

Unitil Service Territory Overview Map

ELECTRIC

UES Capital

Boscawen
Bow
Canterbury
Chichester
Concord
Dunbarton

UES Seacoast

Atkinson
Dartmouth
East Kingston
Exeter
Hamptstead
Hampton
Hampton Falls
Kensington
Kingston
Newton
Plaistow
Seabrook
South Hampton
Stratham

FG&E

Ashby
Fitchburg
Lunenburg
Townsend

Northern Utilities NH

Atkinson
Brentwood
Durham
East Kingston
Exeter
Greenland
Hampton Falls
Kensington
Madbury
Newington
North Hampton
Plaistow
Portsmouth
Rochester
Rollinsford
Salem
Seabrook
Somersworth
Stratham

GAS

Northern Utilities ME

Auburn
Biddeford
Cape Elizabeth
Cumberland
Eliot
Gorham
Gray
Kennebunk
Kittery
Lewiston
Lisbon
New Gloucester
North Berwick
Old Orchard Beach
Poland
Portland
Saco
Sanford
Scarborough
South Berwick
South Portland
Wells
Westbrook
Windham

FG&E

Ashby
Fitchburg
Gardner
Lunenburg
Townsend
Westminster



Northern Utilities, Inc.
New Hampshire Division
Historical Weather Normalized Return on Equity 2010-2016
From PUC 509.01 - F-1 Rate of Return

Line No.	Year	Return on Equity
1	2010	3.77%
2	2011	7.43%
3	2012	5.84%
4	2013	7.19%
5	2014	9.28%
6	2015	8.60%
7	2016	8.47%

**Northern Utilities, Inc.
New Hampshire Division
Customer Meter Growth
Comparative Analysis: 2008-2016
Historical Customer Meter Growth**

Line No.	Year	Meters
1	2008	28,670
2	2009	29,566
3	2010	29,439
4	2011	28,867
5	2012	29,525
6	2013	30,221
7	2014	31,150
8	2015	31,713
9	2016	32,282
10	2016 vs 2008 growth percentage	12.6%

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
DOCKET DG 17-070
COMPUTATION OF REVENUE REQUIREMENT FOR TEMPORARY RATES**

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

Schedule RevReq-1

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) AMOUNT
1	Rate Base	Schedule RevReq-5	\$ 130,163,278
2	Rate of Return	Schedule RevReq-6	<u>7.89%</u>
3	Income Required	Line 1 * Line 2	10,269,883
4	Adjusted Net Operating Income	Schedule RevReq-2	<u>9,060,016</u>
5	Deficiency	Line 3 - Line 4	1,209,867
6	Income Tax Effect	Line 7 - Line 5	<u>787,009</u>
7	Revenue Deficiency	1.6505 (Schedule RevReq-1-1) * Line 5	<u><u>\$ 1,996,875</u></u>

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

Schedule RevReq-1-1

LINE NO.	(1) DESCRIPTION	(2) RATE	(3) AMOUNT
1	Federal Income Tax Rate	34.00%	0.3400
2	State Income Tax Rate	8.20%	0.0820
3	Federal Benefit of State Income Tax	-(Line 1 * Line 2)	<u>(0.0279)</u>
4	Northern Effective Tax Rate	(Line 1 + Line 2 + Line 3)	<u>0.3941</u>
5	Gross-Up Factor	(1 / 1 - Line 4)	<u><u>1.6505</u></u>

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

LINE NO.	(1) DESCRIPTION	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		TEST YEAR 12 MONTHS ENDED 12/31/2016	LESS COST OF GAS EXCLUDING PROD. & OH. ⁽¹⁾	OTHER FLOWTHROUGH ⁽²⁾	TEST YEAR DISTRIBUTION, PROD. & OH.	TEST YEAR DISTRIBUTION	TEST YEAR PROD. & OH.	CALENDAR YEAR 2015 ⁽³⁾	CALENDAR YEAR 2014 ⁽³⁾
	Operating Revenues:								
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
	Operating Expenses:								
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).

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

LINE NO.	(1) DESCRIPTION	(2)		(3)		(4)		(5)		(6)	
		TEST YEAR DISTRIBUTION, PROD. & OH.		PRO FORMA ADJUSTMENTS		TEST YEAR DISTRIBUTION, PROD. & OH. PRO FORMA		PROOF REVENUE REQUIREMENT		PRO FORMA RATE RELIEF	
	Operating Revenues:										
1	Total Sales	\$	32,618,935	\$	1,417,934	\$	34,036,869	\$	1,996,875	\$	36,033,745
2	Total Other Operating Revenues		979,079		-		979,079		-		979,079
3	Total Operating Revenues	\$	33,598,014	\$	1,417,934	\$	35,015,948	\$	1,996,875	\$	37,012,824
	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		-		2,994,785		-		2,994,785
7	Customer Accounting		1,725,290		2,498		1,727,788		-		1,727,788
8	Customer Service		2,570		-		2,570		-		2,570
9	Administrative & General		6,111,515		-		6,111,515		-		6,111,515
10	Depreciation		6,118,814		376,599		6,495,413		-		6,495,413
11	Amortizations		74,496		352,468		426,964		-		426,964
12	Taxes Other Than Income		3,763,930		462,380		4,226,310		-		4,226,310
13	Federal Income Tax		3,227,137		97,777		3,324,914		623,265		3,948,179
14	State Income Tax		(269,173)		25,688		(243,485)		163,744		(79,741)
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	\$	1,384,622	\$	25,955,932	\$	787,009	\$	26,742,941
18	Net Operating Income	\$	9,026,704	\$	33,313	\$	9,060,016	\$	1,209,867	\$	10,269,883

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
	Revenue Adjustments			
1	Weather Normalization	Dist Rev	Schedule RevReq-3-1	\$ 897,399
2	Residential Low Income	Dist Rev	Schedule RevReq-3-2	366,440
3	Unbilled Revenue	Dist Rev	Schedule RevReq-3-3	151,597
4	Non-Distribution Bad Debt	Dist Rev	Schedule RevReq-3-4	2,498
5	Special Contract Customer Revenue Adjustment	Dist Rev	Schedule RevReq-3-5	
6	Total Revenue Adjustments			<u>\$ 1,417,934</u>
	Operating & Maintenance Expense Adjustments			
7	Production Expense (O&M)	Prod	Schedule RevReq-3-6	\$ 67,212
8	Payroll	Dist	Schedule RevReq-3-7	
9	Distribution Bad Debt	Cust Acct	Schedule RevReq-3-8	
10	Non-Distribution Bad Debt	Cust Acct	Schedule RevReq-3-4	2,498
11	Medical & Dental Insurances	A&G	Schedule RevReq-3-9	
12	Pension	A&G	Schedule RevReq-3-10	
13	PBOP	A&G	Schedule RevReq-3-10	
14	SERP	A&G	Schedule RevReq-3-10	
15	401K	A&G	Schedule RevReq-3-10	
16	Property & Liability Insurances	A&G	Schedule RevReq-3-11	
17	Postage	A&G	Schedule RevReq-3-12	
18	NH PUC Assessment	A&G	Schedule RevReq-3-13	
19	Inflation Allowance	A&G	Schedule RevReq-3-14	
20	Total Operating & Maintenance Expense Adjustments			<u>\$ 69,710</u>
	Depreciation And Amortization Expense Adjustments			
21	Depreciation Annualization	Depr	Schedule RevReq-3-15 P1	\$ 337,999
22	Proposed Depreciation Rates	Depr	Schedule RevReq-3-15 P2	
23	Production Expense (Depreciation)	Depr	Schedule RevReq-3-6	38,600
24	Reserve Variance Amortization	Amort	Schedule RevReq-3-15 P3	
25	Customer Information System Amortization	Amort	Schedule RevReq-3-16	
26	Plant Acquisition Adjustment	Amort	Schedule RevReq-3-17	352,468
27	Total Depreciation And Amortization Expense Adjustments			<u>\$ 729,067</u>
	Taxes Other Than Income Adjustments			
28	Property Taxes	Oth Tax	Schedule RevReq-3-18	\$ 462,380
29	Payroll Taxes	Oth Tax	Schedule RevReq-3-19	
30	Total Taxes Other Than Income Adjustments			<u>\$ 462,380</u>
	Income Taxes Adjustments			
31	Federal Income Tax	FIT	Schedule RevReq-3-20	\$ 97,777
32	NH State Tax	SIT	Schedule RevReq-3-20	25,688
33	Total Income Taxes Adjustments			<u>\$ 123,465</u>
	Rate Base Adjustments			
34	NH Supplemental Plant Adjustment	Plant	Schedule RevReq-5-3	\$ 2,193,573
35	NH Supplemental Plant Adjustment	Acc Depr	Schedule RevReq-5-3	1,586,351
36	Customer Information System - Accumulated Depreciation	Acc Depr	Schedule RevReq-3-16	
37	Customer Information System - Accumulated Deferred Taxes	RB DIT	Schedule RevReq-3-16	
38	DIT Settlement Adjustment	RB DIT	Schedule RevReq-5-4	1,510,242
39	Cash Working Capital (Due To Pro Forma Adjustments)	CWC	Schedule RevReq-5-2	18,001
40	Total Rate Base Adjustments			<u>\$ (885,018)</u>

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

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

Notes

(1) Refer to Direct Testimony of Paul Normand

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

Schedule RevReq-3-2

LINE NO.	(1) DESCRIPTION	(2) TOTAL
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

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

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

Schedule RevReq-3-4

LINE NO.	(1) DESCRIPTION	(2) TOTAL
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
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							
16	Production Plant Exp							
17	305 - Structures	\$ -	\$ -	\$ -	\$ -	\$ -		
18	311 - LPG Gas Equipment	-	-	-	-	-		
19	320 - Other Equipment	-	-	-	-	-		
20	321 - LNG Equipment	-	-	-	-	-		
21	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
DEPRECIATION ANNUALIZATION
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-15
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) PLANT BALANCE 12/31/2016	(3) CURRENT DEPRECIATION RATES	(4) ANNUAL DEPRECIATION EXPENSE
	Mfg. Gas Produc. Plant:			
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
	Distribution Plant:			
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
	General Plant:			
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
	Non-Depreciable Plant:			
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
	Amortizable Plant:			
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
PLANT ACQUISITION ADJUSTMENTS PURSUANT TO DG 08-048 AND DG 08-079
12 MONTHS ENDED DECEMBER 31, 2016

Schedule RevReq-3-17

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
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

LINE NO.	(1) MUNICIPALITY & STATE	(2) TAXATION PERIOD	(3) TOTAL ANNUALIZED TAXES ⁽¹⁾	(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 ⁽²⁾		<u>0.00%</u>				
26	Total		<u>\$ 3,962,803</u>	<u>\$ 3,500,423</u>	<u>\$ 462,380</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 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%		

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

**Schedule RevReq-3-20
Page 1 of 2**

LINE NO.	(1) DESCRIPTION	(2) Amount
	<u>Increases / (Decreases) To Revenue</u>	
1	Weather Normalization	\$ 897,399
2	Residential Low Income	366,440
3	Unbilled Revenue	151,597
4	Non-Distribution Bad Debt	2,498
5	Special Contract Customer Revenue Adjustment	-
6	Total Revenue Adjustments	<u>\$ 1,417,934</u>
	<u>Increases / (Decreases) To Expenses</u>	
7	Production Expense (O&M)	\$ 67,212
8	Payroll	-
9	Medical & Dental Insurances	-
10	Distribution Bad Debt	-
11	Non-Distribution Bad Debt	2,498
12	Pension	-
13	PBOP	-
14	SERP	-
15	401K	-
16	Property & Liability Insurances	-
17	Postage	-
18	NH PUC Assessment	-
19	Inflation Allowance	-
20	Depreciation Annualization	337,999
21	Proposed Depreciation Rates	-
22	Production Expense (Depreciation)	38,600
23	Reserve Variance Amortization	-
24	Customer Information System Amortization	-
25	Plant Acquisition Adjustment	352,468
26	Property Taxes	462,380
27	Payroll Taxes	-
28	Flowthrough Net Operating Income	498,382
29	Change In Interest Exp (Refer To Schedule RevReq 3-20 Page 2)	(654,871)
30	Total Expense Adjustments	<u>\$ 1,104,668</u>
31	Increase / (Decrease) In Taxable Income	\$ 313,266
32	Effective Federal Income Tax Rate ⁽¹⁾	31.21%
33	NH State Tax Rate ⁽²⁾	8.20%
	<u>Federal Income & NH State Tax</u>	
34	Effective Federal Income Tax	\$ 97,777
35	NH State Tax	<u>25,688</u>
36	Increase (Decrease) In Income Taxes	<u><u>\$ 123,465</u></u>
	<u>Notes</u>	
37	Federal Income Tax Rate	34.00%
38	Federal Benefit of State Tax -(Line 37 * Line 40)	-2.79%
39	(1) Effective Federal Income Tax Rate	<u>31.21%</u>
40	(2) State Income Tax Rate	8.20%
41	Northern New Hampshire Tax Rate (Line 39 + Line 40)	<u><u>39.41%</u></u>

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

Schedule RevReq-3-20
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
1	Ratemaking Interest Synchronization	
2	Rate Base ⁽¹⁾	\$ 130,163,278
3	Cost Of Debt In Proposed Rate Of Return ⁽²⁾	2.98%
4	Interest Expense for Ratemaking	\$ 3,878,866
5	Test Year Interest Expense	
6	Interest Charges (427-431)	\$ 4,533,737
7	Increase / (Decrease) in Interest Expense	\$ (654,871)

Notes

(1) Refer to Schedule RevReq-5

(2) Refer to Schedule RevReq-6

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

Schedule RevReq-5

LINE NO.	DESCRIPTION	(1)	(2)	(3)	(4)
			RATE BASE AT DECEMBER 31, 2016	PRO FORMA ADJUSTMENTS	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	1,586,351	67,455,462
3	Net Utility Plant		143,996,975	607,223	144,604,198
4	Add: M&S Inventories		2,421,808	-	2,421,808
5	Cash Working Capital ⁽¹⁾		227,592	18,001	245,593
6	Sub-Total		2,649,400	18,001	2,667,401
7	Less: Net Deferred Income Taxes		15,167,491	1,510,242	16,677,733
8	Customer Advances		-	-	-
9	Customers Deposits		430,588	-	430,588
10	Sub-Total		15,598,079	1,510,242	17,108,321
11	Rate Base		\$ 131,048,296	\$ (885,018)	\$ 130,163,278

Notes

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

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	\$ 227,592	\$ 227,592	\$ 227,592	\$ 227,592	\$ 227,592	\$ 227,592
	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>\$ 131,048,296</u>	<u>\$ 118,609,614</u>	<u>\$ 117,930,258</u>	<u>\$ 118,522,517</u>	<u>\$ 118,374,112</u>	<u>\$ 120,896,961</u>

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) TEST YEAR PRO FORMA
1	Distribution O&M Expense	Schedule RevReq-2	\$ 11,485,431	\$ 67,212	\$ 11,552,643
2	Tax Expense	Schedule RevReq-2	6,721,895	1,372,853	8,094,748
3	Total		\$ 18,207,326	\$ 1,440,065	\$ 19,647,391
4	Cash Working Capital Requirement:				
5	Other O&M Expense Days Lag (1) / 366	5 days	1.25%	1.25%	1.25%
6	Total Cash Working Capital	Line 5 X Line 3	\$ 227,592	\$ 18,001	\$ 245,592

Notes

(1) Based On Lead-Lag Study In Docket 11-069

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

Schedule RevReq-5-3

LINE NO.	(1) DESCRIPTION	(2) BALANCE 12/31/2016
	Plant In Service:	
	<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
	Depreciation Reserve	
	<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
	Supplemental Plant Adjustment	
34	NH Supplemental Plant Adjustment (Line 17 - Line 6)	\$ 2,193,573
35	ME Supplemental Plant Adjustment (Line 18 - Line 15)	\$ (2,193,573)
	Supplemental Depreciation Reserve Adjustment	
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)	(2)
	DESCRIPTION	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>

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%	6.16%	2.98%	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>7.89%</u>	

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

LINE NO.	(1) DESCRIPTION	(2) AMOUNT	(3) PROFORMA ADJUSTMENT	(4) PROFORMA AMOUNT	(5) 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	11,983,729	-	11,983,729	
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 ⁽¹⁾	-	-	-	0.00%
9	Total	\$ 300,183,729	\$ -	\$ 300,183,729	100.0%

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**

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

Schedule RevReq-6-3

NORTHERN UTILITIES, INC. DOES NOT HAVE PREFERRED STOCK OUTSTANDING

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.								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)]
	ISSUE		DATE ISSUED	TERM	FACE VALUE	OUTSTANDING AMOUNT	ISSUANCE COSTS							
1	6.95%	Sr. Notes	12/3/2008	10 Yrs	\$ 30,000,000	\$ 20,000,000	\$ 266,834	99.11%	\$ 51,188	\$ 19,948,812	\$ 26,707	\$ 1,390,000	\$ 1,416,707	7.10%
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	Total				\$ 155,000,000	\$ 145,000,000	\$ 1,554,580		\$ 933,597	\$ 144,066,403	\$ 94,112	\$ 8,782,500	\$ 8,876,612	6.16%

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

Schedule RevReq-6-5
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) TOTAL
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

LINE NO.	(1) MONTH	(2) MONTH-END AMOUNT OUTSTANDING	(3) AVERAGE DAILY BORROWINGS	(4) MONTHLY SHORT-TERM INTEREST	(5) INTEREST RATE ⁽¹⁾
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).

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

Northern Utilities, Inc.
Gas Inc Stmt - NH - YTD
R_NU_4_BF_NH

	2015 Base	2015 Flowthru	Total	2016 Base	2016 Flowthru	Total
OPERATING REVENUES						
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
Total Sales	31,767,255	43,938,495	75,705,750	31,680,906	32,391,500	64,072,405
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)
Total Other Operating Revenues	975,468	(539,300)	436,168	979,079	(104,143)	874,936
TOTAL OPERATING REVENUES	32,742,723	43,399,195	76,141,918	32,659,985	32,287,357	64,947,341
OPERATING EXPENSES						
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
Total O & M Expenses	12,069,149	41,743,705	53,812,854	11,638,060	30,850,946	42,489,006
Other Operating Expenses:						
Depn. & 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
Total Other Operating Expenses	12,340,842	181,571	12,522,413	12,919,904	-	12,919,904
TOTAL OPERATING EXPENSES	24,409,990	41,925,276	66,335,267	24,557,964	30,850,946	55,408,910
NET UTILITY OPERATING INCOME	8,332,733	1,473,918	9,806,651	8,102,020	1,436,411	9,538,431
OTHER INCOME & DEDUCTIONS						
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)
Net Other Income (Deductions)	21,828	(27,697)	(5,868)	(94,103)	(18,319)	(112,422)
GROSS INCOME	8,354,561	1,446,222	9,800,783	8,007,917	1,418,093	9,426,010
Interest Charges (427 - 432)	4,546,659	2,335	4,548,994	4,645,691	1,842	4,647,533
NET INCOME	3,807,903	1,443,886	5,251,789	3,362,226	1,416,250	4,778,477

Northern Utilities, Inc.
Gas Inc Stmt - NH - YTD
R_NU_4_B_FTxM_NH

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

	Commodity Demand COG Peak	Commodity Demand COG 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
OPERATING REVENUES																	
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
Total Sales	23,048,556	3,132,472	15,734	2,585	121,726	7,439	4,045,368	614,575	1,458,217	(55,172)	-	-	32,391,500	31,680,906	64,072,405	30,373,880	2,017,620
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)	-
Total Other Operating Revenues	(103,524)	(619)	-	-	-	-	-	-	-	-	-	-	(104,143)	979,079	874,936	(104,143)	-
TOTAL OPERATING REVENUES	22,945,031	3,131,853	15,734	2,585	121,726	7,439	4,045,368	614,575	1,458,217	(55,172)	-	-	32,287,357	32,659,985	64,947,341	30,269,737	2,017,620
OPERATING EXPENSES																	
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
Total O & M Expenses	22,398,475	2,738,538	-	-	122,666	6,499	4,045,368	248,135	1,346,436	(55,172)	-	-	30,850,946	11,638,060	42,489,006	29,311,546	1,539,399
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	-	-
Total Other Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	12,919,904	12,919,904	-	-
TOTAL OPERATING EXPENSES	22,398,475	2,738,538	-	-	122,666	6,499	4,045,368	248,135	1,346,436	(55,172)	-	-	30,850,946	24,557,964	55,408,910	29,311,546	1,539,399
NET UTILITY OPERATING INCOME	546,556	393,316	15,734	2,585	(939)	939	-	366,440	111,781	-	-	-	1,436,411	8,102,020	9,538,431	958,190	478,221
OTHER INCOME & DEDUCTIONS																	
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)	-	-
Net Other Income (Deductions)	-	-	(15,846)	(2,472)	-	-	-	-	-	-	-	-	(18,319)	(94,103)	(112,422)	(18,319)	-
GROSS INCOME	546,556	393,316	(112)	112	(939)	939	-	366,440	111,781	-	-	-	1,418,093	8,007,917	9,426,010	939,872	478,221
Interest Charges (427 - 432)	1,842	-	-	-	-	-	-	-	-	-	-	-	1,842	4,645,691	4,647,533	1,842	-
NET INCOME	\$ 544,714	\$ 393,316	\$ (112)	\$ 112	\$ (939)	\$ 939	\$ -	\$ 366,440	\$ 111,781	\$ -	\$ -	\$ -	\$ 1,416,250	\$ 3,362,226	\$ 4,778,477	\$ 938,029	\$ 478,221

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

Workpaper - Cost of Gas

	(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	PRODUCTION	29,182,381	-	29,182,381
5	TRANSMISSION	-	-	-
6	DISTRIBUTION	-	-	-
7	CUSTOMER ACCOUNTING	129,165	-	129,165
8	CUSTOMER SERVICE	-	-	-
9	ADMINISTRATIVE & GENERAL	-	-	-
10	DEPRECIATION	-	-	-
11	AMORTIZATIONS	-	-	-
12	TAXES OTHER THAN INCOME	-	-	-
13	FEDERAL INCOME TAX	-	-	-
14	STATE INCOME TAX	-	-	-
15	DEFERRED FEDERAL & STATE INCOME TAXES	-	-	-
16	INTEREST ON CUSTOMER DEPOSITS	-	-	-
17	TOTAL OPERATING EXPENSES	29,311,546	-	29,311,546
18	NET OPERATING INCOME	958,190	938,029	20,161

NORTHERN UTILITIES, INC.
RATE PLAN OUTLINE

1.0 PURPOSE AND EFFECTIVE DATE

1.1 Purpose

The purpose of the Rate Plan is to establish a procedure that allows Northern Utilities, Inc. (“Northern” or the “Company”), subject to the jurisdiction of the New Hampshire Public Utilities Commission (the “Commission”), to provide annual revenue step increases recovering the incremental revenue requirement associated with the Company’s future capital spending on Eligible Facilities, as defined herein. Additionally, the Rate Plan provides for consumer protections, including a revenue requirement cap and earnings sharing.

1.2 Effective Date

The rate adjustments associated with each Investment Year beginning on and after January 1, 2017 shall be effective July 1 of the following year with a compliance filing due by the last day of March as outlined below:

Investment Year	Rate Year	Compliance Filing Due
January 1-December 31, 2017	July 1, 2018-June 30, 2019	March 31, 2018
January 1-December 31, 2018	July 1, 2019-June 30, 2020	March 31, 2019
January 1-December 31, 2019	July 1, 2020-June 30, 2021	March 31, 2020

2.0 ELIGIBLE FACILITIES

All Eligible Facilities will be eligible for recovery upon Commission review and approval of the annual compliance filing. The Rate Plan will recover the revenue requirement associated with all Eligible Facilities.

3.0 REVENUE REQUIREMENT

An illustrative calculation of the Revenue Requirement is provided in Schedule DLC-6. Revenue Requirement is the sum of the following for each Investment Year:

- Pre-Tax Rate of Return applied to Rate Base associated with capital spending related to Eligible Facilities;
- Depreciation Expense on Plant Additions related to Eligible Facilities; and
- Property Taxes on the Net Utility Plant related to Eligible Facilities.

4.0 CUSTOMER PROTECTIONS

4.1 Revenue Requirement Cap

The cumulative Revenue Requirement related to Eligible Facilities is subject to a cap of \$7,100,000.

4.2 Earnings Sharing

Earnings sharing will be triggered if return on equity as submitted in its annual PUC 509.01 F-1 filing exceeds 11%. If return on equity exceeds 11%, then excess earnings will be shared equally between the distribution ratepayers and the Company.

4.3 Stay Out Provision

Except as specifically provided for under the Rate Plan, the Company may not petition the Commission for distribution base rate adjustments through the end of calendar year 2020. However, if the Company's return on equity is below 7% as submitted in the Company's annual PUC 509.01 F-1 filing, then the Company may petition the Commission for a distribution base rate adjustment before 2020.

4.4 Exogenous Events

For calendar years 2018 and 2019, the Company will be allowed to adjust distribution rates upward or downward resulting from a singular (not collective) exogenous event, as defined herein. For any of the events defined as a State Initiated Cost Change, Federally Initiated Cost Change, Regulatory Cost Reassignment, or Externally Imposed Accounting Rule Change, during the term of this Plan, the Company will be allowed to adjust distribution rates upward or downward (to the extent that the revenue impact of such event is not otherwise captured through another rate mechanism that has been approved by the Commission) if the total distribution revenue impact (positive or negative) of such event exceeds \$200,000.

5.0 EXCESSIVE INFLATION

If the average rate of inflation for calendar years 2018 and 2019, as measured by annual changes in the “Gross Domestic Product Implicit Price Deflator,” exceeds 4 percent, the Company will be allowed, pursuant to the procedure described to increase its distribution revenues effective July 1, 2019 and July 1, 2020, respectively. The amount of increase to distribution revenue shall be equal to the amount by which such average inflation rate exceeds 4 percent multiplied by actual O&M expense in calendar year 2018 and 2019, respectively.

6.0 RATE DESIGN

For the rate adjustments in section 3.0 above, the revenue requirement increase shall be applied proportionally to all customer classes based on distribution revenue, using current distribution rates and test year billing determinants established in Docket No. DG 17-070. The increase shall be collected through customer or energy charges as applicable for all rate classes.

For earnings sharing and exogenous events in section 4.0 above, rate adjustments shall also be applied proportionally to all customer classes based on distribution revenue, using current distribution rates and test year billing determinants established in Docket No. DG 17-070. The charge or credit shall be made through energy usage charges for all rate classes. There will be no change in the customer charge.

7.0 DEFINITIONS

- 1) Accumulated Depreciation is the cumulative net credit balance arising from the provision for Depreciation Expense.
- 2) Accumulated Deferred Income Taxes is the timing difference between book Depreciation Expense and tax depreciation expense utilizing the modified accelerated cost recovery system. The timing difference is multiplied by the federal and statutory effective income tax rate to determine the liability balance.
- 3) Cost of Removal is the cost of demolishing, dismantling, tearing down or otherwise removing gas plant, including the cost of transportation and handling incidental thereto.
- 4) Depreciation Expense is established at 3.42% and is based on the average depreciation rate provided in Docket No. DG 17-070.
- 5) Eligible Facilities are capital spending projects related to the New Hampshire Mains Replacement Program, Gas Main Extensions, Gas Highway Projects, Farm Tap Replacements, Excess Flow Valve Installations and Rochester Reinforcement Projects.

- 6) Externally Imposed Accounting Rule Change shall be deemed to have occurred if the Financial Accounting Standards Board or the Securities and Exchange Commission adopts a rule that requires utilities to use a new accounting rule that is not being utilized by the Company as of January 1, 2018.
- 7) Federally Initiated Cost Change shall mean any externally imposed changes in the federal tax rates, laws, regulations, or precedents governing income, revenue, or sales taxes or any changes in federally imposed fees, which impose new obligations, duties or undertakings, or remove existing obligations, duties or undertakings, and which individually decrease or increase the Company's distribution costs, revenue, or revenue requirement.
- 8) Investment Year is the annual period beginning January 1 and ending December 31 of each calendar year 2017 through 2019 for which capital investments are made by the Company and placed in service.
- 9) Net Utility Plant is the "per books" utility Plant Additions for plant in service after Accumulated Depreciation is deducted and Cost of Removal is added.
- 10) Plant Additions are the capitalized costs of plant placed in service as recorded on the Company's books during the Investment Year.
- 11) Pre-Tax Rate of Return is 11.76% which is established based on the cost of capital and a tax gross up on common stock equity per Docket No. DG 17-070.
- 12) Property Taxes are established at a rate of 2.75%, representing the average system property taxes paid as a percent of net plant in the test year for Docket No. DG 17-070. This percentage will be updated annually to reflect the most recent property tax costs.
- 13) Rate Base is Plant Additions plus Cost of Removal less Accumulated Depreciation less Accumulated Deferred Income Taxes.
- 14) Rate Year is the annual period July 1 through June 30, following the Investment Year.
- 15) State Initiated Cost Change shall mean any externally imposed changes in state or local law or regulatory mandates or changes in other precedents governing income, revenue, sales, franchise, or property or any new or amended regional, state or locally imposed fees (but excluding the effects of routine annual changes in municipal, county and state property tax rates and revaluations), which impose new obligations, duties or undertakings, or remove existing obligations, duties or undertakings, and which individually decrease or increase the Company's distribution costs, revenue, or revenue requirement.
- 16) Regulatory Cost Reassignment shall mean the reassignment of costs and/or revenues now included in the generation, transmission, or distribution functions to or away from the distribution function by the Commission, FERC, NEPOOL, the ISO or any other official agency having authority over such matters.

Northern Utilities, Inc. - New Hampshire
Rate Plan Capital Expenditures - Eligible Facilities
For Calendar Years 2017-2019

Northern Utilities, Inc.
Docket No. DG 17-070
Schedule DLC-6
Page 1 of 3

Rate Effective Date		7/1/2018	7/1/2019	7/1/2020
Line No.	Description	Investment Year 2017	Investment Year 2018	Investment Year 2019
<u>Rate Base:</u>				
1	Utility Plant Additions	\$ 12,089,620	\$ 11,811,566	\$ 10,248,311
2	Cost of Removal	1,067,857	902,298	780,124
3	Capital Expenditures - Eligible Facilities	13,157,477	12,713,864	11,028,435
4	Accumulated Depreciation	206,733	201,978	175,246
5	Net Utility Plant	12,950,744	12,511,886	10,853,189
6	Accumulated Deferred Income Taxes (ADIT)	15,724	15,362	13,329
7	Rate Base	\$ 12,935,021	\$ 12,496,524	\$ 10,839,860
<u>Revenue Requirement:</u>				
8	Rate Base	\$ 12,935,021	\$ 12,496,524	\$ 10,839,860
9	Pre-Tax Rate of Return	11.76%	11.76%	11.76%
10	Return and Related Income Taxes	1,521,201	1,469,632	1,274,803
11	Depreciation Expense	413,465	403,956	350,492
12	Property Taxes ⁽¹⁾	356,145	344,077	298,463
13	Revenue Requirement	\$ 2,290,811	\$ 2,217,664	\$ 1,923,758
<u>Rate Cap Limit:</u>				
14	Revenue Requirement	\$ 2,290,811	\$ 2,217,664	\$ 1,923,758
15	Cumulative Revenue Requirement	2,290,811	4,508,476	6,432,234
16	Revenue Requirement Cap	7,100,000	7,100,000	7,100,000
17	Allowable Revenue Requirement	\$ 2,290,811	\$ 2,217,664	\$ 1,923,758
<u>Supporting Calculations</u>				
<u>Book Depreciation</u>				
18	Utility Plant Additions	\$ 12,089,620	\$ 11,811,566	\$ 10,248,311
19	Book Depreciation Rate ⁽²⁾	3.42%	3.42%	3.42%
20	Book Depreciation	413,465	403,956	350,492
<u>Tax Depreciation</u>				
21	Utility Plant Additions	12,089,620	11,811,566	10,248,311
22	Tax Depreciation Rate	3.75%	3.75%	3.75%
23	Tax Depreciation	453,361	442,934	384,312
24	Tax-Book Timing Difference	39,896	38,978	33,819
25	Income Tax Rate	39.41%	39.41%	39.41%
26	Accumulated Deferred Income Taxes (ADIT)	15,724	15,362	13,329
27	Accumulated Depreciation = Book Depreciation * 0.5	\$ 206,733	\$ 201,978	\$ 175,246

Notes:

- (1) 2.75% rate (2016 Property Taxes of \$3,962,803 / 2016 Net Utility Plant of \$143,996,975)
(2) Book Depreciation Rate Based on the Average Depreciation Rate in Docket No. DG 17-070

Northern Utilities, Inc. - New Hampshire
2017-2019 Eligible Facilities Project Detail
\$'s in Thousands

Northern Utilities, Inc.
Docket No. DG 17-070
Schedule DLC-6
Page 2 of 3

			Investment Year 2017					Investment Year 2018					Investment Year 2019				
Line No.	Budget Category	Work Order	Install	Removal ⁽¹⁾	Total	In Service Date	Install	Removal ⁽¹⁾	Total	In Service Date	Install	Removal ⁽¹⁾	Total	In Service Date			
1	NH Mains Replacement	Sprague Table 1	\$ 5,397	\$ 600	\$ 5,997	MM/YYYY	\$ -	\$ -	\$ -	MM/YYYY	\$ -	\$ -	\$ -	MM/YYYY			
2	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
3	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
4	Total NH Mains Replacement		\$ 5,397	\$ 600	\$ 5,997		\$ -	\$ -	\$ -		\$ -	\$ -	\$ -				
5	Mains Extension Excluding Services	Sprague Table 1	\$ 2,766	\$ -	\$ 2,766	MM/YYYY	\$ 2,168	\$ -	\$ 2,168	MM/YYYY	\$ 2,513	\$ -	\$ 2,513	MM/YYYY			
6	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
7	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
8	Total Mains Extension Excluding Services		\$ 2,766	\$ -	\$ 2,766		\$ 2,168	\$ -	\$ 2,168		\$ 2,513	\$ -	\$ 2,513				
9	City/State Highway Projects	Sprague Table 1	\$ 2,653	\$ 468	\$ 3,121	MM/YYYY	\$ 4,674	\$ 825	\$ 5,499	MM/YYYY	\$ 3,417	\$ 603	\$ 4,020	MM/YYYY			
10	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
11	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
12	Total City/State Highway Projects		\$ 2,653	\$ 468	\$ 3,121		\$ 4,674	\$ 825	\$ 5,499		\$ 3,417	\$ 603	\$ 4,020				
13	Farm Tap Replacements	Sprague Table 1	\$ -	\$ -	\$ -	MM/YYYY	\$ 439	\$ 77	\$ 516	MM/YYYY	\$ 1,003	\$ 177	\$ 1,180	MM/YYYY			
14	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
15	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
16	Total Farm Tap Replacements		\$ -	\$ -	\$ -		\$ 439	\$ 77	\$ 516		\$ 1,003	\$ 177	\$ 1,180				
17	Excess Flow Valve Installations	Sprague Table 1	\$ 500	\$ -	\$ 500	MM/YYYY	\$ 500	\$ -	\$ 500	MM/YYYY	\$ 500	\$ -	\$ 500	MM/YYYY			
18	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
19	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
20	Total Excess Flow Valve Installations		\$ 500	\$ -	\$ 500		\$ 500	\$ -	\$ 500		\$ 500	\$ -	\$ 500				
21	Rochester Reinforcement Projects	Sprague Table 1	\$ 773	\$ -	\$ 773	MM/YYYY	\$ 4,031	\$ -	\$ 4,031	MM/YYYY	\$ 2,814	\$ -	\$ 2,814	MM/YYYY			
22	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
23	[Code Number]	Work Order Name	-	-	-	MM/YYYY	-	-	-	MM/YYYY	-	-	-	MM/YYYY			
24	Total Rochester Reinforcement Projects		\$ 773	\$ -	\$ 773		\$ 4,031	\$ -	\$ 4,031		\$ 2,814	\$ -	\$ 2,814				
25	Total Eligible Facilities Closed to Plant		\$ 12,090	\$ 1,068	\$ 13,157		\$ 11,812	\$ 902	\$ 12,714		\$ 10,248	\$ 780	\$ 11,028				

Notes:

(1) Estimated Cost of Removal Percentages by Eligible Facility Type:

NH Mains Replacement at	10%
Main Extension Excluding Services at	0%
City/State Highway Projects at	15%
Farm Tap Replacements at	15%
Excess Flow Valve Installations at	0%
Rochester Reinforcement Projects at	0%

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

Northern Utilities, Inc.
Docket No. DG 17-070
Schedule DLC-6
Page 3 of 3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Line No.	Description	Amount	Weight	Cost of Capital	Weighted Cost of Capital	Tax Factor	Pre-Tax Cost
1	Common Stock Equity	\$155,183,729	51.70%	10.30%	5.32%	1.6504	8.78%
2	Long Term Debt	145,000,000	48.30%	6.16%	2.98%		2.98%
3	Short Term Debt	-	0.00%	2.19%	0.00%		0.00%
4	Total	<u>\$ 300,183,729</u>	<u>100.00%</u>		<u>8.30%</u>		<u>11.76%</u>

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
NEW HAMPSHIRE FILING REQUIREMENT SCHEDULES
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NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE - COMPUTATION OF REVENUE DEFICIENCY
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) AMOUNT
1	Rate Base	Schedule RevReq-5	\$ 131,491,801
2	Rate of Return	Schedule RevReq-6	8.30%
3	Income Required	Line 1 * Line 2	10,913,819
4	Adjusted Net Operating Income	Schedule RevReq-2	8,048,949
5	Deficiency	Line 3 - Line 4	2,864,870
6	Income Tax Effect	Line 7 - Line 5	1,863,575
7	Revenue Deficiency	1.6505 (Schedule RevReq-1-1) * Line 5	\$ 4,728,445

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 1 - OPERATING INCOME STATEMENT
12 MONTHS ENDED DECEMBER 31, 2016

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			LESS						
LINE NO.	DESCRIPTION	TEST YEAR 12 MONTHS ENDED 12/31/2016	COST OF GAS EXCLUDING PROD. & OH. ⁽¹⁾	OTHER FLOWTHROUGH ⁽²⁾	TEST YEAR DISTRIBUTION, PROD. & OH.	TEST YEAR DISTRIBUTION	TEST YEAR PROD. & OH.	CALENDAR YEAR 2015 ⁽³⁾	CALENDAR YEAR 2014 ⁽³⁾
	Operating Revenues:								
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
	Operating Expenses:								
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) See Workpaper - Cost of Gas

(2) See 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).

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 1 ATTACHMENT - SUMMARY OF ADJUSTMENTS
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) CLASSIFICATION	(3) SCHEDULE NO.	(4) AMOUNT
	Revenue Adjustments			
1	Weather Normalization	Dist Rev	Schedule RevReq-3-1	\$ 897,399
2	Residential Low Income	Dist Rev	Schedule RevReq-3-2	366,440
3	Unbilled Revenue	Dist Rev	Schedule RevReq-3-3	151,597
4	Non-Distribution Bad Debt	Dist Rev	Schedule RevReq-3-4	2,498
5	Special Contract Customer Revenue Adjustment	Dist Rev	Schedule RevReq-3-5	42,845
6	Total Revenue Adjustments			<u>\$ 1,460,779</u>
	Operating & Maintenance Expense Adjustments			
7	Production Expense (O&M)	Prod	Schedule RevReq-3-6	\$ 67,212
8	Payroll	Dist	Schedule RevReq-3-7	273,315
9	Distribution Bad Debt	Cust Acct	Schedule RevReq-3-8	89,445
10	Non-Distribution Bad Debt	Cust Acct	Schedule RevReq-3-4	2,498
11	Medical & Dental Insurances	A&G	Schedule RevReq-3-9	(11,878)
12	Pension	A&G	Schedule RevReq-3-10	37,510
13	PBOP	A&G	Schedule RevReq-3-10	150,217
14	SERP	A&G	Schedule RevReq-3-10	28,544
15	401K	A&G	Schedule RevReq-3-10	21,621
16	Property & Liability Insurances	A&G	Schedule RevReq-3-11	48,435
17	Postage	A&G	Schedule RevReq-3-12	4,415
18	NH PUC Assessment	A&G	Schedule RevReq-3-13	219,575
19	Inflation Allowance	A&G	Schedule RevReq-3-14	136,865
20	Total Operating & Maintenance Expense Adjustments			<u>\$ 1,067,774</u>
	Depreciation And Amortization Expense Adjustments			
21	Depreciation Annualization	Depr	Schedule RevReq-3-15 P1	\$ 337,999
23	Proposed Depreciation Rates	Depr	Schedule RevReq-3-15 P2	541,522
24	Production Expense (Depreciation)	Depr	Schedule RevReq-3-6	38,600
25	Reserve Variance Amortization	Amort	Schedule RevReq-3-15 P3	-
26	Customer Information System Amortization	Amort	Schedule RevReq-3-16	(43,376)
27	Plant Acquisition Adjustment	Amort	Schedule RevReq-3-17	352,468
28	Total Depreciation And Amortization Expense Adjustments			<u>\$ 1,227,214</u>
	Taxes Other Than Income Adjustments			
29	Property Taxes	Oth Tax	Schedule RevReq-3-18	\$ 678,611
30	Payroll Taxes	Oth Tax	Schedule RevReq-3-19	24,915
31	Total Taxes Other Than Income Adjustments			<u>\$ 703,526</u>
	Income Taxes Adjustments			
31	Federal Income Tax	FIT	Schedule RevReq-3-20	\$ (443,471)
32	NH State Tax	SIT	Schedule RevReq-3-20	(116,508)
33	Total Income Taxes Adjustments			<u>\$ (559,979)</u>
	Rate Base Adjustments			
34	NH Supplemental Plant Adjustment	Plant	Schedule RevReq-5-3	\$ 2,193,573
35	NH Supplemental Plant Adjustment	Acc Depr	Schedule RevReq-5-3	1,586,351
36	Customer Information System - Accumulated Depreciation	Acc Depr	Schedule RevReq-3-16	(307,244)
37	Customer Information System - Accumulated Deferred Taxes	RB DIT	Schedule RevReq-3-16	121,091
38	DIT Settlement Adjustment	RB DIT	Schedule RevReq-5-4	1,510,242
39	Cash Working Capital (Due To Pro Forma Adjustments)	CWC	Schedule RevReq-5-2	195,383
40	Total Rate Base Adjustments			<u>\$ (521,483)</u>

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
 SCHEDULE 1A - PROPERTY TAXES
 12 MONTHS ENDED DECEMBER 31, 2016

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

Notes

(1) Based on final 2016 property tax bills

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

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
 SCHEDULE 1B - PAYROLL
 12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	CATEGORY	(2) 12 MONTHS ENDED 12/31/2016
1	<u>Operation & Maintenance:</u>	
2	Operations	\$ 1,033,954
3	Maintenance	99,813
4	Allocated Clearing	56,750
5	Allocated Unproductive	23,693
6	Allocated MDS	773,125
7	Allocated Incentive Compensation	8,468
8	Total Gas Operations	\$ 1,995,803
9	<u>Construction:</u>	
10	Direct Payroll	\$ 528,149
11	Construction Overheads	967,334
12	Allocated Clearing	130,367
13	Allocated Unproductive	124,390
14	Allocated MDS	38,421
15	Allocated Incentive Compensation	44,455
16	Total Construction	\$ 1,833,116
17	<u>Other:</u>	
18	Jobbing	\$ 17,232
19	Below the line MDS	3,845
20	Other	32,261
21	Total Other	\$ 53,338
22	Total Payroll	\$ 3,882,257

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
 SCHEDULE 1C - NORMALIZATIONS
 12 MONTHS ENDED DECEMBER 31, 2016**

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	To Increase Test Year Base Revenue to Normalize for the Effect of Warmer Than Normal Weather ⁽¹⁾	\$ 897,399
2	Pro Forma Adjustment to Remove Unbilled Revenue ⁽²⁾	\$ 151,597

Notes

(1) See Schedule RevReq 3-1

(2) See Schedule RevReq 3-3

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 2 - ASSETS & DEFERRED CHARGES
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) Category	(2) New Hampshire	(3) 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

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
 SCHEDULE 2A - STOCKHOLDERS EQUITY & LIABILITIES
 12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) Category	(2) New Hampshire	(3) 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

**NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 2B - MATERIALS & SUPPLIES
12 MONTHS ENDED DECEMBER 31, 2016**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LINE NO.	DESCRIPTION	DECEMBER 31 2016	SEPTEMBER 30 2016	JUNE 30 2016	MARCH 31 2016	DECEMBER 31 2015	5 QUARTER AVERAGE
1	Material and Supplies	\$ 2,191,928	\$ 2,302,844	\$ 2,199,829	\$ 2,066,014	\$ 1,960,475	\$ 2,144,218
2	Stores Expense Undistributed	229,880	152,222	290,915	387,527	305,511	273,211
3	Total M&S Inventories	\$ 2,421,808	\$ 2,455,066	\$ 2,490,744	\$ 2,453,541	\$ 2,265,986	\$ 2,417,429

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 3 - RATE BASE
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(6) RATE BASE AT DECEMBER 31, 2016		(7) PRO FORMA ADJUSTMENTS		(8) 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		67,148,218
3	Net Utility Plant		143,996,975		914,467		144,911,442
4	Add: M&S Inventories		2,421,808		-		2,421,808
5	Cash Working Capital ⁽¹⁾		1,192,580		195,383		1,387,963
6	Sub-Total		3,614,388		195,383		3,809,771
7	Less: Net Deferred Income Taxes		15,167,491		1,631,333		16,798,824
8	Customer Advances		-		-		0
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)	\$	131,491,801

Notes:

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

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
SCHEDULE 3A - WORKING CAPITAL
12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) TEST YEAR ACTUAL	(4) PRO FORMA ADJUSTMENTS	(5) TEST YEAR PRO FORMA
1	Distribution O&M Expense	Schedule RevReq-2	\$ 11,485,431	\$ 975,830	\$ 12,461,261
2	Tax Expense	Schedule RevReq-2	6,721,895	2,007,121	8,729,016
3	Total		<u>\$ 18,207,326</u>	<u>\$ 2,982,951</u>	<u>\$ 21,190,277</u>
4	Cash Working Capital Requirement:				
5	Other O&M Expense Days Lag (1) / 366	24 days	<u>6.55%</u>	<u>6.55%</u>	<u>6.55%</u>
6	Total Cash Working Capital	Line 5 X Line 3	<u>\$ 1,192,580</u>	<u>\$ 195,383</u>	<u>\$ 1,387,963</u>

Notes

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

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
 SCHEDULE 3B - 13 MONTH RATE BASE ACCOUNTS
 12 MONTHS ENDED DECEMBER 31, 2016

LINE NO.	(1) ACCOUNT	(2) 12/31/2015	(3) 1/31/2016	(4) 2/29/2016	(5) 3/31/2016	(6) 4/30/2016	(7) 5/31/2016	(8) 6/30/2016	(9) 7/31/2016	(10) 8/31/2016	(11) 9/30/2016	(12) 10/31/2016	(13) 11/30/2016	(14) 12/31/2016
1	UTILITY PLANT IN SERVICE	\$ 194,433,732	\$ 195,014,296	\$ 196,107,407	\$ 196,470,600	\$ 196,645,606	\$ 196,808,371	\$ 197,503,424	\$ 197,828,685	\$ 198,128,174	\$ 200,038,501	\$ 202,120,723	\$ 205,182,274	\$ 209,866,086
2	RESERVE FOR DEPRECIATION & AMORTIZATION	(61,477,716)	(61,970,934)	(62,388,693)	(62,897,701)	(63,380,093)	(63,477,467)	(63,952,560)	(64,442,115)	(64,935,300)	(65,302,474)	(65,718,300)	(66,018,990)	(65,869,111)
3	M&S INVENTORIES	2,265,986	2,020,882	1,992,652	2,453,541	2,028,261	2,038,435	2,490,744	2,182,388	2,188,806	2,455,066	2,174,368	2,031,569	2,421,808
4	CASH WORKING CAPITAL	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580	1,192,580
5	NET DEFERRED INCOME TAXES	16,640,950	15,004,350	14,935,209	17,301,051	16,509,371	17,269,953	17,930,750	17,828,804	19,771,203	18,393,093	21,380,890	18,602,396	15,167,491
6	CUSTOMER ADVANCES	-	-	-	-	-	-	-	-	-	-	-	-	-
7	CUSTOMERS DEPOSITS	434,532	436,290	430,634	430,464	427,130	413,778	408,192	405,952	414,893	415,978	417,345	428,552	430,588

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

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

Schedule RevReq-1

LINE NO.	(1) DESCRIPTION	(2) REFERENCE	(3) AMOUNT
1	Rate Base	Schedule RevReq-5	\$ 131,491,801
2	Rate of Return	Schedule RevReq-6	<u>8.30%</u>
3	Income Required	Line 1 * Line 2	10,913,819
4	Adjusted Net Operating Income	Schedule RevReq-2	<u>8,048,949</u>
5	Deficiency	Line 3 - Line 4	2,864,870
6	Income Tax Effect	Line 7 - Line 5	<u>1,863,575</u>
7	Revenue Deficiency	1.6505 (Schedule RevReq-1-1) * Line 5	<u><u>\$ 4,728,445</u></u>

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

Schedule RevReq-1-1

LINE NO.	(1) DESCRIPTION	(2) RATE	(3) AMOUNT
1	Federal Income Tax Rate	34.00%	0.3400
2	State Income Tax Rate	8.20%	0.0820
3	Federal Benefit of State Income Tax	-(Line 1 * Line 2)	<u>(0.0279)</u>
4	Northern Effective Tax Rate	(Line 1 + Line 2 + Line 3)	<u>0.3941</u>
5	Gross-Up Factor	(1 / 1 - Line 4)	<u><u>1.6505</u></u>

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

Schedule RevReq-2
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		TEST YEAR 12 MONTHS ENDED 12/31/2016	LESS COST OF GAS EXCLUDING PROD. & OH. ⁽¹⁾	OTHER FLOWTHROUGH ⁽²⁾	TEST YEAR DISTRIBUTION, PROD. & OH.	TEST YEAR DISTRIBUTION	TEST YEAR PROD. & OH.	CALENDAR YEAR 2015 ⁽³⁾	CALENDAR YEAR 2014 ⁽³⁾
	Operating Revenues:								
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
	Operating Expenses:								
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).

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

Schedule RevReq-2
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2)		(3)		(4)		(5)		(6)	
		TEST YEAR DISTRIBUTION, PROD. & OH.		PRO FORMA ADJUSTMENTS		TEST YEAR DISTRIBUTION, PROD. & OH. PRO FORMA		PROOF		PRO FORMA RATE RELIEF	
								REVENUE REQUIREMENT			
	Operating Revenues:										
1	Total Sales	\$	32,618,935	\$	1,460,779	\$	34,079,714	\$	4,728,445	\$	38,808,159
2	Total Other Operating Revenues		979,079		-		979,079		-		979,079
3	Total Operating Revenues	\$	33,598,014	\$	1,460,779	\$	35,058,793	\$	4,728,445	\$	39,787,238
	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		273,315		3,268,101		-		3,268,101
7	Customer Accounting		1,725,290		91,943		1,817,234		-		1,817,234
8	Customer Service		2,570		-		2,570		-		2,570
9	Administrative & General		6,111,515		635,303		6,746,818		-		6,746,818
10	Depreciation		6,118,814		918,121		7,036,935		-		7,036,935
11	Amortizations		74,496		309,092		383,589		-		383,589
12	Taxes Other Than Income		3,763,930		703,526		4,467,456		-		4,467,456
13	Federal Income Tax		3,227,137		(443,471)		2,783,666		1,475,842		4,259,509
14	State Income Tax		(269,173)		(116,508)		(385,681)		387,732		2,052
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	\$	2,438,534	\$	27,009,844	\$	1,863,575	\$	28,873,419
18	Net Operating Income	\$	9,026,704	\$	(977,755)	\$	8,048,949	\$	2,864,870	\$	10,913,819

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
	Revenue Adjustments			
1	Weather Normalization	Dist Rev	Schedule RevReq-3-1	\$ 897,399
2	Residential Low Income	Dist Rev	Schedule RevReq-3-2	366,440
3	Unbilled Revenue	Dist Rev	Schedule RevReq-3-3	151,597
4	Non-Distribution Bad Debt	Dist Rev	Schedule RevReq-3-4	2,498
5	Special Contract Customer Revenue Adjustment	Dist Rev	Schedule RevReq-3-5	42,845
6	Total Revenue Adjustments			<u>\$ 1,460,779</u>
	Operating & Maintenance Expense Adjustments			
7	Production Expense (O&M)	Prod	Schedule RevReq-3-6	\$ 67,212
8	Payroll	Dist	Schedule RevReq-3-7	273,315
9	Distribution Bad Debt	Cust Acct	Schedule RevReq-3-8	89,445
10	Non-Distribution Bad Debt	Cust Acct	Schedule RevReq-3-4	2,498
11	Medical & Dental Insurances	A&G	Schedule RevReq-3-9	(11,878)
12	Pension	A&G	Schedule RevReq-3-10	37,510
13	PBOP	A&G	Schedule RevReq-3-10	150,217
14	SERP	A&G	Schedule RevReq-3-10	28,544
15	401K	A&G	Schedule RevReq-3-10	21,621
16	Property & Liability Insurances	A&G	Schedule RevReq-3-11	48,435
17	Postage	A&G	Schedule RevReq-3-12	4,415
18	NH PUC Assessment	A&G	Schedule RevReq-3-13	219,575
19	Inflation Allowance	A&G	Schedule RevReq-3-14	136,865
20	Total Operating & Maintenance Expense Adjustments			<u>\$ 1,067,774</u>
	Depreciation And Amortization Expense Adjustments			
21	Depreciation Annualization	Depr	Schedule RevReq-3-15 P1	\$ 337,999
22	Proposed Depreciation Rates	Depr	Schedule RevReq-3-15 P2	541,522
23	Production Expense (Depreciation)	Depr	Schedule RevReq-3-6	38,600
24	Reserve Variance Amortization	Amort	Schedule RevReq-3-15 P3	-
25	Customer Information System Amortization	Amort	Schedule RevReq-3-16	(43,376)
26	Plant Acquisition Adjustment	Amort	Schedule RevReq-3-17	352,468
27	Total Depreciation And Amortization Expense Adjustments			<u>\$ 1,227,214</u>
	Taxes Other Than Income Adjustments			
28	Property Taxes	Oth Tax	Schedule RevReq-3-18	\$ 678,611
29	Payroll Taxes	Oth Tax	Schedule RevReq-3-19	24,915
30	Total Taxes Other Than Income Adjustments			<u>\$ 703,526</u>
	Income Taxes Adjustments			
31	Federal Income Tax	FIT	Schedule RevReq-3-20	\$ (443,471)
32	NH State Tax	SIT	Schedule RevReq-3-20	(116,508)
33	Total Income Taxes Adjustments			<u>\$ (559,979)</u>
	Rate Base Adjustments			
34	NH Supplemental Plant Adjustment	Plant	Schedule RevReq-5-3	\$ 2,193,573
35	NH Supplemental Plant Adjustment	Acc Depr	Schedule RevReq-5-3	1,586,351
36	Customer Information System - Accumulated Depreciation	Acc Depr	Schedule RevReq-3-16	(307,244)
37	Customer Information System - Accumulated Deferred Taxes	RB DIT	Schedule RevReq-3-16	121,091
38	DIT Settlement Adjustment	RB DIT	Schedule RevReq-5-4	1,510,242
39	Cash Working Capital (Due To Pro Forma Adjustments)	CWC	Schedule RevReq-5-2	195,383
40	Total Rate Base Adjustments			<u>\$ (521,483)</u>

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

Schedule RevReq-3-1

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

Notes

(1) Refer to Direct Testimony of Paul Normand

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

Schedule RevReq-3-2

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

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

Schedule RevReq-3-3

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

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

Schedule RevReq-3-4

LINE NO.	(1) DESCRIPTION	(2) TOTAL
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

Schedule RevReq-3-5

LINE NO.	(1)	(2)
	DESCRIPTION	TOTAL
1	Full Year Special Contract Customer Revenue at Special Contract Rate ⁽¹⁾	\$ 1,182,788
2	Test Year Special Contract Customer Actual Revenue ⁽¹⁾	<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

Schedule RevReq-3-6

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							
16	Production Plant Exp							
17	305 - Structures	\$ -	\$ -	\$ -	\$ -	\$ -		
18	311 - LPG Gas Equipment	-	-	-	-	-		
19	320 - Other Equipment	-	-	-	-	-		
20	321 - LNG Equipment	-	-	-	-	-		
21	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

Schedule RevReq-3-7
Page 1 of 2

LINE NO.	(1) 12 MONTHS ENDED DECEMBER 31, 2016 DESCRIPTION	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		HOURLY	NONUNION SALARIED	TOTAL	UNION	SUBTOTAL	FROM USC NONUNION	TOTAL
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 ⁽¹⁾	-	-	-	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 ⁽²⁾	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 ⁽³⁾	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 ⁽⁴⁾	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%

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 ⁽¹⁾	\$ 4,580,600
2	2017 Salary & Wage Increase ⁽²⁾	4.39%
3	Payroll Increase	201,088
4	Proforma Payroll for 2017 Increase	4,781,689
5	2018 Salary & Wage Increase ⁽²⁾	4.39%
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	30.53%
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	3,182,177
12	O&M Payroll Increase	\$ 285,491

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
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
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	<u>\$173,011</u>	<u>\$33,885,882</u>	
4	Total	\$693,256	\$101,996,299	
5	Net Write-Offs as a % of Delivery Retail Billed Revenue			0.68%
6	Per Books Delivery Retail Billed Revenue			\$ 33,885,882
7	Revenue Increase from Rate Case			<u>4,728,445</u>
8	2016 Total Normalized Delivery Retail Billed Revenue			\$ 38,614,327
9	Uncollectible Delivery Revenue			\$ 262,457
10	Less: Test Year Delivery Write-Offs			<u>\$ 173,011</u>
11	Increase in Delivery Write-Offs			<u><u>\$ 89,445</u></u>

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

Schedule RevReq-3-9

LINE NO.	(1) DESCRIPTION	(2) TOTAL	(3) NuNH ⁽¹⁾	(4) UNITIL SERVICE CORP. ⁽²⁾
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	<u>\$ (11,878)</u>	<u>\$ (9,501)</u>	<u>\$ (2,377)</u>

Notes

(1) Refer to Workpaper 3.1

(2) Refer to Workpaper 3.3

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)	(2)
	DESCRIPTION	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	<u>\$ 237,891</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 for 401k Related Expenses

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

Schedule RevReq-3-11

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

Notes

(1) Refer to Workpaper 5.1

(2) Refer to Workpaper 5.2

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	<u>-1.12%</u>
3	Decrease in Test Year Postage Expense	<u>(1,734)</u>
4	Test Year Adjusted Postage Expense	153,306
5	1/22/2017 USPS Postage Increase	<u>4.01%</u>
6	Increase in 2017 Postage Expense	6,148
7	Total Postage Increase (Line 3 + Line 6)	<u>\$ 4,415</u>

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

Schedule RevReq-3-13

LINE NO.	(1) DESCRIPTION	(2) TOTAL
1	2017 NH PUC Assessment	\$ 310,650
2	Test Year Total PUC Assessment	339,210
3	Less: Test Year PUC Assessment Charged to LDAC	248,135
4	Test Year Base PUC Assessment	91,075
5	Adjustment for 2017 NH PUC Assessment (Line 1 - Line 4)	\$ 219,575

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) AMOUNT AS FILED
1	Test Year Distribution O&M Expenses	\$ 11,638,060
	Less Normalizing Adjustments Items:	
2	Payroll	\$ 5,177,981
3	Medical and Dental Insurance	587,827
4	401K Costs	264,885
5	Property & Liability Insurance	249,013
6	Postage	155,040
7	PUC Assessment	91,075
8	Total Normalizing Adjustment Items	\$ 6,525,820
	Less Items not Subject to Inflation:	
9	Pension	\$ 602,949
10	Postemployment Benefits Other than Pensions	613,939
11	SERP	141,672
12	Bad Debts	170,513
13	Amortizations - USC Charge	12,118
14	Facility Leases - USC Charge	358,261
15	Total Items not Subject to Inflation	\$ 1,899,452
16	Residual O&M Expenses	\$ 3,212,788
17	Projected Inflation Rate ⁽¹⁾	4.26%
18	Increase in Other O&M Expense for Inflation	\$ 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

Schedule RevReq-3-14
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2) INDEX ⁽¹⁾
	GDPIPD Index Value at the end of the Test Year:	
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
	GDPIPD Index Value at date of permanent rates :	
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

Schedule RevReq-3-15
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) PLANT BALANCE 12/31/2016	(3) CURRENT DEPRECIATION RATES	(4) ANNUAL DEPRECIATION EXPENSE
	Mfg. Gas Produc. Plant:			
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
	Distribution Plant:			
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
	General Plant:			
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
	Non-Depreciable Plant:			
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
	Amortizable Plant:			
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

Schedule RevReq-3-15
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2) PLANT BALANCE 12/31/2016	(3) PROPOSED DEPRECIATION RATES	(4) PROPOSED DEPRECIATION EXPENSE
	Mfg. Gas Produc. Plant:			
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
	Distribution Plant:			
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
	General Plant:			
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
	Non-Depreciable Plant:			
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
	Amortizable Plant:			
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 ⁽¹⁾			\$ 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 ⁽¹⁾	\$ 65,055,735
2	Reserve Variance at 12/31/2016 ⁽²⁾	(829,634)
3	Reserve Variance as a Percentage of Book Reserve	1.3%
4	Reserve Variance to Amortize	-

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

Schedule RevReq-3-16

LINE NO.	(1) DESCRIPTION	(2) PROJECT COST	(3) TEST YEAR ⁽¹⁾	(4) STIPULATED ⁽²⁾	(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				85 months
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

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

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
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

LINE NO.	(1) MUNICIPALITY & STATE	(2) TAXATION PERIOD	(3) TOTAL ANNUALIZED TAXES ⁽¹⁾	(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 ⁽²⁾		5.46%				
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 TAX ESCALATION RATE
12 MONTHS ENDED DECEMBER 31, 2016**

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

LINE NO.	(1)	(2)	(2)	(2)
	DESCRIPTION	2016	2015	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%		

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

Schedule RevReq-3-19

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	SOCIAL SECURITY	MEDICARE	TOTAL
1	Increase in O&M Payroll ⁽¹⁾	\$ 428,221	\$ 428,221	
	Less Amounts in Excess of Taxable Limit ⁽²⁾			
2	Northern Utilities - NH Division ⁽³⁾	(9,287)		
3	Unitil Service Corp. ⁽⁴⁾	(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

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

Schedule RevReq-3-20
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) Amount
	<u>Increases / (Decreases) To Revenue</u>	
1	Weather Normalization	\$ 897,399
2	Residential Low Income	366,440
3	Unbilled Revenue	151,597
4	Non-Distribution Bad Debt	2,498
5	Special Contract Customer Revenue Adjustment	42,845
6	Total Revenue Adjustments	<u>\$ 1,460,779</u>
	<u>Increases / (Decreases) To Expenses</u>	
7	Production Expense (O&M)	\$ 67,212
8	Payroll	273,315
9	Medical & Dental Insurances	(11,878)
10	Distribution Bad Debt	89,445
11	Non-Distribution Bad Debt	2,498
12	Pension	37,510
13	PBOP	150,217
14	SERP	28,544
15	401K	21,621
16	Property & Liability Insurances	48,435
17	Postage	4,415
18	NH PUC Assessment	219,575
19	Inflation Allowance	136,865
20	Depreciation Annualization	337,999
21	Proposed Depreciation Rates	541,522
22	Production Expense (Depreciation)	38,600
23	Reserve Variance Amortization	-
24	Customer Information System Amortization	(43,376)
25	Plant Acquisition Adjustment	352,468
26	Property Taxes	678,611
27	Payroll Taxes	24,915
28	Flowthrough Net Operating Income	498,382
29	Change In Interest Exp (Refer To Schedule RevReq 3-20 Page 2)	(615,281)
30	Total Expense Adjustments	<u>\$ 2,881,614</u>
31	Increase / (Decrease) In Taxable Income	\$ (1,420,835)
32	Effective Federal Income Tax Rate ⁽¹⁾	31.21%
33	NH State Tax Rate ⁽²⁾	8.20%
	<u>Federal Income & NH State Tax</u>	
34	Effective Federal Income Tax	\$ (443,471)
35	NH State Tax	<u>(116,508)</u>
36	Increase (Decrease) In Income Taxes	<u>\$ (559,979)</u>
	<u>Notes</u>	
37	Federal Income Tax Rate	34.00%
38	Federal Benefit of State Tax -(Line 37 * Line 40)	-2.79%
39	(1) Effective Federal Income Tax Rate	<u>31.21%</u>
40	(2) State Income Tax Rate	8.20%
41	Northern New Hampshire Tax Rate (Line 39 + Line 40)	<u>39.41%</u>

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

Schedule RevReq-3-20
Page 2 of 2

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
1	Ratemaking Interest Synchronization	
2	Rate Base ⁽¹⁾	\$ 131,491,801
3	Cost Of Debt In Proposed Rate Of Return ⁽²⁾	2.98%
4	Interest Expense for Ratemaking	\$ 3,918,456
5	Test Year Interest Expense	
6	Interest Charges (427-431)	\$ 4,533,737
7	Increase / (Decrease) in Interest Expense	\$ (615,281)

Notes

(1) Refer to Schedule RevReq-5

(2) Refer to Schedule RevReq-6

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

Schedule RevReq-4-1

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

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

Schedule RevReq-4-2

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

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

Schedule RevReq-4-3

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
	Mfg. Gas Produc. Plant:						
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	-
	Distribution Plant:						
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
	General Plant:						
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
	Non-Depreciable Plant:						
31	304.2 Land & Rights - Mfg Gas Prod. Pl	6,816	-	-	-	6,816	-
32	305.0 Structures	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	-
	Amortizable Plant:						
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

Schedule RevReq-4-4

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
	Mfg. Gas Produc. Plant:							
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
	Distribution Plant:							
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
	General Plant:							
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
	Amortizable Plant:							
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

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

Schedule RevReq-5

LINE NO.	DESCRIPTION	(1)	(2)	(3)	(4)
			RATE BASE AT DECEMBER 31, 2016	PRO FORMA ADJUSTMENTS	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	67,148,218
3	Net Utility Plant		143,996,975	914,467	144,911,442
4	Add: M&S Inventories		2,421,808	-	2,421,808
5	Cash Working Capital ⁽¹⁾		1,192,580	195,383	1,387,963
6	Sub-Total		3,614,388	195,383	3,809,771
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)	\$ 131,491,801

Notes

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

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

Schedule RevReq-5-1

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><u>\$ 132,013,284</u></u>	<u><u>\$ 119,574,602</u></u>	<u><u>\$ 118,895,246</u></u>	<u><u>\$ 119,487,505</u></u>	<u><u>\$ 119,339,100</u></u>	<u><u>\$ 121,861,949</u></u>

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

Schedule RevReq-5-2

	(1)	(2)	(3)	(4)	(5)
LINE NO.	DESCRIPTION	REFERENCE	TEST YEAR ACTUAL	PRO FORMA ADJUSTMENTS	TEST YEAR PRO FORMA
1	Distribution O&M Expense	Schedule RevReq-2	\$ 11,485,431	\$ 975,830	\$ 12,461,261
2	Tax Expense	Schedule RevReq-2	6,721,895	2,007,121	8,729,016
3	Total		\$ 18,207,326	\$ 2,982,951	\$ 21,190,277
4	Cash Working Capital Requirement:				
5	Other O&M Expense Days Lag (1) / 366	24 days	6.55%	6.55%	6.55%
6	Total Cash Working Capital	Line 5 X Line 3	\$ 1,192,580	\$ 195,383	\$ 1,387,963

Notes

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

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

Schedule RevReq-5-3

LINE NO.	(1) DESCRIPTION	(2) BALANCE 12/31/2016
	Plant In Service:	
	<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
	Depreciation Reserve	
	<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
	Supplemental Plant Adjustment	
34	NH Supplemental Plant Adjustment (Line 17 - Line 6)	\$ 2,193,573
35	ME Supplemental Plant Adjustment (Line 18 - Line 15)	\$ (2,193,573)
	Supplemental Depreciation Reserve Adjustment	
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

Schedule RevReq-5-4

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>

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

Schedule RevReq-6

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%	10.30%	5.32%	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%	6.16%	2.98%	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>8.30%</u>	

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

Schedule RevReq-6-1

LINE NO.	(1) DESCRIPTION	(2) AMOUNT	(3) PROFORMA ADJUSTMENT	(4) PROFORMA AMOUNT	(5) 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	11,983,729	-	11,983,729	
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 ⁽¹⁾	-	-	-	0.00%
9	Total	\$ 300,183,729	\$ -	\$ 300,183,729	100.0%

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**

Schedule RevReq-6-2

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

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

Schedule RevReq-6-3

NORTHERN UTILITIES, INC. DOES NOT HAVE PREFERRED STOCK OUTSTANDING

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

Schedule RevReq-6-4

	(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	UNAMORTIZED ISSUANCE COSTS	NET PROCEEDS OUTSTANDING	ANNUAL ISSUANCE COST	ANNUAL INTEREST COST	TOTAL ANNUAL COST	COST RATE BASED ON	
							[(5)-(7)/(5)]		(6)-(9)	Rate * (6)	(11)+(12)	NET PROCEEDS (13)/[(6)-(9)]		
1	6.95%	Sr. Notes	12/3/2008	10 Yrs	\$ 30,000,000	\$ 20,000,000	\$ 266,834	99.11%	\$ 51,188	\$ 19,948,812	\$ 26,707	\$ 1,390,000	\$ 1,416,707	7.10%
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	Total				\$ 155,000,000	\$ 145,000,000	\$ 1,554,580		\$ 933,597	\$ 144,066,403	\$ 94,112	\$ 8,782,500	\$ 8,876,612	6.16%

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

Schedule RevReq-6-5
Page 1 of 2

LINE NO.	(1) DESCRIPTION	(2) TOTAL
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

LINE NO.	(1) MONTH	(2) MONTH-END AMOUNT OUTSTANDING	(3) AVERAGE DAILY BORROWINGS	(4) MONTHLY SHORT-TERM INTEREST	(5) INTEREST RATE ⁽¹⁾
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).

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

Schedule RevReq-6-6

LINE NO.	(1) DESCRIPTION	(2)	(3)	(4)
		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)	36,977,214	17,820,632	12,710,517
5	Total	\$ 337,160,943	\$ 296,376,696	\$ 290,042,615

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

Schedule RevReq-6-7

LINE NO.	(1) DESCRIPTION	(2)	(3)	(4)
		2016	2015	2014
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%

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

Schedule RevReq-7

LINE NO.	(1) DESCRIPTION	(2) AMOUNT
1	Legal	\$ 100,000
2	Accounting Cost Of Service Study	66,000
3	Marginal Cost Study	17,000
4	Rate Design	26,000
5	Depreciation	51,000
6	Lead Lag	18,000
7	Return On Equity	85,000
8	Commission Costs	20,000
9	Miscellaneous	33,000
10	Total	<u>416,000</u>

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

	2015 Base	2015 Flowthru	Total	2016 Base	2016 Flowthru	Total
OPERATING REVENUES						
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
Total Sales	31,767,255	43,938,495	75,705,750	31,680,906	32,391,500	64,072,405
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)
Total Other Operating Revenues	975,468	(539,300)	436,168	979,079	(104,143)	874,936
TOTAL OPERATING REVENUES	32,742,723	43,399,195	76,141,918	32,659,985	32,287,357	64,947,341
OPERATING EXPENSES						
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
Total O & M Expenses	12,069,149	41,743,705	53,812,854	11,638,060	30,850,946	42,489,006
Other Operating Expenses:						
Depn. & 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
Total Other Operating Expenses	12,340,842	181,571	12,522,413	12,919,904	-	12,919,904
TOTAL OPERATING EXPENSES	24,409,990	41,925,276	66,335,267	24,557,964	30,850,946	55,408,910
NET UTILITY OPERATING INCOME	8,332,733	1,473,918	9,806,651	8,102,020	1,436,411	9,538,431
OTHER INCOME & DEDUCTIONS						
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)
Net Other Income (Deductions)	21,828	(27,697)	(5,868)	(94,103)	(18,319)	(112,422)
GROSS INCOME	8,354,561	1,446,222	9,800,783	8,007,917	1,418,093	9,426,010
Interest Charges (427 - 432)	4,546,659	2,335	4,548,994	4,645,691	1,842	4,647,533
NET INCOME	3,807,903	1,443,886	5,251,789	3,362,226	1,416,250	4,778,477

	Commodity Demand COG Peak	Commodity Demand COG 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
OPERATING REVENUES																	
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
Total Sales	23,048,556	3,132,472	15,734	2,585	121,726	7,439	4,045,368	614,575	1,458,217	(55,172)	-	-	32,391,500	31,680,906	64,072,405	30,373,880	2,017,620
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)	-
Total Other Operating Revenues	(103,524)	(619)	-	-	-	-	-	-	-	-	-	-	(104,143)	979,079	874,936	(104,143)	-
TOTAL OPERATING REVENUES	22,945,031	3,131,853	15,734	2,585	121,726	7,439	4,045,368	614,575	1,458,217	(55,172)	-	-	32,287,357	32,659,985	64,947,341	30,269,737	2,017,620
OPERATING EXPENSES																	
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
Total O & M Expenses	22,398,475	2,738,538	-	-	122,666	6,499	4,045,368	248,135	1,346,436	(55,172)	-	-	30,850,946	11,638,060	42,489,006	29,311,546	1,539,399
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	-	-
Total Other Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	12,919,904	12,919,904	-	-
TOTAL OPERATING EXPENSES	22,398,475	2,738,538	-	-	122,666	6,499	4,045,368	248,135	1,346,436	(55,172)	-	-	30,850,946	24,557,964	55,408,910	29,311,546	1,539,399
NET UTILITY OPERATING INCOME	546,556	393,316	15,734	2,585	(939)	939	-	366,440	111,781	-	-	-	1,436,411	8,102,020	9,538,431	958,190	478,221
OTHER INCOME & DEDUCTIONS																	
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)	-	-
Net Other Income (Deductions)	-	-	(15,846)	(2,472)	-	-	-	-	-	-	-	-	(18,319)	(94,103)	(112,422)	(18,319)	-
GROSS INCOME	546,556	393,316	(112)	112	(939)	939	-	366,440	111,781	-	-	-	1,418,093	8,007,917	9,426,010	939,872	478,221
Interest Charges (427 - 432)	1,842	-	-	-	-	-	-	-	-	-	-	-	1,842	4,645,691	4,647,533	1,842	-
NET INCOME	\$ 544,714	\$ 393,316	\$ (112)	\$ 112	\$ (939)	\$ 939	\$ -	\$ 366,440	\$ 111,781	\$ -	\$ -	\$ -	\$ 1,416,250	\$ 3,362,226	\$ 4,778,477	\$ 938,029	\$ 478,221

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

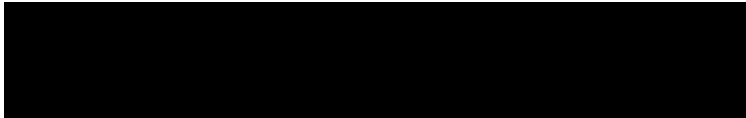
Workpaper - Cost of Gas

	(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	PRODUCTION	29,182,381	-	29,182,381
5	TRANSMISSION	-	-	-
6	DISTRIBUTION	-	-	-
7	CUSTOMER ACCOUNTING	129,165	-	129,165
8	CUSTOMER SERVICE	-	-	-
9	ADMINISTRATIVE & GENERAL	-	-	-
10	DEPRECIATION	-	-	-
11	AMORTIZATIONS	-	-	-
12	TAXES OTHER THAN INCOME	-	-	-
13	FEDERAL INCOME TAX	-	-	-
14	STATE INCOME TAX	-	-	-
15	DEFERRED FEDERAL & STATE INCOME TAXES	-	-	-
16	INTEREST ON CUSTOMER DEPOSITS	-	-	-
17	TOTAL OPERATING EXPENSES	29,311,546	-	29,311,546
18	NET OPERATING INCOME	958,190	938,029	20,161

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



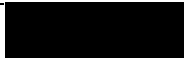
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2016
Meters	1	1	1	1	1	1	1	1	1	1	1	1	12
Customer Charge	A large black rectangular redaction box covering the entire data area of the table.												
Customer Charge Revenue													
Monthly Fixed Charge for First 200,000 Therms or Less													
Therms - First Step													
Consumption Charge - First Step													
Excess (1) - For Gas Use between 200,000 and 300,000 Therm													
Therms - Excess (1)													
Consumption Charge - Excess (1)													
Consumption Charge Revenue - Excess (1)													
Excess (2) - For Gas Use between 300,000 and 400,000 Therm													
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

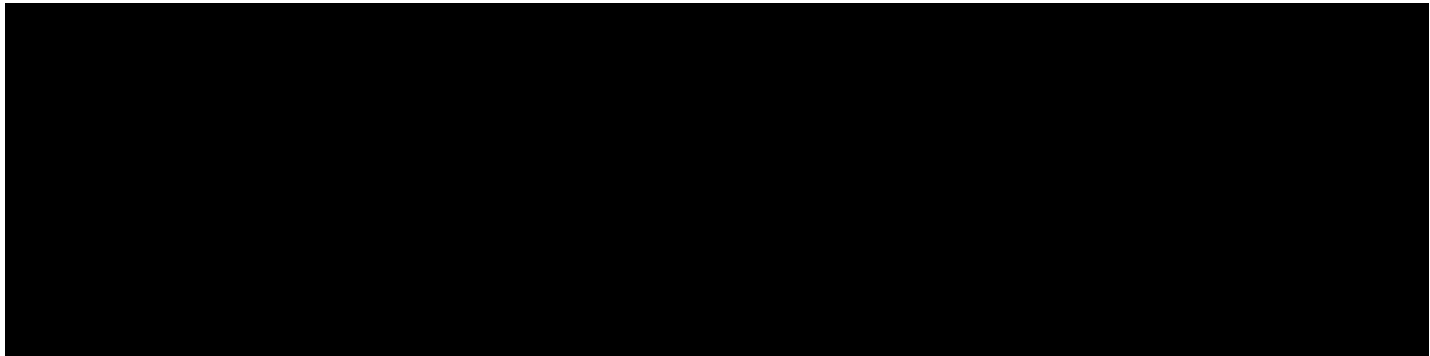
*Confidential Special Contract Rates
Effective December 1, 2017*

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 ⁽¹⁾	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⁽¹⁾
12 Months Ended December 31, 2016

Workpaper 2.2

LINE NO.	(1)	(2)
	DESCRIPTION	TOTAL
1	Union Weekly Payroll	\$ 2,950,566
	Nonunion	
2	Hourly	148,945
3	Salaried	729,409
4	Total Nonunion Payroll ⁽²⁾	<u>878,354</u>
5	Total Payroll ⁽³⁾	3,828,920
6	Payroll Capitalization ⁽³⁾	<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

Workpaper 2.3

(1)		(2)
LINE NO.	DESCRIPTION	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

Workpaper 2.4

LINE NO.	(1) DESCRIPTION	(2) TOTAL
	<u>Northern Utilities, Inc. Payroll:</u>	
	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)
	<u>USC Payroll, Allocated to Northern Utilities, Inc. - NH Division:</u>	
	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

Workpaper 3.1

Line No.	Coverage	Employee Census ⁽¹⁾			2017 Rates			- Cost -				
		- Medical -			- Medical ⁽²⁾ -			- Medical -		Total		
		CDHP	EPO	Dental	CDHP	EPO	Dental ⁽³⁾	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 ⁽⁴⁾							(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 ⁽⁵⁾							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 ⁽⁶⁾							(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 ⁽⁷⁾							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

NORTHERN UTILITIES, INC. - NEW HAMPSHIRE
MEDICAL AND DENTAL INSURANCE
CALCULATION OF 2016 MEDICAL AND DENTAL EXPENSE
FOR THE 12 MONTHS ENDED DECEMBER 31, 2015

Workpaper 3.2

Line No.	Coverage	Employee Census ⁽¹⁾			2016 Rates			- Cost -				
		- Medical -			- Medical ⁽²⁾ -			- Medical -		Total		
		CDHP	EPO	Dental	CDHP	EPO	Dental ⁽³⁾	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 ⁽⁴⁾							(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 ⁽⁶⁾							(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%

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

Workpaper 3.3

Line No.	Coverage	Employee Census ⁽¹⁾				2017 Rates				- Cost -					
		- Medical -		- Dental -		- Medical ⁽²⁾ -		- Dental ⁽³⁾ -		- Medical -		Total	- Dental -		Total
		CDHP	PPO	Premium	Standard	CDHP	PPO	Premium	Standard	CDHP	PPO	Medical	Premium	Standard	Dental
1	Individual	81	-	78	1	\$ 606.00	\$ 790.01	\$ 48.57	\$ 47.18	\$ 49,086	\$ -	\$ 49,086	\$ 3,788	\$ 47	\$ 3,836
2	Two Person	53	-	61	-	1,042.14	1,422.18	90.52	87.71	55,233	-	55,233	5,522	-	5,522
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
4	Total	202	2	229	4					200,517	3,922	204,439	23,891	514	24,405
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
6	Employee Contribution ⁽⁴⁾									(481,241)	(9,413)	(490,654)	(57,339)	(1,232)	(58,571)
7	Net Cost									1,924,963	37,654	1,962,617	229,354	4,930	234,284
8	Plus: Company Contribution to HSA									161,500	-	161,500	-	-	-
9	Payments to Employees to Opt out									113,559	3,138	116,696	-	-	-
10	Total HSA and Opt out Payments									275,059	3,138	278,196	-	-	-
11	Proformed 2017 Medical and Dental Cost									2,200,022	40,792	2,240,813	229,354	4,930	234,284
12	Projected Increase in Premium Rates Effective January 1, 2018 ⁽⁵⁾									142,697	2,855	145,552	4,587	99	4,686
13	Proformed 2017 and 2018 Medical and Dental Cost									2,342,718	43,647	2,386,365	233,941	5,028	238,970
14	Apportionment to Northern at 18.68%									437,620	8,153	445,773	43,700	939	44,640
15	Amount Chargeable to Capital at 31.64%									(138,463)	(2,580)	(141,043)	(13,827)	(297)	(14,124)
16	Total 2017 and 2018 Proformed Medical and Dental Insurance O&M Expense									299,157	5,574	304,730	29,874	642	30,516
17	Less 2016 O&M Medical and Dental Expense ⁽⁶⁾									302,485	5,883	308,368	28,641	614	29,255
18	2017 and 2018 O&M Medical and Dental Insurance Increase/(Decrease)									\$ (3,328)	\$ (309)	\$ (3,637)	\$ 1,233	\$ 28	\$ 1,261

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

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

Workpaper 3.4

Line No.	Coverage	Employee Census ⁽¹⁾				2016 Rates				- Cost -					
		- Medical -		- Dental -		- Medical ⁽²⁾ -		- Dental ⁽³⁾ -		- Medical -		Total	- Dental -		Total
		CDHP	PPO	Premium	Standard	CDHP	PPO	Premium	Standard	CDHP	PPO	Medical	Premium	Standard	Dental
1	Individual	81	-	78	1	\$ 632.62	\$ 854.73	\$ 48.12	\$ 46.62	\$ 51,242	\$ -	\$ 51,242	\$ 3,753	\$ 47	\$ 3,800
2	Two Person	53	-	61	-	1,131.36	1,590.10	89.63	86.76	59,962	-	59,962	5,467	-	5,467
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
4	Total	202	2	229	4					216,965	4,430	221,395	23,363	501	23,864
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
6	Employee Contribution ⁽⁴⁾									(520,715)	(10,632)	(531,347)	(56,072)	(1,202)	(57,274)
7	Net Cost									2,082,861	42,526	2,125,388	224,289	4,809	229,098
8	Plus: Company Contribution to HSA									161,500	-	161,500	-	-	-
9	Payments to Employees to Opt out									124,418	3,544	127,961	-	-	-
10	Total HSA and Opt out Payments									285,918	3,544	289,461	-	-	-
11	Total 2016 Medical & Dental Annual Cost									2,368,779	46,070	2,414,849	224,289	4,809	229,098
12	Apportionment to Northern at	18.68%								442,488	8,606	451,094	41,897	898	42,795
13	Amount Chargeable to Capital at	31.64%								(140,003)	(2,723)	(142,726)	(13,256)	(284)	(13,540)
14	Total 2016 Medical and Dental Insurance O&M Expense									\$ 302,485	\$ 5,883	\$ 308,368	\$ 28,641	\$ 614	\$ 29,255

Notes

(1) Insurance enrollments as of December 31, 2016.

(2) Medical and Dental Monthly Premiums Effective January 1, 2016.

(3) Employee Contributions: 20%

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

Workpaper 4.1

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	2016 TEST YEAR	2017 EXPENSE	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>

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

Workpaper 4.2

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	2016 TEST YEAR	2017 EXPENSE	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>\$ 613,939</u>	<u>\$ 764,156</u>	<u>\$ 150,217</u>

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

Workpaper 4.3

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	2016 TEST YEAR	2017 EXPENSE	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>

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

Workpaper 4.4

	(1)	(2)	(3)	(4)
LINE NO.	DESCRIPTION	2016 TEST YEAR	2017 & 2018 FORECAST EXPENSE	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 ⁽¹⁾	\$ 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 ⁽²⁾	\$ 150,327	\$ 155,047	\$ 4,720
2	NU-NH 401(k) Expense Adjusted for 2018 Wage Increase ⁽²⁾	-	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. 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 ⁽¹⁾	-	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

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

Workpaper 4.5

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

Notes

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

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

Workpaper 5.1

LINE NO.	DESCRIPTION	AMOUNT ⁽¹⁾
	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 5.2

LINE NO.	DESCRIPTION	UNITIL SERVICE CORP. TOTAL ⁽¹⁾	AMOUNT TO NuNH ⁽²⁾	NuNH TOTAL
	USC Cost For Current Coverage Periods			
	Property:			
1	All Risk	\$ 6,506		\$ 1,204
2	Crime	690		128
3	K&E	116		21
4	Total Property	<u>\$ 7,311</u>	18.51%	<u>\$ 1,353</u>
	Liability:			
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	<u>\$ 275,166</u>	18.51%	<u>\$ 50,933</u>
12	Total USC Property & Liability Insurances			52,287
13	Less Amount Chargeable to Capital		31.18%	<u>16,303</u>
14	Total Property & Liability Insurances to O&M Expense			<u>35,984</u>
15	Less Test Year O&M Expense ⁽³⁾			<u>18,080</u>
16	O&M Property and Liability Insurance Increase			<u>\$ 17,904</u>

Notes

(1) Refer to Workpaper 5.3

(2) Refer to Workpaper 4.1

(2) Refer to Workpaper 5.4

Casualty & Property Insurance

Workpaper 5.3

		CASUALTY											PROPERTY				TOTAL
		AL	NH-WC	XL*	XL	XL	Cyber	FL	D&O	D&O	D&O	CASUALTY	ARP	CRIME	K&E	TOTAL	
		(prem)	(prem)	(prem)	(brkr)	Surplus Tax	(prem)	(prem)	(prem)	Surplus Tax	(brkr)	TOTAL	(prem)	(prem)	(prem)	PROP	
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 ⁽¹⁾	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 ⁽¹⁾	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

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

Workpaper 5.4

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	\$ 141,929
4	NuNH Apportionment ⁽¹⁾	18.51%
5	NuNH Amount	\$ 26,271
6	Capitalization Rate ⁽¹⁾	31.18%
7	Capitalization Amount	\$ 8,191
8	O&M Expense Amount	18,080

Notes

(1) Refer to Workpaper 4.1

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

Workpaper 6.1

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
Macroeconomic																								
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	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.1	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
Weather																								
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
Macroeconomic																								
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	2.2	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
Weather																								
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.

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 ⁽¹⁾	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

Workpaper 6.3

LINE NO.	(1) DESCRIPTION	(2) 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	<u>\$ 1,935,500</u>
5	NuNH Allocation ⁽¹⁾	<u>18.51%</u>
6	Amount Billed to NuNH	<u><u>358,261</u></u>

Notes

(1) Refer to Workpaper 4.1

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

Workpaper 7.1

	(1)	(2)	(3)	(4)	(5)	(6)
LINE NO.	2016 TAXABLE WAGES SUBJECT TO PAY INCREASE ⁽¹⁾	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><u>\$ 9,287</u></u>

Notes

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

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

Workpaper 7.2

	(1)	(2)	(3)	(4)	(5)
LINE NO.	2016 TAXABLE WAGES SUBJECT TO PAY INCREASE ⁽¹⁾	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% ⁽²⁾				<u>365,038</u>
3	To NH Division at 46.23% ⁽²⁾				168,757
4	Less Amount Chargeable to Capital at 30.53% ⁽²⁾				<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