imbalance, subject to the Company's approval, which approval shall not be unreasonably withheld.
- 9.6.3 In addition to the charges set forth in Part VII, Section 9.6.1, the Company shall flow through to the Supplier any pipeline imbalance penalty charges attributable to the Supplier.
- 9.6.4 If, as a result of the Company interrupting or curtailing service pursuant to Part VII, Section 18 of this tariff, the Supplier incurs a daily imbalance penalty due to over-delivery, the Company will waive such penalty for the First Day of the interruption or curtailment period. If the Company has issued notice of an interruption or curtailment in service and the Supplier is unable to change its Nomination, or if the Supplier's Gas has been delivered to the Designated Receipt Point, then the Company will credit such Gas against the Supplier's imbalance.
- 9.6.5 The Supplier will maintain a balance between receipts at the Designated Receipt Point(s) and the aggregated Gas Usage of Customers in each Aggregation Pool. If the Transporting Pipeline posts notice on its electronic bulletin board that its customers will be required to adhere to a maximum hourly flow rate, the Supplier will be deemed to have notice that maximum hourly flows will be in effect on the Company's distribution facilities as of the same time and for the same period as maximum hourly flows are in effect on the Transporting Pipeline. The Supplier's maximum hourly flow will be established based on an allocation of even hourly flows of daily receipts of Gas scheduled in the relevant period in accordance with the applicable transportation tariff of the Transporting Pipeline. All Gas Usage in excess of the Supplier's maximum hourly flow rate shall be subject to an additional charge of 5 times the Daily Index for each Dekatherm in excess of the Supplier's maximum hourly flow. The Company will notify the Supplier of the Supplier's maximum hourly flow.
- 9.6.6 If, during any fifteen (15) consecutive Gas Days, the Supplier delivers an amount less than 70% of the sum of the aggregated Gas Usage of Customers in the Aggregation Pool in said Gas Days, the Company may declare the Supplier ineligible to nominate Gas for the following thirty (30) Gas Days. The Supplier shall have the opportunity to cure the

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

imbalance with the demonstration of verifiable imbalance trades or otherwise within twenty-four (24) hours of notification by the Company. If the Supplier is declared ineligible to nominate Gas for such 30 Gas Days, the Supplier may be reinstated at the end of the 30 Gas Days, provided it posts security equal to the product of: (1) the maximum aggregate daily Gas Usage of Customers in the Aggregation Pool expressed in MMBtu and (2) \$300. If, within twelve (12) months of the first offense, such Supplier is declared ineligible to nominate Gas pursuant to this Section, the Supplier will be disqualified from service under this tariff for one (1) full year from the time of the second disqualification. If the Supplier defaults on its obligations under this tariff, the Company shall have the right to use such security to satisfy the Supplier’s obligations. Such security may be used by the Company to secure Gas, transportation, and storage, and to cover other related costs incurred as a result of the Supplier’s default. The security may also be used to satisfy any outstanding claims that the Company may have against the Supplier including imbalance charges, cash-out charges, pipeline penalty charges, and other charges.

9.7 Cash Out

For each Aggregation Pool, the Supplier must maintain total Monthly receipts within a reasonable tolerance of total Monthly Gas Usage. Any differences between total Monthly receipts for an Aggregation Pool and the aggregated Gas Usage of Customers in the Aggregation Pool, expressed as a percentage of total Monthly receipts, will be cashed out according to the following schedule:

<u>Imbalance Tier</u>	<u>Over-deliveries</u>	<u>Under-deliveries</u>
0% <= 5%	The average of the Daily Indices for the relevant Month	The highest average of seven consecutive Daily Indices for the relevant Month.
> 5% <= 10%	0.85 times the above stated rate.	1.15 times the above stated rate.
> 10% <= 15%	0.60 times the above stated rate.	1.4 times the above stated rate.
> 15%	0.25 times the above stated rate.	1.75 times the above stated rate.

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

For purposes of determining the tier at which an imbalance will be cashed out, the price will apply only to volumes within a tier. For example, if there is a 7% under-delivery on a Transporting Pipeline, volumes that make up the first 5% of the imbalance are priced at the highest average of the seven (7) consecutive Daily Indices. Volumes making up the remaining 2% of the imbalance are priced at 1.15 times the average of the seven (7) consecutive Daily Indices.

### 10. Non-Daily Metered Delivery Service

#### 10.1 Applicability

Part VII, Section 10 of this tariff applies to Customers taking Delivery Service under Rate Schedules G-40, G-41, G-50, and G-51 that have not elected Daily Metered Delivery Service pursuant to Section 9.1.2 and their Suppliers.

#### 10.2 Delivery Service Provided

This service provides firm, year-round delivery of Customer purchased Gas from the Designated Receipt Point to the Delivery Point on any Gas Day for Customers, without the requirement of recording Gas Usage at the Delivery Point on a daily basis. Daily Nominations are calculated by the Company on the basis of a Consumption Algorithm and the Supplier is obligated to deliver to the Designated Receipt Point(s) such quantities.

#### 10.3 Nominations and Scheduling of Service

10.3.1 The Supplier is obligated to nominate and deliver the Adjusted Target Volume (“ATV”), as determined in Part VII, Section 10.3.2, to the Designated Receipt Points on every Gas Day for each Aggregation Pool.

10.3.2 The Company shall determine the ATV for each Aggregation Pool of Customers taking non-daily metered Delivery Service for each Gas Day using a Consumption Algorithm. The ATV shall include the Company Gas Allowance. On each Business Day, the Company will communicate, electronically, by facsimile, or by other agreeable alternative means, the forecasted ATV to the Supplier for at least the subsequent four (4) Gas Days. The ATV in effect for any Gas Day shall be the most recent ATV for that Gas Day communicated to the Supplier by the Company. The ATV for a given Gas Day shall not be effective unless it has been communicated to the Supplier at least two (2) hours prior to the Company’s Supplier Nomination deadline for that Gas Day, which shall be at least two (2) hours prior to the deadline for nominations on the Transporting Pipeline, or such lesser period as determined by the Company.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- 10.3.3 Nominations will be communicated to the Company electronically, by facsimile, or other agreeable alternative means.
- 10.3.4 Nominations for the first Day of a Month shall be submitted to the Company no later than two (2) hours prior to the deadline for first of the Month Nominations of the Transporting Pipeline or such lesser period as determined by the Company. The Company will make available, from time to time, a schedule of Nomination due dates. Nominations on weekends, holidays, and non-business hours will be accepted by the Company on a basis consistent with that utilized for its own operations.
- 10.3.5 The Supplier shall provide an intra-Month Nomination no later than two (2) hours prior to the deadline of the Transporting Pipeline for the next Gas Day, or such lesser period as determined by the Company. Nominations on weekends, holidays, and non-business hours will be accepted by the Company on a basis consistent with that utilized for its own operations.
- 10.3.6 Nominations will be conditionally accepted by the Company pending confirmation by the Transporting Pipeline. The Company will attempt to confirm the nominated volume with the Transporting Pipeline. In the event of a discrepancy between the volume nominated to the Company by the Supplier and the volume nominated by the Supplier to the Transporting Pipeline, the lower volume will be deemed confirmed. The Company will allocate such discrepancy based on a predetermined allocation method set forth in the Supplier Service Agreement. If no predetermined allocation method has been established prior to the event of such discrepancy, the Company will allocate the discrepancy on a pro rata basis. The Company will not confirm any volume nominated by the Supplier in excess of the ATV.
- 10.3.7 In the event that the Supplier is unable to deliver a confirmed ATV Nomination, the Supplier may make intra-Gas Day Nominations relating to changes to existing Nominations within a given Gas Day no later than two (2) hours prior to the intra-Gas Day Nomination deadline for the Transporting Pipeline on which the Nomination is to be effective, or such lesser period as determined by the Company; provided, however, that the Nomination must be in conformance with the requirements of and must be permitted by the Transporting Pipeline. Intra-Gas Day Nominations on weekends, holidays, and non-business hours will be accepted by the Company on a basis consistent with that utilized by the Company for its own operations. The Company shall not adjust the ATV applied for that Gas Day.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

10.3.8 Nominations may be rejected if they do not satisfy the conditions for Delivery Service in effect from time to time.

10.3.9 All quantities of Gas over-delivered or under-delivered to the Company's system in violation of an Operational Flow Order ("OFO") declared by the Company pursuant to Part VII, Section 16 will be subject to the Critical Day provisions of Part VII, Section 10.6.1 of this tariff, and the delivered quantity specified in the OFO will replace the ATV.

10.4 Determination of Receipts

10.4.1 The quantity of Gas deemed received by the Company for the Supplier's Aggregation Pool at the Designated Receipt Point(s) will equal the volume so scheduled by the Transporting Pipeline(s).

10.4.2 The Company Gas Allowance will be assessed against receipts pursuant to Part VII, Section 8 of this tariff.

10.5 Metering and the Determination of Deliveries

The Company shall record the Customer's Gas Usage at the Delivery Point by making actual meter reads on a monthly or bi-monthly basis. In the event that the Customer's Gas Usage is metered on a bi-monthly basis, the Company shall make available to the Supplier estimates of the Customer's Gas Usage for each of the two billing months.

10.6 Balancing

10.6.1 Any difference between the Supplier's ATV for an Aggregation Pool and the receipts on the Transporting Pipeline to the appropriate Designated Receipt Point(s) will be cashed out by the Company according to the following:

Off-Peak Season: For receipts less than the ATV, the Supplier shall be charged 1.1 times the Daily Index for the difference. For receipts greater than the ATV, the Supplier shall be charged 0.8 times the Daily Index for the difference.

Peak Season: For receipts less than the ATV but greater than or equal to 95% of the ATV, the Supplier shall be charged 1.1 times the Daily Index for the difference. For receipts less than 95% of the ATV, the Supplier shall be charged 1.1 times the Daily Index for the first 5% difference, and the Supplier shall be charged two (2) times the Daily Index for the remaining difference. For receipts greater than the ATV,

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

the Supplier shall be charged 0.8 times the Daily Index for the difference.

Critical Day(s): The Company will determine if the Critical Day will be aggravated by an under-delivery or an over-delivery, and so notify the Supplier when a Critical Day is declared pursuant to Part VII, Section 16.

Critical Day That Will Be Aggravated by Under-delivery

Supplier who under-delivers. A Supplier who under-delivers on a Critical Day that will be aggravated by under-delivery shall be charged five (5) times the Daily Index for the difference between the ATV and actual receipts.

Supplier who over-delivers. A Supplier who over-delivers on a Critical Day that will be aggravated by under-delivery shall be charged the following amounts for all receipts in excess of the ATV:

- (a) up to 25% in excess of the ATV, the Supplier shall be charged the Daily Index for the difference.
- (b) for receipts in excess of 25% above the ATV, the Supplier shall be charged 0.8 times the Daily Index for the difference.

Critical Day That Will Be Aggravated By Over-delivery.

Supplier who over-delivers. A Supplier who over-delivers on a Critical Day that will be aggravated by over-delivery shall be charged 0.4 times the Daily Index for receipts greater than the ATV.

Supplier who under-delivers. A Supplier who under-delivers on a Critical Day that will be aggravated by over-delivery shall be charged the following amounts--for receipts less than the ATV but greater than or equal to 75% of the ATV, the Supplier shall be charged the Daily Index for the first 25% difference, and the Supplier shall be charged 1.1 times the Daily Index for the remaining difference.

10.6.2 In addition to the charges set forth in Part VII, Section 10.6.1, the Company shall use a daily balancing charge calculation to account for balancing costs it incurs in serving each Aggregation Pool due to differences in forecast versus actual Effective Degree Days. The daily balancing charge shall be based on the sum of the absolute values of the daily differences between the Aggregation Pool's ATV and the recalculated ATV value described in Part VII, Section 10.7.1 below. Such charge shall be billed to the Supplier monthly and shall reflect the cost of resources used by the Company to balance such differences for each Gas

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Day of the Month. The Company shall calculate such charge annually in its Peak Season cost of Gas filing according to a formula as set forth in Appendix A.

In the event that the Transporting Pipeline requires its customers to balance on a point-specific basis, the Supplier must balance pursuant to this Section at each Designated Receipt Point.

10.6.3 In addition to the charges set forth in Part VII, Sections 10.6.1 and 10.6.2, the Company shall flow through to the Supplier any pipeline imbalance penalty charges attributable to the Supplier.

### 10.7 Cash Out

10.7.1 The Company shall use a daily cash out calculation to account for imbalances due to differences in forecast versus actual Effective Degree Days. Using a Consumption Algorithm, the Company will recalculate the ATV for each Aggregation Pool for each Gas Day of the Month, substituting actual Effective Degree Days for forecast Effective Degree Days. Daily recalculations shall be compared to the Aggregation Pool's daily ATV, and the difference shall be cashed out at 100% of the Daily Index.

10.7.2 During the processing of both the June and December Supplier billings, the Company shall use a six-month cash-out calculation to account for differences in forecast usage versus billed usage. The Company may cash-out differences in forecast usage versus billed usage at intervals that are less than six months as provided by the Supplier Service Agreement.

(1) During the processing of the June Supplier billings, using the recalculated ATV values described in Section 10.7.1, the Company will compare the sum of the recalculated ATV values for each Aggregation Pool for the six-month period of November 1 through April 30 to the sum of billed usage volumes used by each Aggregation Pool for that same period. The differences shall be cashed out at 100% of the average of the Daily Index weighted by actual degree days over the same period. The Peak period cash-out shall be calculated and provided to Suppliers within 60 days of rendering Supplier billings, in accordance with Section 20.8, for the month of April.

(2) During the processing of the December Supplier billings, using the recalculated ATV values described in Section 10.7.1, the Company will compare the sum of the recalculated ATV values for each Aggregation Pool for the six-month period of May 1 through October

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

31 to the sum of billed usage volumes used by each Aggregation Pool for that same period. The differences shall be cashed out at 100% of the average of the Daily Index over the same period. The Off-Peak period cash-out shall be calculated and provided to Suppliers within 60 days of rendering Supplier billings, in accordance with Section 20.8, for the month of October.

10.7.3 The Company shall allow Suppliers to trade seasonal differences. Prior to the seasonal cash out, the Company shall make available a list of Suppliers. Aggregation Pools affected by the transaction must be located within the same Gas Service Area as defined in Part VII, Section 4, unless waived by the Company. All trades must be communicated to the Company within three (3) Business Days following receipt of the list.

10.7.4 If, during any fifteen (15) consecutive Gas Days, the Supplier delivers an amount less than 70% of the sum of the ATVs of the Aggregation Pool in said Gas Days, the Company may declare the Supplier ineligible to nominate Gas for the following thirty (30) Gas Days. The Supplier shall have the opportunity to cure the imbalance with the demonstration of verifiable imbalance trades or otherwise within twenty-four (24) hours of notification by the Company. If the Supplier is declared ineligible to nominate Gas for such 30 Gas Days, the Supplier may be reinstated at the end of the 30 Gas Days, provided it posts security equal to the product of: (1) the Supplier's estimated maximum aggregate daily Gas Usage of Customers in the Aggregation Pool expressed in MMBtu and (2) \$300. If, within twelve (12) months of the first offense, such Supplier is declared ineligible to nominate Gas pursuant to this Section, the Supplier will be disqualified from service under this tariff for one (1) full year from the time of the second disqualification. If the Supplier defaults on its obligations under this tariff, the Company shall have the right to use such security to satisfy the Supplier's obligations. Such security may be used by the Company to secure Gas, transportation, storage, and to cover other related costs incurred as a result of the Supplier's default. The security may also be used to satisfy any outstanding claims that the Company may have against the Supplier including imbalance charges, cash-out charges, pipeline penalty charges, and other charges.

### 11. Capacity Assignment

#### 11.1 Applicability

Part VII, Section 11 of this tariff applies to all Suppliers that have enrolled one or more Customers into one or more Aggregation Pools and shall include Customers acting as their own Supplier. The Company shall assign and the Supplier shall

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

accept each Customer's pro-rata share of Capacity, if any, as established in accordance with this Section.

### **11.2 Identification of Capacity for Assignment**

11.2.1 On or before September 15 of each year, the Company shall communicate, by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means, the Capacity to be made available for assignment to Suppliers on each of twelve Assignment Dates beginning in October.

11.2.2 The Company shall identify, by Gas Service Area, the specific contracts and resources for assignment to Suppliers based on the Company's Capacity and resource plans. Such identified contracts and resources shall be used to determine the pro-rata shares of Capacity assignable to a Supplier on behalf of the Customers enrolled in its Aggregation Pool.

11.2.3 Capacity assigned by the Company may include Company-Managed Supplies pursuant to Part VII, Section 11.9.

### **11.3 Determination of Pro-Rata Shares of Capacity**

11.3.1 The Company shall establish a Total Capacity Quantity ("TCQ") for each Customer taking Delivery Service. The TCQ represents the total amount of Capacity assignable to a Supplier on behalf of a Customer.

11.3.2 Except as provided in this Part VII, Section 11.3.3 and Section 11.3.4 regarding Capacity Exempt Customers, the TCQ for all Customers taking Delivery Service shall be determined as set forth below. Prior to November 1, 2018, the TCQ shall be the Customer's estimated Gas Usage on the Peak Day, as determined by the Company. Beginning November 1, 2018, the TCQ shall be the Customer's estimated Gas Usage on the Peak Day, as determined by the Company, multiplied by the Capacity Ratio. The Company shall derive estimated Gas Usage on the Peak Day using a Daily Baseload and a Heating Factor based upon the Customer's historical Gas Usage during the Reference Period, or the best estimates available to the Company should actual Gas Usage information be partially or wholly unavailable. If the Company determines that the daily Gas Usage characteristics of a Daily Metered Delivery Service Customer cannot be accurately modeled using the Company's Consumption Algorithm, the Company shall review the Customer's actual historical maximum daily Gas Usage in estimating the Customer's Gas Usage on the Peak Day.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- 11.3.3 Existing Customers who became exempt from capacity assignment before November 1, 2017, shall remain as Capacity Exempt Customers with a TCQ of zero.
- 11.3.4 In the event that Sales Service is provided at a new meter location for Gas Usage associated with new construction, the Customer shall become a Capacity Exempt Customer with an assigned TCQ of zero, provided that the Customer initiates Supplier Service within 60 days of the initial gas flow in accordance with Part VII, Section 20.5 of this tariff except in cases where the Customer is a new Customer of record at a meter location where a former Customer of record was subject to assignment of Capacity at any time during the preceding twenty-four (24) months, in which case the TCQ established by the Company for the former Customer shall become the TCQ for the new Customer. The Company may reduce or increase said TCQ for the new Customer, if, in its sole reasonable discretion, the Company determines that the old Customer's TCQ differs materially from the new Customer's estimated future consumption on the Peak Day.
- 11.3.5 Any Capacity Exempt Customer who commences Sales Service pursuant to Part VII, Section 13.2 will lose their capacity exempt status if they subsequently return to Delivery Service.
- 11.3.6 The Company shall establish a TCQ for each Customer pursuant to Part VII, Section 11.3.2, for the purpose of determining the Customer's pro-rata shares of Capacity until such time that the Customer returns to Sales Service. Beginning August 1, 2018, the Company shall recalculate each Customer's TCQ annually in accordance with Section 11.3.2 and issue new TCQ for the upcoming November 1 through October 31 period for those Customers who have newly calculated TCQ higher or lower than the prior TCQ by more than ten percent (10%). Those Customers who have a newly calculated TCQ that differs by ten percent (10%) or less from the prior TCQ shall retain their prior TCQ for the upcoming November 1 through October 31 period. On or before August 1 of each year, the Company shall complete the Annual TCQ Review and provide each Supplier with the TCQ values that will be in effect for each of their Customers during the upcoming November 1 through October 31 period.
- 11.3.7 The Company shall determine the pro-rata shares of Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity assignable to a Supplier on behalf of a Customer as the product of the Customer's TCQ times the applicable Capacity Allocators. The Capacity Allocators for each class of Customers billed under the Company's Rate Schedule shall be set forth annually in Appendix C to this tariff.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

11.3.8 The Company shall determine the pro-rata share of Seasonal Storage Capacity assignable to a Supplier on behalf of a Customer consistent with the tariffs governing the associated Storage Withdrawal Capacity.

11.3.9 The Company shall determine the pro-rata shares of Peaking Supply assignable to a Supplier in accordance with Part VII, Section 14 of this tariff.

11.4 Capacity Assignments

11.4.1 On each Assignment Date, the Company will assign to the Supplier the pro-rata shares of Capacity on behalf of each Customer as determined by the Company in accordance with Part VII, Sections 11.2, 11.3 and 11.7.

- (a) The total amount of Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity assigned to the Supplier on behalf of the Customers in an Aggregation Pool shall be at least equal to the cumulative sum of the pro-rata shares of Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity for all Customers enrolled in said Aggregation Pool as of five (5) Business Days prior to the Assignment Date.
- (b) Storage Withdrawal Capacity shall be subject to Operational Flow Orders that are issued by the Company pursuant to Part VII, Section 16 of this tariff, in the event that the Company requires the Supplier to deliver or to store quantities of Gas for the purposes of managing system imbalances and maintaining Delivery Service. Whenever the Company assigns incremental Storage Withdrawal Capacity to the Supplier, the Company shall also assign to that Supplier additional Seasonal Storage Capacity pursuant to Part VII, Section 11.8.
- (c) The Peaking Capacity assigned to the Supplier shall establish the Maximum Daily Peaking Quantity ("MDPQ") for the Aggregation Pool in the Supplier's Service Agreement. In the event that the Company increases a Supplier's MDPQ, the Company shall also assign to that Supplier additional Peaking Supply pursuant to Part VII, Section 14.

11.4.2 The Company shall execute Capacity assignments in increments of 200 MMBtus. The Supplier shall accept an initial increment of Capacity on the first Assignment Date when the sum of the pro-rata shares of Capacity assigned to the Supplier pursuant to Part VII, Section 11.4.1 exceeds 150 MMBtus. The Supplier shall accept additional increments of Capacity on

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

the following Assignment Dates commensurate with any cumulative increase in the sum of pro-rata shares of Capacity assigned to the Supplier, as rounded to the nearest 200 MMBtus. Each increment of Capacity accepted by the Supplier shall comprise Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity in proportion to the cumulative increase of the pro-rata shares of assigned Capacity as established in accordance with Part VII, Section 11.4.1. Part VII, Section 11.4.2 shall not apply to a Customer that is acting as its own Supplier.

11.4.3 If a Customer is acting as its own Supplier, the Company shall assign Capacity to the Customer in an amount equal to the Customer's TCQ, as established pursuant to Part VII, Section 11.3.

### 11.5 Release of Contracts

11.5.1 With the exception of Company-Managed Supplies and On-System Peaking Capacity, Capacity contracts shall be released by the Company to the Supplier, at the maximum tariff rate or lesser rate paid by the Company and including all surcharges, through pre-arranged Capacity releases, pursuant to applicable laws and regulations and the terms of the governing tariffs and contracts.

11.5.2 Capacity contracts released to a Supplier on an Assignment Date shall be released for a term beginning on the first Gas Day of the Month following the Assignment Date through the expiration date of the respective capacity contract being assigned.

11.5.3 The Company reserves the right to adjust releases of Storage Withdrawal Capacity in the event that fifty percent (50%) or more of the total Storage Withdrawal Capacity serving a Gas Service Area has been assigned to Suppliers. Such adjustments may include, but are not limited to, the reassignment of certain Storage Withdrawal Capacity as Company-Managed Supplies in order for the Company to maintain operational control over Capacity resources associated with system balancing, and/or the retention of specific Capacity resources associated with system balancing and the implementation of a balancing charge to offset the associated costs.

### 11.6 Annual Reassignment of Capacity

11.6.1 On each Annual Reassignment Date, the Company shall adjust the Capacity assignments previously made to a Supplier to conform with the Company's resource and requirements plans and any changes in the amount of Capacity to be assigned to a Supplier pursuant to the Annual

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

TCQ Review. Such previously assigned Capacity shall be replaced by the assignment to the Supplier of the pro-rata shares of the same or similarly situated Capacity on behalf of the Customers enrolled in the Supplier's Aggregation Pools (as of the first Gas Day of the Month following the Annual Reassignment Date).

- 11.6.2 If the reassignment of Storage Withdrawal Capacity requires adjustments to the Seasonal Storage Capacity previously assigned to a Supplier, the Company shall reassign Seasonal Storage Capacity to such Supplier, and the Company and the Supplier shall address any associated increments and decrements to inventories in place pursuant to Part VII, Section 11.8 of this tariff.
- 11.6.3 If the reassignment of Peaking Capacity requires adjustments to the MDPQ for the Supplier's Aggregation Pool, the Company shall reassign Peaking Supply to such Supplier, and the Company and the Supplier shall address any associated increments and decrements to supplies pursuant to Part VII, Section 14 of this tariff.

11.7 Recall of Capacity

11.7.1 If the pro-rata shares of Capacity assignable to a Supplier decline because one or more of the Supplier's Customers has returned to Sales Service, the Company shall have the right, but not the obligation, to recall from the Supplier the pro-rata shares of Capacity previously assigned to the Supplier on behalf of such Customers. The decision on whether to exercise its Capacity-recall rights shall be made by the Company in its sole reasonable discretion. If the Company elects to recall Capacity from a Supplier pursuant to this Section, such recall shall be made on the Assignment Date following the effective date of the Customer's return to Sales Service. Notwithstanding the foregoing, in the following circumstances the Company shall be required to recall Capacity associated with Customers returning to Sales Service:

- (a) The Supplier returning the Customers to Sales Service certifies that it is ceasing all business operations in New Hampshire;
- (b) The Supplier returning the Customers to Sales Service certifies that it will no longer offer service to a particular market sector (e.g., small commercial and industrial Customers) and, therefore, once such Customers are returned to Sales Service, the Supplier is not eligible to re-enroll Customers of that type; or

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- (c) The Supplier demonstrates that it has provided Supplier Service to the Customer for a 12-month period, and for a period of no less than any 12-month increment, prior to the Customer's return to Sales Service.
- 11.7.2 If the Company elects to recall Storage Withdrawal Capacity from the Supplier pursuant to this Section, the Company shall reduce the Seasonal Storage Capacity associated with the affected Aggregation Pool in accordance with Part VII, Section 11.8 of this tariff. If the Company elects to reduce the MDPQ in the Supplier Service Agreement, the Company shall reduce the Peaking Supply associated with the affected Aggregation Pool in accordance with Part VII, Section 14 of this tariff.
- 11.7.3 In the event that a Customer in a Supplier's Aggregation Pool switches to another Supplier, the Company shall recall from the former Supplier said Customer's pro-rata shares of Capacity for reassignment to the new Supplier pursuant to Part VII, Section 11.4. There shall be no change in the Customer's TCQ used to determine the Customer's pro-rata shares of Capacity for reassignment to the new Supplier. The recall of such Capacity from the Customer's former Supplier and the assignment of Capacity to the new Supplier shall be made on the Assignment Date following the effective date of the Customer's switch in Suppliers.
- 11.7.4 If the Company recalls Storage Withdrawal Capacity from the Customer's former Supplier, the Company shall reduce the Seasonal Storage Capacity associated with the affected Aggregation Pool in accordance with Part VII, Section 11.8 of this tariff. If the Company reduces the MDPQ in the Customer's former Supplier's Service Agreement, the Company shall also reduce the Peaking Supply associated with the affected Aggregation Pool in accordance with Part VII, Section 14 of this tariff.
- 11.7.5 The recall of Capacity by the Company shall entail the recall of released contracts pursuant to governing tariffs and/or the reduction in assigned quantities set forth in the Supplier Service Agreement. The recall of Capacity shall be executed in decrements of 200 MMBtus, commensurate with the cumulative reduction in the pro-rata shares of Capacity assigned to the Supplier, rounded to the nearest 200 MMBtus. Each decrement of Capacity assigned to the Supplier shall comprise Pipeline Capacity, Storage Withdrawal Capacity, and Peaking Capacity in proportion to the cumulative decrease in the pro-rata shares of Capacity recalled from the Supplier.
- 11.7.6 In the event that a Supplier is declared ineligible to nominate Gas for thirty (30) Gas Days pursuant to Part VII, Sections 9.6.6 or 10.7.4 of this

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

tariff, the Company shall have the right to recall any or all Capacity assigned to said Supplier. If the Supplier is reinstated at the end of such 30 Gas Days, the Company shall reassign Capacity to the Supplier on the next Assignment Date pursuant to Part VII, Sections 11.4 and 11.5. There shall be no change in the TCQ values used to determine the Supplier's Customers' pro-rata shares of Capacity for reassignment.

11.7.7 In the event that a Supplier is disqualified from service for one (1) full year pursuant to Part VII, Sections 9.6.6 or 10.7.4 of this tariff, the Company shall have the right to recall any or all Capacity assigned to said Supplier. If the Supplier is reinstated at the end of such period, the Company shall reassign Capacity to the Supplier on the next Assignment Date pursuant to Part VII, Sections 11.4 and 11.5

11.7.8 In the event that the Supplier fails to meet the applicable registration and licensing requirements established by law or regulation, fails to satisfy the requirements and practices as set forth in Part VII, Section 20.3 of this tariff, fails to be and remain an approved shipper on the upstream pipelines and underground storage facilities on which the Company will assign capacity, fails to make timely payment under the assigned contracts, or fails to comply with or perform any of the obligations on its part established in this tariff or in the Supplier Service Agreement, the Company shall have the right to recall permanently any or all Capacity assigned to said Supplier. This section shall also apply to a Customer acting as its own Supplier.

11.7.9 The Supplier shall forfeit its rights to Capacity recalled by the Company pursuant to this Section. Such forfeiture shall be effected in accordance with applicable laws and regulations and the governing tariffs. In the event of Capacity forfeiture pursuant to this Section, the Supplier shall be responsible to compensate the Company for any payments due under the contracts prior to forfeiture, as well as any interest due thereon. The Company will not exercise discretion in the application of the forfeiture provisions of this Section. This section shall also apply to a Customer acting as its own Supplier.

11.8 Seasonal Storage Capacity

11.8.1 On each Assignment Date, the Company shall release Seasonal Storage Capacity to a Supplier that accepts the assignment of Storage Withdrawal Capacity pursuant to Part VII, Section 11.4. The Company shall assign such Seasonal Storage Capacity consistent with the tariffs governing the release of the associated Storage Withdrawal Capacity.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- 11.8.2 If the Company assigns Seasonal Storage Capacity to a Supplier pursuant to Part VII, Section 11.8.1 above, the Company shall transfer in-place Gas inventories to the Supplier. The quantity of inventories to be transferred from the Company to the Supplier shall be determined by multiplying the incremental Seasonal Storage Capacity assigned to the Supplier on the Assignment Date times the applicable storage inventory percentage described in Part VII, Section 11.8.5. The Supplier shall be charged the Company's weighted average cost of inventories in off-system storage facilities for each Dekatherm transferred from the Company to the Supplier. The Company shall communicate, by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means, the Company's weighted average cost of inventories, by Gas Service Area, at least two Business Days prior to each Assignment Date.
- 11.8.3 In the event that the Company recalls Storage Withdrawal Capacity from the Supplier pursuant to Part VII, Section 11.7, the Company shall also recall Seasonal Storage Capacity from the Supplier. The Company shall determine the total Seasonal Storage Capacity to be recalled from the Supplier in accordance with the tariffs governing the Storage Withdrawal Capacity returned to the Company.
- 11.8.4 If the Company recalls Seasonal Storage Capacity from a Supplier pursuant to Part VII, Section 11.8.3, the Supplier shall transfer in-place Gas inventories to the Company. The quantity of inventories to be transferred from the Supplier to the Company shall be determined by multiplying the decremental Seasonal Storage Capacity times the applicable storage inventory percentage described in Part VII, Section 11.8.5. The Supplier shall be reimbursed at the Company's weighted average cost of inventories in off-system storage facilities as of the Assignment Date, for each Dekatherm transferred from the Supplier to the Company. The Company shall communicate, by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means, the Company's weighted average cost of inventories, by Gas Service Area, at least two (2) Business Days prior to each Assignment Date.
- 11.8.5 Seasonal storage inventory percentages shall represent the amount of Seasonal Storage Capacity in each assigned storage resource that is assumed to be filled with inventories as of the first Gas Day of the month following the Assignment Date. Each September, the Company shall communicate, by electronic means as determined by the Company or, in the event of failure of such electronic means, by facsimile or other agreeable alternative means, the storage inventory percentages for each

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

resource that shall be applied to incremental or decremental Seasonal Storage Capacity assignments executed on each of the twelve (12) Assignment Dates beginning in October.

11.9 Company-Managed Supplies

11.9.1 The Company shall provide access to and ascribe cost responsibility for the pro-rata shares of certain Capacity contracts including any Pipeline Capacity, Seasonal Storage Capacity or Storage Withdrawal Capacity, which cannot be delivered to the Company's system or is under contracts that are not releasable to third-parties, and to Peaking Service pursuant to Part VII, Section 14.

11.9.2 The Supplier's Service Agreement shall set forth the quantity of each Company-Managed Supply assigned to the Supplier pursuant to Part VII, Sections 11.4 and 11.8.

11.9.3 The Company shall notify the Supplier of the conditions and/or restrictions on the use of Company-Managed Supplies pursuant to the tariffs and contracts governing the resources.

11.9.4 The Company shall invoice the Supplier for its pro-rata shares of the demand charges, net of asset management revenue, if any, for Capacity contracts assigned to the Supplier as Company-Managed Supplies. The Company shall also flow through to the Supplier all costs, including Supply costs, incurred from the utilization of Company-Managed Supplies on behalf of the Supplier.

11.9.5 The Company shall nominate quantities to the Transporting Pipeline and/or other interstate pipelines and off-system storage operators on behalf of Suppliers to which the Company has assigned Company-Managed Supplies, provided that the requested Nomination conforms to the tariffs or agreements governing the resource. The Supplier shall communicate its desired Nomination quantities to the Company subject to the provisions in Part VII, Sections 9.3 and 10.3 of this tariff.

11.10 Capacity Mitigation Service

11.10.1 Capacity Mitigation Service is available to Suppliers that have been assigned Capacity pursuant to Part VII, Section 11 of this tariff. Such Suppliers shall have the option to take Capacity Mitigation Service from the Company for contracts that would otherwise be released to the Supplier in accordance with this tariff.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- 11.10.2 Within five (5) Business Days prior to the Annual Reassignment Date, the Supplier must designate those contracts that would otherwise be released to the Supplier pursuant to Part VII, Section 11.5, as contracts to be managed by the Company for cost mitigation in accordance with the Company's Capacity Mitigation Service. Such designation will be effective for the period November 1 through October 31. Such notice shall be communicated in accordance with the Supplier's Service Agreement.
- 11.10.3 The Supplier shall pay to the Company the maximum-tariff rate or lesser rate paid by the Company, including all surcharges, for the Capacity contracts that are retained and managed by the Company. The Company shall bill the Supplier monthly for such charges.
- 11.10.4 The Company will market Capacity contracts designated by Suppliers for mitigation through the Capacity Mitigation Service. The Supplier shall receive a credit on its bill for Capacity Mitigation Service equal to the pro-rata share of the proceeds earned from the Company in exchange for such contract management. Such credit shall be determined on a contract-specific basis at the end of each Month and will be included in the bill sent to the Supplier in the following Month.

12. **Billing and Security Deposits**

- 12.1 The Customer shall be responsible for all charges for service furnished by the Company under the Company's applicable rates, as filed from time to time with the NHPUC, from the time service is commenced until it is terminated. The Company shall provide a single bill, reflecting unbundled charges, to Customers for Sales Service.
- 12.2 The Company shall offer two billing service options to Customers taking only Delivery Service: standard complete billing service and standard passthrough billing service. The Supplier shall inform the Company of the selected billing option in accordance with the provisions set forth in Part VII, Section 20.5.

12.2.1 **Standard Complete Billing Service**

The Customer shall receive a single bill from the Company for both Delivery Service and Supplier Service. The Company shall use the rates supplied by the Supplier to calculate the Supplier's portion of the single bill and integrate this billing within a single mailing to the Customer. The Company may charge a fee to the Supplier for providing this billing service as approved by the NHPUC.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

The Supplier shall adhere to the Customer classes and rate structure as specified in the Company's then current Rate Schedule on file with and approved by the NHPUC. The Company shall reasonably accommodate, at the Supplier's expense, different Customer classes or rate structures as agreed to by the Company and the Supplier in the Supplier Service Agreement.

The Company shall provide an electronic file to the Supplier that will, in addition to the usage being billed, contain the calculated Supplier billing amounts for the current billing cycle. Customer revenue due the Supplier shall be transferred to the Supplier in accordance with the Supplier Service Agreement. Upon receipt of Customer payments, the Company shall provide a file for the Supplier summarizing all revenue from Supplier sales, which have been received and recorded that day.

If a Customer pays the Company less than the full amount billed, the Company shall apply the payment first to Delivery Service, and if any payment remains, it shall be applied to Supplier Service.

**12.2.2 Standard Passthrough Billing Service**

The Customer taking Delivery Service shall receive two (2) bills: the Company shall issue one bill for Delivery Service and the Supplier shall issue a second bill for Supplier Service.

The Supplier shall be responsible for the collection of amounts due to the Supplier from the Customer. Customer payment responsibility with Suppliers shall be governed by the particular Customer/Supplier contract.

Within three (3) Business Days following the end of the Customer's billing cycle, the Company shall provide an electronic file for the Supplier that will contain the Customer's usage being billed including the current and previous meter readings.

- 12.3 The Company shall inform a Customer when Supplier Service has been initiated by a Supplier along with information on how the Customer may file a complaint regarding an unauthorized initiation of Service. This information shall be included on the first bill rendered to the Customer after such initiation.
- 12.4 Customer acting as its own Supplier will be subject to the billing and payment requirements in Part VII, Section 20.8 of this tariff.
- 12.5 Readings taken by an automated meter reading device will be considered actual readings for billing purposes.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

13. Sales Service

13.1 Sales Service is the Commodity service provided by the Company for Customers not electing to subscribe to Supplier Service and shall be provided by the Company, or its designated Supplier, in accordance with this tariff. Each Customer receiving Sales Service shall receive one bill from the Company reflecting delivery and Commodity charges.

13.2 A Customer receiving Sales Service shall continue to receive Sales Service unless the Customer elects to take Supplier Service and until such time that Supplier Service is initiated for the Customer in accordance with Part VII, Section 20.5 of this tariff. If the Customer terminates Supplier Service, if a Supplier terminates service to the Customer, if the Customer's designated Supplier becomes ineligible to serve the Customer pursuant to Part VII, Sections 9.6.6, 10.7.4, or 20.3 of this tariff, or if the Customer is no longer receiving Supplier Service for any other reason, the Company will provide Sales Service to the Customer so long as providing Sales Service to such Customer would not jeopardize the reliability of the system, in which case pursuant to Part VII, Section 20.5 of this tariff, the Company will initiate Sales Service for the Customer and will provide Sales Service to the Customer until such time that Supplier Service is initiated for the Customer by a new Supplier, consistent with the requirements of Section 13.3 and Section 13.4.

13.3 Any Capacity Assigned Customer returning from Delivery Service to Sales Service shall be required to remain on Sales Service through the following April 30 and shall also pay the Re-entry Surcharge as set out in Part VII, Appendix D through the following April 30. Following this period of remaining on Sales Service and paying the Re-entry Surcharge, the Customer may once again initiate Supplier Service. The Re-entry Surcharge is a Usage based (per Therm) charge in addition to the Cost of Gas (COG) Adjustment that applies to all Gas Usage. The Re-entry Surcharge will be determined during COG proceedings, will be set separately for the Winter Period and Summer Period, and may be subject to monthly updates as approved by the NHPUC.

The Re-entry Surcharge will equal zero except for charges to offset any prior period over-collection, credit or refund reflected in the COG, and shall not be negative. No reductions to the Re-entry Surcharge shall be made to offset prior period under-collections reflected in the COG.

13.4 Any Capacity Exempt Customer switching from Delivery Service to Sales Service shall be required to remain on Sales Service through the following April 30 and shall also pay the Conversion Surcharge as set out in Part VII, Appendix D through the following April 30. Following this period of remaining on Sales

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Service and paying the Conversion Surcharge, the Customer may once again initiate Supplier Service, however pursuant to Section 11.3.5 the Customer will become subject to assignment of Capacity and a TCQ will be established according to Section 11.3.2. The Conversion Surcharge is a Usage based (per Therm) charge in addition to the COG that applies to all Gas Usage. The Conversion Surcharge will be determined during COG proceedings, will be set separately for the Winter Period and Summer Period, and may be subject to monthly updates as approved by the NHPUC.

The Conversion Surcharge reflects the positive difference, if any, between the estimated cost of providing supply to Capacity Exempt Customers that switch to Sales Service and the effective COG, shall include charges to offset any prior period over-collection, credit or refund reflected in the COG, and shall not be negative. No reductions to the Conversion Surcharge shall be made to offset prior period under-collections or surcharges reflected in the COG. During the Winter Period, the Conversion Surcharge for high load factor customers will always be greater than or equal to the difference between high load factor (G-50, G-51, G-52) and low load factor (G-40, G-41, G-42) COG rates. During the Summer Period, the Conversion Surcharge will equal the Re-entry Surcharge.

14. Peaking Service

14.1 Applicability

Part VII, Section 14 of this tariff applies to all Suppliers, and to all Customers acting as their own Supplier, that have been assigned Capacity on behalf of themselves or Customers in their Aggregation Pools pursuant to Part VII, Section 11 of this tariff.

14.2 Character of Service

14.2.1 Peaking Service shall be provided by the Company subject to an executed Supplier Service Agreement that sets forth the Maximum Daily Peaking Quantity (“MDPQ”) and the assigned Peaking Supply for each of the Supplier’s Aggregation Pools.

14.2.2 The Company shall provide quantities of Gas, at the Supplier’s request, from the Supplier’s Peaking Service Account as established in accordance with Part VII, Section 14.4. Such quantities shall be deemed delivered by the Company and received by the Company at the Designated Receipt Point(s) for the Aggregation Pool. Peaking Service shall be firm and available to the Supplier each Gas Day in accordance with the balance of the Supplier’s Peaking Service Account and the parameters of the Company’s Peaking Service Rule Curve.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

14.3 Rates and Charges

14.3.1 The applicable rates for Peaking Service shall be established in the Company's tariff. The Supplier shall pay a peaking demand charge based on its MDPQ of assigned Peaking Capacity as billed by the Company for the Peak Season. Such unit demand charge shall be equal to the total Capacity costs and other fixed costs associated with the Company's peaking resources, excluding costs collected through Delivery rates, divided by the estimated peaking resources needed to meet the Company's total system Peak Day requirement.

14.3.2 The Supplier shall pay a Commodity charge equal to the estimated weighted average cost of peaking supplies, including fuel retention and carrying charges. The Company shall communicate electronically, by facsimile or by other agreeable alternative means the Company's estimated weighted average cost of peaking supplies by the 15<sup>th</sup> of the month preceding the next Assignment Date. The Commodity charge will be multiplied by the volumes of Peaking Service Gas nominated by the Supplier during each Month.

14.4 Peaking Supply

14.4.1 The Customer's portion of the Peaking Supply that shall be assigned to the Supplier on behalf of the Customer shall be equal to the Peaking Supply multiplied by the ratio of the Customer's MDPQ to the aggregate MDPQ of the total system.

14.4.2 On each Assignment Date, the Company shall assign Peaking Supply to a Supplier whose MDPQ has been increased pursuant to Part VII, Section 11.4. If the Company assigns incremental Peaking Supply to a Supplier, the Company shall credit the balance of the Supplier's Peaking Service Account for volumes available through October 31 in accordance with the Peaking Service Rule Curve. The amount credited to the Supplier's Peaking Service Account shall be determined by multiplying the incremental Peaking Supply by the peaking inventory percentage described in Part VII, Section 14.4.5.

14.4.3 On each Assignment Date, the Company shall recall Peaking Supply from a Supplier whose MDPQ has been decreased pursuant to Part VII, Section 11.7. The Company shall determine the Supplier's total Peaking Supply for recall to be equal to the difference between the cumulative total Peaking Supply assigned to the Supplier as of the previous Assignment

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Date and the total Peaking Supply that is assignable to the Supplier in accordance with Part VII, Section 14.4.1 above.

14.4.4 If the Company recalls Peaking Supply from a Supplier pursuant to Part VII, Section 14.4.3, the Company shall debit the balance of the Supplier's Peaking Service Account for volumes available through October 31 in accordance with the Peaking Service Rule Curve. The amount debited from the Supplier's Peaking Service Account shall be determined by multiplying the decremental Peaking Supply by the peaking inventory percentage described in Part VII, Section 14.4.5.

14.4.5 The peaking inventory percentage shall represent the level of Peaking Supply assumed to be available to a Supplier in its Peaking Service Account as of the first Gas Day of the Month following the Assignment Date for incremental and decremental assignments of Peaking Supply. Each September, the Company shall communicate electronically, by facsimile or by other agreeable alternative means the Peaking Inventory Percentages that shall be applied to incremental or decremental Peaking Supply assignments executed on each of the twelve (12) Assignment Dates beginning in October.

14.4.6 On each Annual Reassignment Date, the Company shall reset the balance in the Supplier's Peaking Service Account to equal the total Peaking Supply assignable to the Supplier on behalf of Customers enrolled in its Aggregation Pool (as of the first Gas Day of the Month following the Annual Reassignment Date) as determined in accordance with Part VII, Section 14.4.1 above.

14.5 Nomination of Peaking Service

14.5.1 The Supplier shall nominate with the Company the quantity of Peaking Supply, not in excess of the amount determined pursuant to Part VII, Section 14.4.2, that the Supplier desires to be provided from its Peaking Service Account for the applicable Gas Day. For an Aggregation Pool of Customers taking daily metered Delivery Service, the notice given by the Supplier to the Company for an applicable Gas Day shall be made in accordance with Part VII, Section 9.3 of this tariff. For an Aggregation Pool of Customers taking non-daily metered Delivery Service, the notice given by the Supplier to the Company for an applicable Gas Day shall be made in accordance with Part VII, Section 10.3 of this tariff.

14.5.2 In response to a valid Nomination for Peaking Service, the Company shall provide the requested quantity of Gas, which shall be deemed to be delivered by the Company and received by the Company at the Designated

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

Receipt Point(s) of the Supplier's Aggregation Pool, subject to the limitations herein. Nominated quantities shall be included in the determination of receipts at the Designated Receipt Point(s) for the Supplier's Aggregation Pool, which factors into the daily balancing provisions set forth in this tariff.

14.5.3 The Company may reject a Supplier's Nomination for Peaking Service if the nominated quantity would cause the balance of the Supplier's Peaking Service Account to fall to a level that is 10% or more below the minimum allowable account balance for the Month in which the Nomination is requested, as computed in accordance with the Peaking Service Rule Curve. Under such circumstances, the Company shall require the Supplier to nominate the pipeline and/or storage resources, within the contract entitlements assigned to the Supplier under Part VII, Section 11, required to maintain the Supplier's Peaking Service Account above the minimum allowable account balance described above. The balance of the Supplier's Peaking Service Account may not in any event fall below zero (0).

14.5.4 The Company shall provide Peaking Service supplies to the Supplier only when the volumes in the Peaking Service Account for the Aggregation Pool are greater than zero (0).

14.6 Peaking Service Critical Day Provisions

14.6.1 In the event that the volumes in a Supplier's Peaking Service Account for an Aggregation Pool are reduced to a level below the minimum allowable account balance as computed in accordance with the Company's Peaking Service Rule Curve, the Company may issue an OFO to such Supplier pursuant to Part VII, Section 16 of this tariff.

14.6.2 In the event that the total volumes of all Peaking Service Accounts within one or more of the Company's Gas Service Areas are reduced to levels below the total minimum allowable account balances as computed in accordance with the Company's Peaking Service Rule Curve, the Company may declare a Critical Day and issue a blanket OFO pursuant to Part VII, Section 16 of this tariff.

14.6.3 If, on a Critical Day, the Company projects, based on the Supplier's Nominations, that the Supplier's scheduled deliveries to the Designated Receipt Point(s) of an Aggregation Pool are less than the maximum feasible volumes for deliveries on the Transporting Pipeline, the Company may issue an OFO to the Supplier in accordance with Part VII, Section 16 of this tariff.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

15. Discontinuance of Service

The Company shall notify a Customer's Supplier of record that it has initiated any applicable billing and termination procedures as prescribed by the NHPUC. In the event that the Company discontinues Delivery Service to a Customer in accordance with the provisions set forth above, the Company shall provide electronic notification to the Customer's Supplier of record upon final billing to the Customer. The Company shall not be liable for any revenue loss to the Supplier as a result of any such disconnection.

16. Operational Flow Orders and Critical Days

16.1 In the event of a material and significant threat to the operational integrity of the Company's system, the Company may declare a Critical Day.

16.2 Circumstances constituting a threat to the operational integrity of the system that may cause the Company to declare a Critical Day shall include, but not be limited to: (1) a failure of the Company's distribution, storage, or production facilities; (2) near-maximum utilization of the Company's distribution, storage, production, and Supply resources; (3) inability to fulfill firm service obligations; and (4) issuance of an OFO or similar notice by upstream transporters. A Critical Day may not be declared on all or a portion of the system for the purpose of maintaining Interruptible Delivery Service on that portion of the system, but interruptible Gas may flow at times or on portions of the system when such flow would not violate any operational control restrictions or provisions of this tariff.

16.3 In the event that the Company has declared a Critical Day, the Company will have the right to issue an Operational Flow Order ("OFO") in which the Company may instruct Suppliers to take such action as conditions require, including, but not limited to, diverting Gas to or from the Company's distribution system, within the contract entitlements, if any, assigned to the Supplier under Part VII, Section 11 hereof. An OFO may be issued on a pipeline or point-specific basis. An OFO may be issued by the Company as a blanket order to all Suppliers or to an individual Supplier whose actions are determined by the Company to jeopardize system integrity. The Company may issue an OFO to an individual Supplier if the Company faces Gas cost exposure in excess of daily cashout or imbalance penalties as set forth in Part VII, Sections 9.6, 9.7, 10.6, and 10.7 for any under-deliveries or over-deliveries caused by that Supplier.

16.4 The Company will provide the Supplier with as much notice as is reasonably practicable of the issuance and removal of a Critical Day or an OFO; under most circumstances, the Company intends to provide at least twenty-two (22) hours' notice prior to the start of the Gas Day for the issuance of the Critical Day or OFO. Notification of the issuance and removal of a Critical Day or an OFO will be made by means as established in the Supplier Service Agreement. The Supplier

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

will be responsible for coordinating with its Customers any change to the Customer's quantity of Gas Usage. An OFO or Critical Day will remain in effect until its removal by the Company.

16.5 All quantities of Gas over-delivered or under-delivered to the Company's system in violation of an OFO will be subject to the Critical Day provisions of Part VII, Sections 9.6 and 10.6 of this tariff.

17. Force Majeure and Limitation of Liability

17.1 Neither the Company nor the Supplier will be liable to the other for any act, omission, or circumstance occasioned by or in consequence of any event constituting force majeure, and unless it is otherwise expressly provided herein, the obligations of the Company and the Supplier then existing hereunder will be excused during the period thereof to the extent affected by such event of force majeure, provided that reasonable diligence is exercised to overcome such event. As used herein, force majeure will mean the inability of the Company or the Supplier to fulfill its contractual or regulatory obligations: as a result of compliance by either party with an order, regulation, law, code, or operating standard imposed by a governmental authority; by reason of any act of God or public enemy; by reason of storm, flood, fire, earthquake, explosion, civil disturbance, labor dispute, or breakage or accident to machinery or pipeline (which breakage or accident is not the result of the negligence or misconduct of the party claiming force majeure); by reason of any declaration of force majeure by upstream Transporting Pipelines; or by reason of any other cause, whether the kind enumerated herein or otherwise, not within the control of the party claiming force majeure and which by the exercise of reasonable diligence such party is unable to prevent or overcome. Notwithstanding the foregoing, the Customer's and the Supplier's obligation to make any payments required under this tariff will in no case be excused by an event of force majeure. Nor will a failure to settle or prevent any labor dispute or other controversy with employees or with anyone purporting or seeking to represent employees be considered to be a matter within the control of the party claiming excuse. The party claiming force majeure will, on request, provide the other party with a written explanation thereof and of the remedy being undertaken.

17.2 The Company shall be liable only for direct damages resulting from the Company's conduct of business when the Company, its employees, or agents have acted in a negligent or intentionally wrongful manner. In no event shall the Company be liable to any party for any indirect, consequential, or special damages, whether arising in tort, contract, or otherwise, by reason of any services performed, or undertaken to be performed, or actions taken by the Company, or its agents or employees, under this tariff or in accordance with or required by law, including, without limitation, termination of the Customer's service.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- 17.3 If the Company is unable to render firm Delivery Service to the Customer taking such service as contemplated by this tariff as a result of force majeure and such inability continues for a period of thirty (30) Gas Days, the Customer may provide written notice to the Company of its desire to terminate Delivery Service at the expiration of thirty (30) Gas Days from the Company's receipt of such notice, but no sooner than sixty (60) Gas Days following the outset of the force majeure. If the Company has not restored Delivery Service to the Customer at the end of such notice period, the Customer's Delivery Service will terminate and both parties will be released from further performance hereunder, except for obligations to pay sums due and owing as of the date of termination.
- 17.4 The Company and the Supplier shall indemnify and hold the other and their respective affiliates, and the directors, officers, employees, and agents of each of them (collectively, "affiliates") harmless from and against any and all damages, costs (including attorney's fees), fines, penalties, and liabilities, in tort, contract, or otherwise (collectively, "liabilities"), resulting from claims of third parties arising, or claimed to have arisen, from the acts or omissions of either party in connection with the performance of the indemnifying party's obligations under this tariff. The Company and the Supplier shall waive recourse against the other party and its affiliates for or arising from the non-negligent performance by such other party in connection with the performance of its obligations under this tariff.

18. Curtailement

- 18.1 Whenever the integrity of the Company's system or the Supply of the Company's Customers taking Sales Service or Delivery Service is believed to be threatened by conditions on its system or upon the systems with which it is directly or indirectly interconnected, the Company may, in its sole reasonable judgment, curtail or interrupt Gas service or reduce pressure as set out in Part II.16 of this tariff. Such action shall not be construed to constitute a default nor shall the Company be liable therefor in any respect. The Company will use efforts reasonable under the circumstances to overcome the cause of such curtailment, interruption, or reduction and to resume full performance.
- 18.2 The Company shall communicate notice of curtailment as soon as practicable to the Suppliers of affected Customers by means as specified in the Supplier Service Agreement.
- 18.3 The Company shall take reasonable care in providing regular and uninterrupted service to its firm Customers, but whenever the Company deems that the situation warrants any interruption or limitation in the service to be rendered, such interruption or limitation shall not constitute a breach of the contract and shall not

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

render the Company liable for any damages suffered thereby by any person, or excuse the Customer from further fulfillment of the contract.

18.4 If the Company is required to curtail or interrupt service due to capacity constraints, the Company's Interruptible Delivery Service shall have a priority subordinate to the Company's firm Delivery Service and Sales Service Customers.

18.5 In any case where the Company determines in its judgment that a curtailment or interruption of firm services is necessary, the Company will curtail and/or interrupt firm Delivery Service and Sales Service Customers on a nondiscriminatory basis.

19. Taxes

19.1 In the event a tax of any kind is imposed or removed by any governmental authority on the distribution of Gas or on the gross revenues derived from the distribution of Gas at retail (exclusive, however, of taxes based on the Company's net income), the rate for service herein stated will be adjusted to reflect said tax. Similarly, the effective rate for service hereunder will be adjusted to reflect any refund of imposition of any surcharges or penalties applicable to service hereunder, which are imposed or authorized by any governmental or regulatory authorities.

19.2 The Customer will be responsible for all taxes or assessments that may now or hereafter be levied with respect to the Gas or the handling or subsequent disposition thereof after its delivery to the Delivery Point. However, if the Company is required by law to collect and/or remit such taxes, the Customer will reimburse the Company for all amounts so paid. If the Customer claims exemption from any such taxes, the Customer will provide the Company in writing its tax exemption number and other appropriate documentation. If the Company collected any taxes or assessments from the Customer and is later informed by the Customer that the Customer is exempt from such taxes, it shall be the Customer's responsibility to obtain any refund from the appropriate governmental taxing agency.

19.3 The Supplier will be responsible for all production, severance, ad valorem, or similar taxes levied on the production or transportation of the Gas before its delivery to the Designated Receipt Point. The Supplier will also be responsible for sales taxes imposed on Gas delivered for the Customer's account. However, if the Company is required by law to remit such taxes to the collecting authority, it will do so and invoice the Supplier for such taxes paid on the Supplier's behalf.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

20. Supplier Terms and Conditions

20.1 Applicability

The following terms and conditions shall apply to every Supplier providing Supplier Service in the State of New Hampshire, to every Customer doing business with said Suppliers, and to Customers acting as their own Supplier.

20.2 Obligations of Parties

20.2.1 Customer

Unless otherwise agreed to by the Company and the Customer, a Customer shall select one Supplier for each account at any given time. A Customer electing Supplier Service must provide the selected Supplier with its applicable Authorization Number. A Customer may choose only a Supplier who meets the terms described in Part VII, Sections 20.2.3 and 20.3 below and who meets any applicable registration requirements established by law or regulation.

20.2.2 Company

The Company shall deliver Customer purchased Gas from the Designated Receipt Point to the Delivery Point in accordance with the service selected by the Customer pursuant to this tariff and, among other things, shall:

- (a) Provide Customer service and support, including call center functions, for services provided by the Company under this tariff;
- (b) Respond to service interruptions, reported Gas leaks, and to other Customer safety calls;
- (c) Handle connections, curtailments, and terminations for services provided by the Company under this tariff;
- (d) Read meters;
- (e) Submit bills to Customers for Delivery Service and if contracted by the Supplier, for Supplier Service in accordance with Part VII, Section 12.2.1;
- (f) Address billing inquiries for Delivery Service;
- (g) Answer general questions about Delivery Service;

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

- (h) Provide to Suppliers, on request, the data format and procedures for electronic information transfers and funds transfers;
- (i) Arrange for or provide Sales Service to the Customer at the request of the Customer in accordance with the Company's tariff; and
- (j) Provide information regarding, at a minimum, rate tariffs, billing cycles, Capacity assignment methods, and Consumption Algorithms.

**20.2.3 Supplier**

The Supplier shall act on behalf of the Customer to acquire Supplies and to deliver them to the Designated Receipt Point pursuant to the service selected by the Customer and the requirements of this tariff.

The Supplier is responsible for enrolling Customers pursuant to Part VII, Section 20.5 of this tariff.

The Supplier must request, complete and sign a Supplier Service Agreement to act as a Supplier on the Company's system, satisfy the Supplier requirements and practices as set forth in Part VII, Section 20.3 of this tariff, be and remain an approved shipper on the upstream pipelines and underground storage facilities on which the Company will assign Capacity, if any, under Part VII, Section 11, and be and remain eligible to provide service to Customers in New Hampshire.

The Supplier is responsible for completing all transactions with the Company and for all applicable charges associated with Customer enrollment and changes in the Customer's service as set forth in Part VII, Section 20.5 and Appendix A.

**20.3 Supplier Requirements and Practices**

20.3.1 The Company shall have the right to establish reasonable financial and non-discriminatory credit standards for qualifying Suppliers. Accordingly, in order to serve Customers on the Company's system, the Supplier shall provide the Company, on a confidential basis, with audited balance sheet and other financial statements, such as annual reports to shareholders and 10-K reports, for the previous three (3) years, as well as two (2) trade and two (2) banking references. To the extent that such annual reports to shareholders are not publicly available, the Supplier shall provide the Company with a comparable list of all corporate affiliates, parent

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

companies, and subsidiaries. The Supplier shall also provide its most recent reports from credit reporting and bond rating agencies. The Supplier shall be subject to a credit investigation by the Company. The Company shall review the Supplier's financial position periodically.

20.3.2 The Supplier shall also confirm in the Supplier Service Agreement that:

- (a) The Supplier is not operating under any chapter of bankruptcy laws and is not subject to liquidation or debt reduction procedures under state laws, such as an assignment for the benefit of creditors, or any information creditors' committee agreement.
- (b) The Supplier is not aware of any change in business conditions which would cause a substantial deterioration in its financial conditions, a condition of insolvency, or the inability to exist as an ongoing business entity.
- (c) The Supplier has no delinquent balances outstanding for services previously provided by the Company, and the Supplier has paid its account according to the established terms and not made deductions or withheld payment for claims not authorized by contract.
- (d) No significant collection lawsuits or judgments are outstanding which would materially affect the Supplier's ability to remain solvent as a business entity.
- (e) The Supplier's New Hampshire business advertising and marketing materials conform to all applicable state and federal laws and regulations.

20.3.3 In the event the Supplier has not demonstrated to the Company's satisfaction that it has met the Company's credit evaluation standards, the Company shall require the Supplier to provide one of the following at the Maximum Financial Liability as calculated below:

- (a) Advance deposit;
- (b) Letter of credit;
- (c) Surety bond; or
- (d) Financial guaranty from a parent company that meets the creditworthiness criteria.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

The Company shall base the Supplier's maximum financial liability as two (2) times the highest month's aggregated Gas Usage of all Customers currently served by the Supplier at the highest Monthly Index in the preceding twenty-four (24) Months. This amount may be updated continuously, and at minimum, whenever the aggregated Gas Usage of all Customers served by the Supplier changes by more than 25%. The Supplier agrees that the Company has the right to access and apply the deposit, letter of credit, or bond to any payment of any outstanding claims that the Company may have against the Supplier, including imbalance charges, cash-out charges, pipeline penalty charges, and other amounts owed to the Company, or to secure additional Gas supplies, including payment of the costs of the Gas supplies themselves, the cost of transportation storage, and other related costs incurred in bringing those Gas supplies into the Company's system. The Supplier shall continue its obligation to maintain its financial security instrument until it has satisfied all of its outstanding claims with the Company. The Supplier's financial security as established above must be in place no later than five (5) Business Days prior to the first day of each calendar month in order for the Supplier to maintain its eligibility to provide service to Customers.

- 20.3.4 The Supplier shall warrant that it has or will have entered into the necessary arrangements for the purchase of Supplies which it desires the Company to transport to its Customers, and that it has or will have entered into the necessary upstream transportation arrangements for the delivery of these Gas supplies to the Designated Receipt Point.
- 20.3.5 The Supplier shall warrant to the Company that it has good title to or lawful possession of all Gas delivered to the Company at the Designated Receipt Point on behalf of the Supplier or the Supplier's Customers. The Supplier shall indemnify the Company and hold it harmless from all suits, actions, debts, accounts, damages, costs, losses, taxes, and expenses arising from or out of any adverse legal claims of third parties to or against said Gas.
- 20.3.6 The Supplier shall be responsible for making all necessary arrangements and securing all required regulatory or governmental approvals, certificates, or permits to enable Gas to be delivered to the Company's system.
- 20.3.7 By agreeing to provide service under this tariff, the Supplier acknowledges that adherence to any applicable law regarding unfair trade practices, truth in advertising law, or law of similar import is required. Any Supplier found by a court of competent jurisdiction to have willfully or repeatedly violated the New Hampshire Consumer Protection Act,

## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

N.H.R.S.A. Ch. 358-A; the Federal Trade Commission Telemarketing Sales Rules, 16 C.F.R. Part 310; or the regulations promulgated pursuant to the Federal Trade Commission Act, 15 U.S.C. § 45 (a) (1), may be suspended or disqualified from acting as a Supplier on the Company's system.

20.3.8 If the Supplier fails to comply with or perform any of the obligations on its part established in this tariff or in the Supplier Service Agreement (e.g., failure to deliver Gas or late payment of bills rendered or failure to execute a capacity assignment), the Company maintains the right to terminate the Supplier's eligibility to act as a Supplier on the Company's system. Written notice of such an intent to terminate the Supplier's eligibility shall be given to the Supplier, its Customers, and the NHPUC. Notification to the Supplier shall be via Registered U.S. Mail - Return Receipt Requested or other means of documented delivery. Upon issuance of such written notice, the Company shall have the right to terminate the Supplier's eligibility to act as a Supplier on the Company's system at the expiration of ten (10) Gas Days after the giving of such notice, unless within such ten (10) Gas Day period the Supplier shall remedy to the full satisfaction of the Company such failure. Termination of such Supplier eligibility for any such cause shall be a cumulative remedy as to the Company, and shall not release the Supplier from its obligation to make payment of any amount or amounts due or to become due from the Supplier to the Company under the Company's applicable tariffs. Customers whose Supplier's deliveries have been terminated will be placed on Sales Service pursuant Part VII, Section 13 of this tariff.

### 20.4 Access to Usage History and Current Billing Information

The Supplier shall be responsible for obtaining the necessary Authorization Number from each Customer prior to requesting the Company to release the Company's historic usage information specific to that Customer to such Supplier.

The Company shall be required to provide the most recent twelve (12) months of a Customer's historic usage data to a Supplier, provided that the Supplier has received the appropriate authorization as set forth above.

### 20.5 Enrollment, Cancellation, and Termination of Supplier Service

20.5.1 The Supplier shall be responsible for obtaining the necessary Authorization Number from each Customer prior to initiating Supplier Service to the Customer.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

20.5.2 The Supplier must provide the Company with the following minimum information in the Company’s predetermined format prior to the commencement or termination of service by the Supplier pursuant to Part VII, Section 20.5 of this tariff:

- (a) The Customer’s name and current Authorization Number;
- (b) The name of the Supplier;
- (c) The Customer’s billing option (for commencement of service);
- (d) The type of change in Supplier Service (e.g., commencement of service, termination of service, or cancellation of service due to the rescission of an agreement with the Supplier by the Customer); and
- (e) Any additional information reasonably required by the Company.

The Company shall determine whether each Customer’s enrollment request as provided by a Supplier is complete and accurate, and matches the Customer’s account record. In the event that the enrollment request is incomplete, inaccurate, or does not match the Customer’s account record, then the Company will notify the Supplier so that the Supplier can resolve any discrepancies.

20.5.3 A change in Supplier Service will normally be made on a monthly metering and billing cycle basis, with changes taking effect on the date of the Customer’s next scheduled meter read. Enrollment forms must be transmitted no less than ten (10) Business Days prior to the Customer’s next scheduled meter read. If more than one Supplier submits a Supplier Service transaction for a given Customer during the monthly billing cycle, the first completed transaction that is received during the cycle shall be accepted. All other transactions shall be rejected. Rejected transactions may be resubmitted after the Customer’s next scheduled meter read.

20.5.4 If the Supplier submits information to the Company to terminate Supplier Service to a Customer less than ten (10) Gas Days before the next scheduled meter read, Supplier Service shall be terminated on the date of the Customer’s subsequent scheduled meter read. The Company shall confirm the termination date for Supplier Service.

20.5.5 In those instances when a Customer who is receiving Supplier Service from an existing Supplier initiates such service with a new Supplier, the Company shall send the date for the Customer’s change in Supplier Service to the existing Supplier.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

20.5.6 To terminate Supplier Service with a Supplier and to initiate Sales Service, a Customer shall so inform the Company and the Supplier. Supplier Service shall be terminated on the date of the Customer's next scheduled meter read provided that the Company receives notice of such termination no less than ten (10) days in advance of the next scheduled meter read. Where such notice is received by the Company in less than ten (10) days in advance of the next scheduled read, the termination shall be effective as of the date of the following scheduled read. The Company shall send the Customer's termination date for Supplier Service to the Supplier.

20.5.7 A Customer who moves within the Company's service territory shall have the opportunity to notify its existing Supplier that it seeks to continue Supplier Service with said Supplier. Upon such notification, the Supplier may enroll the Customer pursuant to the provisions set forth in this Section in order to initiate Supplier Service for the Customer at the new location. The Company shall make the necessary adjustments to the Supplier's affected Aggregation Pools, including but not limited to, changes to Designated Receipt Points, and quantities of Capacity for assignment, if any, pursuant to this tariff and the Supplier's Service Agreement with the Company. In the event that the existing Supplier does not enroll the Customer for Supplier Service at the new location, the Company shall arrange for or provide Sales Service to the Customer.

20.5.8 In those instances when a new Customer moves to the Company's service territory, the Customer's Supplier must enroll the Customer pursuant to the provisions set forth in this Section in order to initiate Supplier Service for the Customer. Otherwise, the Customer shall receive Sales Service in accordance with Part VII, Section 13.

20.5.9 The Company may charge fees to the Supplier for processing the transactions described in this Section, as approved by the NHPUC. These fees are included in Appendix A.

20.6 Aggregation Pools

20.6.1 The aggregation of Customer accounts into an Aggregation Pool is limited by the Delivery Service of the respective Customers. Non-daily metered Customers subscribing to Delivery Service under Rate Schedules G-40, G-41, G-50, G-51 pursuant to Part VII, Section 10.1 must be aggregated in a separate pool from Customers subscribing to daily metered delivery service under Rate Schedules G-42, G-52 and IT or otherwise pursuant to Part VII, Section 9.1.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

20.6.2 Non-daily metered Customers taking Delivery Service pursuant to Part VII, Section 10 of this tariff shall be combined by a Supplier into a single Aggregation Pool within each of the Company's designated Gas Service Areas.

20.6.3 Daily metered Customers taking Delivery Service pursuant to Part VII, Section 9 of this tariff shall be combined by a Supplier into a single Aggregation Pool within each of the Company's designated Gas Service Areas.

20.6.4 A separate Supplier account will be established for each Supplier Aggregation Pool.

20.6.5 The election of any service from the Company by the Supplier shall apply to the entire Aggregation Pool and not just an individual customer in the Aggregation Pool.

20.6.6 The Company may charge a monthly fee to the Supplier for each Aggregation Pool pursuant to Appendix A.

**20.7 Imbalance Trading**

20.7.1 Prior to the imposition of imbalance charges, the Supplier may engage in trading daily and monthly imbalances for the previous Month, provided that daily imbalance trades are communicated to the Company within three (3) Business Days upon the Company's provision of information on Supplier imbalances for said Month.

20.7.2 The Company will make available a list of Suppliers by Gas Service Area making deliveries during the previous Month.

20.7.3 Aggregation Pools affected by the transaction must be located within the same Gas Service Area as defined in Part VII, Section 4, unless waived by the Company.

20.7.4 Daily imbalance trades must be point-specific on those Gas Days when the Transporting Pipeline required the Company to balance on a point-specific basis.

**20.8 Billing and Payment**

20.8.1 By the tenth (10th) Business Day of the calendar month, the Company shall render to the Supplier a statement of the quantities delivered and amounts owed by the Supplier for the prior Month. The Company will

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

provide Suppliers with their Customers' consumption data based on estimated or actual meter readings at the appropriate cycle read dates for each Customer in the Aggregation Pool pursuant to Part VII, Section 12 of this tariff. This data will be provided on a rolling basis as readings or estimates are made.

20.8.2 Calculation of the charges applicable to the Aggregation Pool will be based on aggregated Gas Usage and other such indicators of all Customers in the Aggregation Pool. Billing for charges applicable to an Aggregation Pool, including but not limited to imbalance charges, credits or penalties, shall be billed to the Supplier on a calendar month basis.

20.8.3 The Supplier shall have ten (10) Business Days from the date of such statement to render payment to the Company. The Supplier shall render payment by means of electronic funds transfer to the Company. The late payment rate will apply to all amounts outstanding after ten (10) days.

20.8.4 If the correctness of the Company's bill to the Supplier is questioned or disputed by the Supplier, an explanation should be promptly requested from the Company. If the bill is determined to be incorrect, the Company shall issue a corrected bill. In the event that the Supplier and the Company fail to agree on the amount of the bill, the Supplier may file a complaint with the Commission to resolve such complaint.

21. Customer Designated Representative

21.1 The Customer may appoint a Designated Representative to satisfy or undertake the Customer's duties and obligations; including, but not limited to submitting and/or receiving notices, making nominations, arranging for trades of imbalances, and performing operational and administrative tasks; provided, however, that under no circumstances will the appointment of a Designated Representative relieve the Customer of the responsibility to make full and timely payment to the Company for all Delivery Service provided under this tariff.

21.2 A request by a Designated Representative to the Company that contains the Customer's Authorization Number will be deemed to be confirmation that the Customer has designated such person or entity as a Designated Representative. A Customer may appoint only one (1) Designated Representative per account.

21.3 Under any agency established hereunder, the Company shall rely upon information concerning the applicable Customer's Delivery Service that is provided by the Designated Representative. All such information shall be deemed to have been provided by the Customer. Similarly, any notice or other information provided by the Company to the Designated Representative concerning the

**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

provision of Delivery Service to such Customer shall be deemed to have been provided to the Customer. The Customer shall rely upon any information concerning Delivery Service that is provided to the Designated Representative as if that information had been provided directly to the Customer.

- 21.4 The Customer shall agree to indemnify the Company and hold it harmless from any liability (including reasonable legal fees and expenses) that the Company incurs as a result of the Designated Representative’s negligence or willful misconduct in its performance of agency functions on the Customer’s behalf.

**VII. DELIVERY SERVICE TERMS AND CONDITIONS**

**APPENDICIES**

**APPENDIX A**

**Schedule of Administrative Fees and Charges**

**I. Supplier Balancing Charge:      \$0.75 per MMBtu of Daily Imbalance Volumes**

- Updated effective every November 1 to reflect the Company’s latest balancing resources and associated capacity costs.
- Daily Imbalance Volumes represent the difference between ATV and ATV adjusted for actual EDDs.

**II. Peaking Service Demand Charge:      \$ 35.51 per MMBtu per MDPQ per month for November 2016 through April 2017.**

- Updated effective every November 1 to reflect the Company’s Peaking resources and associated costs.

**III. Company Allowance Calculation:      1.26% - Provided in Attachment 3 to Schedule 10**

**IV. Supplier Services and Associated Fees:**

<b><u>SERVICE</u></b>	<b><u>PRICING</u></b>
Pool Administration (required) <b>Non-Daily Metered Pools only</b>	• \$0.10/month/customer billed @ marketer level
Standard Passthrough Billing (required)	• \$0.60/customer/month billed @ marketer level
Standard Complete Billing (optional – Passthrough Billing fee not required if this service is elected)	• \$1.50/customer/month billed @ marketer level
Customer Administration (required)	• \$10/customer/switch billed @ marketer level

**V. Meter Read Charge:      \$78.00 when customer phone line is not reporting daily data**

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Issued by:



Senior Vice President



**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

Supplier further recognizes and agrees that Company shall have no obligation to honor any nomination or scheduling request from Supplier that, in Company's reasonable judgment, exceeds the scope of Supplier's assigned rights or where such nominations or requests could be reasonably refused, directly or indirectly, based on the terms of this Agreement or Company's Terms and Conditions.

**III. TERMS AND CONDITIONS**

Company's Terms and Conditions, and any and all definitions contained therein, are incorporated herein and made a part hereof to the extent they are applicable hereto and not inconsistent with the provisions of this Agreement. In the event of a conflict, the terms of the Company's Tariff shall control.

**IV. CONDITIONS PRECEDENT**

The following requirements shall be conditions precedent to Company's obligations hereunder:

- Supplier shall provide Company with all information requested in Exhibit A attached hereto and incorporated herein.
- Company has confirmed Supplier's credit worthiness, and any reasonable deposit requested by Company from Supplier has been received by Company.
- Supplier shall register and obtain the necessary certification, authorization and/or licenses from the New Hampshire Public Utilities Commission ("NHPUC"). Supplier shall, as may be required from time to time, periodically provide evidence of such to Company.
- Supplier shall provide Company with evidence satisfactory to Company that Supplier is an approved shipper on the upstream pipelines and has access rights to underground storage facilities on which Company may assign capacity to Supplier.
- Supplier and Company have executed this Agreement.

**V. SUPPLIER CERTIFICATION**

Supplier swears and avers as follows:

- Supplier is not operating under any chapter of bankruptcy laws and is not subject to liquidation or debt reduction procedures under applicable state laws, such as an assignment for the benefit of creditors, or any information creditors' committee agreement.
- Supplier is not aware of any change in business conditions, which would cause a substantial deterioration in its financial conditions, a condition of insolvency, the inability to exist as an ongoing business entity, or the inability to adequately serve its Aggregation Pool.
- Supplier has no delinquent balances outstanding for services previously provided by Company or its affiliates, and that Supplier has paid its accounts

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Title: Senior Vice President

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

- according to the established terms and not made deductions or withheld payment for claims not authorized by contract.
- No significant collection lawsuits or judgments are outstanding which would materially affect Supplier's ability to remain solvent as a business entity.
- Supplier's business practices, advertising and marketing materials conform to all applicable New Hampshire state and federal laws and regulations.
- Supplier shall promptly provide notice to Company of any material change in its financial condition as it relates to Supplier's creditworthiness/solvency.
- Supplier shall notify Company within twenty-four (24) hours in writing upon the occurrence of an event that in any way materially affects Supplier's ability to perform pursuant to and in accordance with the terms of this Agreement including, but not limited to, suspension, revocation, limitation or non-renewal of Supplier's certification/authorization by the NHPUC.

**VI. NOMINATIONS**

Supplier shall communicate all nominations to Company via email. Company will from time to time provide Supplier with email addresses to which all nominations should be communicated. Company shall notify Supplier in writing in the event that any of the email addresses provided become outdated or need to be supplemented. In the event that email is unavailable, alternative electronic means of communicating nominations may include facsimile transmission.

In the event of a discrepancy between any volume nominated by Supplier and confirmed by Company resulting in a shortage, the discrepancy shall be allocated between and among Supplier's Aggregation Pools in the same Gas Service Area in accordance with the Pre-Determined Allocation Method set forth in Exhibit B attached hereto and incorporated herein.

**VII. CAPACITY ASSIGNMENTS**

In accordance with Company's Terms and Conditions, the quantity of capacity assigned to Supplier and Supplier's Maximum Daily Peaking Quantity ("MDPQ") may be modified during the calendar year. Pursuant Company's Terms and Conditions, the quantity of each Company Managed Supply may be modified during the calendar year in accordance with Company's Terms and Conditions.

Pursuant to Company's Terms and Conditions, Supplier shall provide notice to Company of its designation of contracts to be managed by the Company for cost mitigation purposes by the means set forth in Exhibit B.

**VIII. FEES AND SERVICES**

Company shall charge Supplier for any and all fees set forth and allowed by Company's Terms and Conditions. Company may also charge Supplier fees for any

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

additional services agreed to by the Parties and set forth in Exhibit A, which may be amended by the parties in writing from time to time. Company shall have the right to deduct and apply any amounts owed by Supplier to Company for such fees and services, and outstanding for more than thirty (30) days, from any amounts collected in the normal course of business by Company on Supplier's behalf, from any credit balance that may have accrued on Supplier's account(s) with Company, or from any deposit Supplier may have made with Company to secure its performance and payment for debts incurred while doing business with Company or on Company's distribution system. Amounts subject to a good faith dispute will not be subject to deduction.

**IX. BILLING SERVICES**

Pursuant to Company's Terms and Conditions, Supplier may elect to take Standard Complete Billing Service from the Company. In such an event, the Customer shall receive a combined bill from the Company for both Gas supply and related Delivery Service and any other Company provided services. Such combined bill shall be calculated and produced by Company. Election of this service will be made by Supplier in Exhibit B of this Agreement.

Company shall calculate, print, insert and mail combined invoices to the Customer in accordance with Company's normal practices for cycle billing, off-cycle billing and budget billing, as well as the applicable provisions of the Company's Terms and Conditions. Company will consider reasonable requests from Supplier to incorporate Customer pricing options, where such requests are provided in writing. Supplier will be responsible for any additional processing, printing and/or programming expenses incurred by Company that result from the implementation of such a request. Company will provide Supplier with electronic files that report relevant account activity.

Company shall respond to Customer's initial telephone inquiries related to billing and payments and contact Customers and Suppliers as required to address billing or payment problems on a commercially reasonable efforts basis. Company will process transactions to address billing problems and generate correspondence as required to communicate billing information. Notwithstanding any provision of this Agreement to the contrary, Company is not offering Supplier and shall not be required to provide or be responsible for any type of collection activities including, but not limited to, activities normally undertaken by a collection agency, debt collector or credit bureau as those terms are defined under applicable federal and state law. Acting on behalf of Supplier, Company shall acquire the right to invoice members of the Aggregation Pool as soon as such members owe Supplier for services rendered. Supplier shall not transfer to Company for the billing of any overdue/aged accounts and Company has no obligation to accept such accounts, or present aged/overdue balances to Customers. Ultimately, collection of Supplier charges and resolution of dispute of such charges remains the sole responsibility of Supplier.

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

Company shall provide payment processing and lock boxes for mailed payments. Company reserves the right to offer payment options consistent with existing practices and procedures. Partial payments will be applied first to any outstanding charges relating to Company Delivery Service, and second to the most overdue Supplier charges associated with the Customer. If a Customer pays Company more than the full amount billed, Company shall apply any overpayment to the Delivery Service account. Company reserves the right to enter into payment arrangements with Customers, which may or may not include Supplier charges.

Supplier shall provide timely and accurate information to Company regarding Customers, rates and any other information necessary for Company to perform hereunder, including but not limited to information concerning a Customer's filing of bankruptcy or Supplier's pursuit of collection activities. Additional processing runs caused by Supplier's failure to provide adequate information will be performed at Supplier's sole expense. Supplier agrees that services rendered by Company shall not relieve Supplier from any obligation to maintain records or otherwise comply with applicable laws. Supplier agrees that it will maintain backup data and files for all information provided to Company as protection against any loss of such information.

Suppliers not electing the Standard Complete Billing Service will receive the Standard Passthrough Billing Service as defined in the Terms and Conditions.

**X. BILLING, PAYMENT AND DEPOSITS**

Bills, fees, and charges for services provided and issued by Company, including, but not limited to, monthly cashouts, monthly imbalance charges, daily imbalance charges, and any other applicable charges approved by the Terms and Conditions or set forth in this Agreement or any amendments hereto, shall be rendered to Supplier on a monthly basis and shall be due upon receipt of said bill, unless otherwise specified in Exhibit A. In addition to any other right or remedy available to Company, Supplier's failure to make payment within ten (10) days of the posting date on the bill shall result in the addition of interest on any unpaid balance calculated at the maximum monthly rate allowable in Company's Terms and Conditions. Interest shall accrue commencing from the date said bill was posted. The posting date is the date the bill is transmitted to Supplier.

Company shall have the right to deduct, apply and withhold any amounts owed by Supplier to Company for such services, and outstanding for more than thirty (30) days, from any amounts held or accrued in the normal course of business by Company on Supplier's behalf.

At the request of Company, at any time during the term of this Agreement, Supplier shall, upon ten (10) days written notice from Company, provide a deposit equal

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

to a dollar amount representing the greater of Supplier's average of two (2) months' historic billing with Company or the amount of any security deposit required under Company's Terms and Conditions. A deposit shall be payable in cash or certified check. All deposits shall accrue interest in accordance with Company's Terms and Conditions (hereinafter called "Interest Payment"). Such deposit shall be returned to Customer within thirty (30) days of the expiration or termination of this Agreement, provided that Supplier is not in default under this Agreement. Any such deposit may be required and held by Company for the entire term of this Agreement, regardless of Supplier's payment history. Company may deduct or set-off and apply all or any portion of the deposit when any amount payable by Supplier under this Agreement has not been paid when due. Such deduction or set-off may be made without notice or demand of any kind and Company may in its sole discretion apply such deposit against any amount then due and payable. In the event Company applies all or any portion of such deposit, Supplier shall deposit such sums as are necessary to replenish the security deposit to its maximum amount, within ten (10) days of notice of such application.

To secure the prompt payment and performance when due of any and all current or future obligations, indebtedness and liabilities, whether financial or otherwise, contingent or noncontingent, matured or unmatured, or liquidated or unliquidated, which Supplier owes to Company or any of its affiliates (collectively "Obligations"), Supplier grants to Company a continuing security interest in any interest of Supplier in any and all gas which Supplier now or in the future may own, control or have any right or interest in and which now is or in the future may be in the possession of Company in its gas distribution system or otherwise, together with any and all products and proceeds of the foregoing (collectively "Collateral"). Supplier covenants that it will execute and deliver any documents requested by Company in order to evidence or perfect Company's security interest in Collateral and otherwise cooperate with respect to any proceeding that may affect rights of Company hereunder.

Supplier acknowledges and agrees that Company hereby exercises any right which it may have under any applicable tariff or state or federal statute to impose a lien on any and all Collateral in Company's system to secure repayment of Obligations related to such Collateral or related to gas theretofore shipped by Supplier on Company's system and delivered on behalf of Supplier. Supplier acknowledges and agrees that all of its shipments of gas on Company's system pursuant to this Agreement, and all Obligations, security deposits and other adequate assurance provided to Company by Supplier related to such shipments are part of a single, continuing transaction with Company. Subject to any law governing the liens asserted by Company hereunder, Company may dispose of Collateral by public or private sale to retail or wholesale purchasers and may itself acquire same through any such sale. Company agrees to provide Supplier

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

reasonable notice of such sale but in no event shall it be required to give more than ten (10) days' notice.

The Parties agree to cooperate and provide each other with necessary documentation relating to any transactions resulting hereunder, including but not limited to, applicable sales or other tax exemption forms. The Parties agree that Supplier's failure to remit payment of any amount due under this Agreement shall constitute a material breach of this Agreement.

**XI. TERM AND TERMINATION**

This Agreement shall become effective on the date hereof ("Effective Date") and shall continue in full force and effect from month to month. Supplier acknowledges and agrees that Company is obligated to commence services pursuant to this Agreement only upon full satisfaction, or Company's express written waiver, of the Conditions Precedent set forth in Section IV of this Agreement. This Agreement may be terminated by either party by written notice given no less than thirty (30) days prior to the desired termination date, or unless otherwise agreed by the Parties. Notwithstanding the foregoing, the Supplier agrees to abide by all terms of this Agreement until any transactions that are outstanding at the time of termination are completed, including, but not limited to, the payment by Supplier to Company of any and all outstanding balances.

Any party, by written notice to the other party ("Breaching Party") may terminate this Agreement, in whole or in part, with respect to such Breaching Party, or suspend further performance without terminating this Agreement upon the occurrence of any of the following: (a) the Breaching Party terminates or suspends doing business; (b) the Breaching Party becomes subject to any bankruptcy or insolvency proceeding under federal or state law, becomes insolvent, becomes subject to direct control of a transferee, receiver or similar authority, or makes an assignment for the benefit of creditors; or (c) the Breaching Party commits a material breach of any of its obligations under this Agreement or the Terms and Conditions including, but not limited to, failure to pay any amounts due.

The enumeration of the foregoing remedies shall not be deemed a waiver of any other remedies to which either party is entitled in law or equity.

**XII. INDEMNIFICATION AND LIMITATION OF LIABILITY**

Supplier agrees that it shall indemnify, defend and hold the Company and its affiliates, directors, officers, employees, and their agents harmless with respect to any claim, suit, damages or costs (including reasonable attorney's fees) of any kind arising from any Supplier action or inaction or breach hereof. The Parties agree that the Company's reliance upon the nominations, scheduling instructions or other

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**APPENDIX B**

**SUPPLIER SERVICE AGREEMENT  
(continued)**

written consent of the other Party. It is agreed, however, that the restrictions on assignment contained herein shall not in any way prevent either Party from pledging or mortgaging its rights hereunder as security for its indebtedness.

**XV. CONTROLLING LAW**

The interpretation and performance of this Agreement shall be in accordance with and controlled by the laws of the State of New Hampshire, without regard to the doctrines governing choice of law. All disputes arising hereunder shall be brought and heard either before the NHPUC or in the state courts of the State of New Hampshire. The Company's compliance with the order or finding of any governmental agency or court properly exercising jurisdiction over this Agreement or the services rendered hereunder shall not constitute a breach of this Agreement.

**XVI. OTHER IMPORTANT PROVISIONS**

No waiver by any Party of any one or more defaults by the other in the performance of any provision of this Agreement shall operate or be construed as a waiver of any other present or future default or defaults, whether of a like or of a different character. No delay by either party in enforcing any of its rights hereunder shall be deemed a waiver of such rights.

Company shall render service and shall perform hereunder through utilization of existing facilities, licenses and authorizations. Nothing in this Agreement shall be construed as requiring Company to acquire or obtain additional facilities, licenses or authorizations. Any activity hereunder which requires any additional licenses, facilities or authorizations may be discontinued by Company and such discontinuance shall not constitute a breach of this Agreement.

Unless otherwise provided herein, no modification of, or supplement to, the terms and provisions stated in this Agreement shall be or become effective without the written consent of both Parties.

Supplier waives any and all rights to contest any motion by Company for relief from the automatic stay provided for under federal bankruptcy law or under any similar provision of any state law.

Supplier shall not obtain any right or interest in any hardware or software or information used by Company to provide any service to Supplier hereunder.

For the purpose of carrying out the provisions and exercising the rights, powers and privileges granted by Company's Terms and Conditions and/or this Agreement, to the fullest extent authorized by law, effective upon the breach of this Agreement by Supplier, Supplier hereby irrevocably constitutes and appoints Company its true and

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS**

**APPENDIX C**

**Capacity Allocators**

Capacity Allocators shall be calculated and filed with the Commission each year with the Winter Cost of Gas filing. The following Capacity Allocators shall be applicable for capacity assignments during the period of November 1, 2017 through October 31, 2018.

Commercial and Industrial

	<u>High Winter Use</u>	<u>Low Winter Use</u>
Pipeline:	15.54%	60.13%
Storage:	31.09%	14.67%
Peaking:	53.37%	25.20%

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Senior Vice President

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## **VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

### **Appendix D**

#### **Re-entry Surcharge and Conversion Surcharge**

##### **A. Purpose:**

The Re-entry Surcharge and Conversion Surcharge are designed to ensure that Delivery Service Customers migrating to Sales Service pay the full incremental costs of their migration in order to limit inequitable cost shifting to other customers. Specifically, these surcharges are intended to protect against the risk that the incremental cost of gas to serve Delivery Service Customers moving to Sales Service is higher than the average cost of gas.

##### **B. Application of the Re-entry Surcharge and Conversion Surcharge:**

Re-entry Surcharge. Pursuant to Section 13.3, Capacity Assigned Customers who return from Firm Delivery Service to Firm Sales Service will be assessed a Usage based (per therm) charge in addition to the Cost of Gas for all Sales Service consumption following the switch through the following April 30.

Conversion Surcharge. Pursuant to Section 13.4, Capacity Exempt Customers who switch from Firm Delivery Service to Firm Sales Service will be assessed a Usage based (per therm) charge in addition to the Cost of Gas for all Sales Service consumption following the switch through the following April 30.

##### **C. Calculation of Re-entry Surcharge and Conversion Surcharge:**

Re-entry Surcharge. The Re-entry Surcharge will equal zero except for charges to offset any prior period over-collection, credit or refund reflected in the Cost of Gas rate, and shall not be negative. No reductions to the Re-entry Surcharge shall be made to offset prior period under-collections reflected in the Cost of Gas rate.

Conversion Surcharge. The Conversion Surcharge reflects the difference between the estimated cost of providing supply to Capacity Exempt Customers that switch to Sales Service and the effective Cost of Gas rate, shall include charges to offset any prior period over-collection, credit or refund, and shall not be negative. No reductions to the Conversion Surcharge shall be made to offset prior period under-collections reflected in the Cost of Gas rate. During the Peak Season, the Conversion Surcharge for high load factor customers will always be greater than or equal to the difference between high load factor (G-50, G-51, G-52) and low load factor (G-40, G-41, G-42) Cost of Gas rates. During the Off-Peak Season, the Conversion Surcharge will equal the Re-entry Surcharge.

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**VII. DELIVERY SERVICE TERMS AND CONDITIONS (continued)**

**Appendix D**

**Re-entry Surcharge and Conversion Surcharge  
(continued)**

**D. Information to be Filed with the Commission:**

As part of the annual Cost of Gas filing, the Company shall file with the Commission a report showing the number of customers assessed the Re-entry Surcharge and the Conversion Surcharge and the amount of revenue received for each charge through the prior April 30. Pursuant to the Company's Cost of Gas Clause, the Company will apply such revenues as credits to the Company's New Hampshire Division Cost of Gas.

The following Re-entry Surcharge and Conversion Surcharge shall be applicable for the periods of November 1, 2017 through April 30, 2018 and May 1, 2018 through October 2018.

<b>Effective Dates:</b>	<b>November 1, 2017 – April 30, 2018</b>	<b>May 1, 2018 – October 30, 2018</b>
<b>Re-entry Surcharge:</b>	\$0.0082 per therm	\$0.0085 per therm
<b>Conversion Surcharge, Low Load Factor (G-40, G-41, G-42):</b>	\$0.0510 per therm	\$0.0085 per therm
<b>Conversion Surcharge, High Load Factor (G-50, G-51, G-52):</b>	\$0.1522 per therm	\$0.0085 per therm

Issued: April XX, 2018

Effective: May 1, 2018

Issued by:

Title:   
Senior Vice President

Authorized by NHPUC Order No. XX,XXX in Docket No. DG 17-070, dated April xx, 2018.

## VIII. RESIDENTIAL ENERGY EFFICIENCY LOAN PROGRAM

### 1. AVAILABILITY

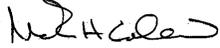
Subject to the Terms and Conditions of the Tariff of which it is a part, this program shall allow Customers installing energy-efficiency measures under the Home Performance with Energy Star Program, an energy efficiency program offered by the Company and approved by the Commission (“Participating Customers”) to borrow all or a portion of the Customer’s share of the installed cost of the energy-efficiency measures (“Customer Loan Amount”) through an additional charge on their monthly electric service bill issued by the Company. It is available to Participating Customers who meet the following qualifications:

1. The Customer must own the residential property where the energy-efficiency measures are installed; and
2. The Customer must have an active Delivery Service account with the Company for the property where the energy-efficiency measures are installed and receive retail delivery service Residential Non-Heat Rate R6 or Residential Heat Rate R5; and
3. The Customer must have good credit with the Company, which is defined as a Customer that has not received a disconnect notice from the Company during the twelve months preceding the Customer’s request for service under this program; and
4. The Customer Loan Amount must be greater than or equal to \$500 and less than or equal \$20,000 and must not exceed the Customer’s share of the installed cost of the energy-efficiency measures installed under the Company’s approved energy-efficiency program.

At its sole discretion, the Company shall determine eligibility for service under this program subject to the availability of program funds. Loans will be available through April 30, 2013 dependent upon the availability of funds from the NH Community Development Finance Authority.

Any Customer taking service under this program must remain a Delivery Service Customer of the Company at the residential property where the energy-efficiency measures are installed. In the event the Customer does not remain a Delivery Service Customer of the Company at the residential property where the energy-efficiency measures are installed, any remaining charges under this program shall immediately become due and payable.

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**VIII. RESIDENTIAL ENERGY EFFICIENCY LOAN PROGRAM  
(CONTINUED)**

**2. CUSTOMER LOAN AGREEMENT**

Participating Customers shall be required to execute a separate Customer Loan Agreement which will specify the fixed monthly charge and the terms of the payment period. A Customer can choose to pay the remaining balance owed to the Company at any time. A late payment charge as described in the Terms and Conditions for Delivery Service section of the Company's Tariff is applicable to the monthly charges rendered under this program.

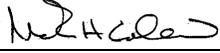
Participating Customers are not subject to disconnection of gas service for nonpayment of the charges under this program.

The Customer Loan Amount shall be paid to the Company by Participating Customer through a fixed monthly charge applied over a term of months as established in the Customer Loan Agreement. Participating Customers may specify the repayment term of the Customer Loan Amount subject to the maximum repayment term limitations as specified below:

<u>Customer Loan Amount</u>	<u>Maximum Repayment Term (in Months)</u>
Greater than or equal to \$500 and less than or equal to \$2,000	24
Greater than \$2,000 and less than or equal to \$3,000	36
Greater than \$3,000 and less than or equal to \$4,000	48
Greater than \$4,000 and less than or equal to \$5,000	60
Greater than \$5,000 and less than or equal to \$6,000	72
Greater than \$6,000 and less than or equal to \$7,500	84
Greater than \$7,500 and less than or equal to \$10,000	96
Greater than \$10,000 and less than or equal to \$15,000	108
Greater than \$15,000 and less than or equal to \$20,000	120

The revolving loan fund is funded through a grant from the NH Community Development Finance Authority.

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**DG 17-070 (Northern Utilities)**  
**Exhibit 8 – Settlement Agreement**  
**Depreciation Accrual Rates**

		<b>Settlement</b>		
		<b>Average</b>	<b>Net</b>	<b>Depreciation</b>
		<b>Service</b>	<b>Salvage</b>	<b>Accrual</b>
		<b>Life</b>	<b>Percent</b>	<b>Rate</b>
		(1)		
<b>Distribution Plant:</b>				
Structures:				
375.20 (1308.6)	Structures – City Gate	70.0	0%	1.43%
375.70 (1308.7)	Structures – Other	70.0	0%	1.43%
	Total Structures			
Mains:				
376.20 (1356.4)	Coated/Wrapped	47.0	-25%	2.66%
376.40 (1356.7)	Plastic	47.0	-35%	2.87%
376.60 (1356.5)	Cathodic Protection	30.0	-25%	4.17%
	Total Mains			
Other Plant:				
378.20 (1358.0)	M & R Station Equipment	30.0	-5%	3.50%
379.00 (2)	M & R Station Equipment-City Gate	30.0	-5%	3.50%
380.00 (1359.0)	Services	45.0	-65%	3.67%
381.00 (1360.0)	Meters	30.0	0%	3.33%
382.00 (1360.0)	Meter Installations	33.0	-10%	3.33%
383.00 (1359.0)	House Regulators	30.0	0%	3.33%
386.00 (1361.0)	Water Heaters/Conversion Burners	13.5	0%	7.41%
	Total Other			
<b>Total Distribution Plant</b>				
<b>General Plant:</b>				
391.10 (1372.1)	Office Furniture & Equip. - Unspec.	11.5	0%	8.70%
394.00 (1375.0)	Tools, Shop & Garage Equipment	19.0	0%	5.26%
396.00 (1377.0)	Power Operated Equipment	15.0	10%	6.00%
397.00 (1378.0)	Communication Equipment	11.0	0%	9.09%
397.35 (1378.0)	Communication Equipment - ERTS	15.0	0%	6.67%
	<b>Total General Plant</b>			

(1) The calculation of depreciation accrual rates is based on the whole-life technique as follows:  
1-(net salvage percent) divided by average service life)

(2) Proposed parameters for Account 379.00 not listed on Staff's Attachment AI-DEP-2.