

BEFORE THE  
WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

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GENERAL RATE APPLICATION  
OF  
NORTHWEST NATURAL GAS COMPANY

December 31, 2018

**Direct Exhibit of Ronald J. Amen**

**COST OF SERVICE STUDY**

**Exh. RJA-2**

Northwest Natural Gas Company  
12 Months Ended September 30, 2018

Summary of Cost of Service Study Results

	ACCOUNT BALANCE	Schedule 1	Schedule 2	Schedule 3	Schedule 27	Schedule 41	Schedule 42
		General Sales Service	Residential Sales Service	Basic Firm Sales Service	Residential Heating Dry Out	Non-Residential Sales & Transport	Lg. Vol. Non-Res. Sales and Transport
<b>1 PLANT IN SERVICE</b>							
2 Intangible Plant	12,189,448	84,206	9,127,167	2,188,911	162,265	291,693	335,205
3 Production Plant	9,884,853	28,278	6,997,669	2,143,184	85,852	396,228	233,642
4 Storgae Plant	8,682,698	26,156	6,131,331	1,945,640	67,160	363,963	148,448
5 Transmission Plant	19,675,586	56,146	13,528,563	4,218,180	159,558	849,518	863,621
6 Distribution Plant	272,635,197	1,501,554	197,328,085	50,530,153	2,599,184	9,155,169	11,521,051
7 General Plant	24,138,283	127,387	17,422,897	4,551,222	225,360	828,630	982,787
8 Subtotal - Plant in Service	347,206,064	1,823,727	250,535,713	65,577,290	3,299,379	11,885,200	14,084,754
<b>9 ACCUMULATED DEPRECIATION</b>							
10 Intangible Plant	(7,140,269)	(58,022)	(5,489,270)	(1,233,299)	(114,974)	(116,854)	(127,851)
11 Production Plant	(5,249,415)	(15,017)	(3,716,157)	(1,138,152)	(45,592)	(210,419)	(124,077)
12 Storage Plant	(3,136,766)	(9,449)	(2,215,043)	(702,894)	(24,263)	(131,487)	(53,629)
13 Transmission Plant	(5,239,361)	(14,985)	(3,700,051)	(1,134,898)	(45,250)	(211,383)	(132,793)
14 Distribution Plant	(110,420,687)	(636,020)	(80,810,606)	(20,183,861)	(1,092,019)	(3,523,078)	(4,175,103)
15 General Plant	(5,714,597)	(31,037)	(4,137,249)	(1,070,641)	(53,065)	(193,309)	(229,297)
16 Subtotal - Accumulated Depreciation	(136,901,095)	(764,530)	(100,068,376)	(25,463,744)	(1,375,163)	(4,386,531)	(4,842,750)
<b>17 OTHER RATEBASE ITEMS</b>	(23,826,026)	(128,462)	(17,416,354)	(4,499,089)	(228,544)	(789,105)	(764,471)
<b>18 TOTAL RATEBASE</b>	186,478,943	930,734	133,050,982	35,614,457	1,695,672	6,709,564	8,477,533
<b>19 EXPENSES</b>							
20 Production Expenses	361,399	1,031	254,170	78,039	3,109	14,663	10,387
21 Storage Expenses	321,081	970	226,201	72,037	2,472	13,668	5,734
22 Transmission Expenses	155,022	442	106,590	33,235	1,257	6,693	6,804
23 Distribution Expenses	4,986,651	35,240	3,683,346	863,496	42,436	146,088	216,046
24 Demand Accounts Expense	2,389,851	25,309	2,099,257	181,979	23,724	28,263	31,319
25 Demand Service & Information Expense	646,080	5,951	495,800	71,356	5,038	20,133	47,803
26 Sales Expense	188,260	2,048	170,462	13,603	1,773	271	102
27 Administrative and General Expense	9,085,605	78,128	7,103,896	1,240,354	81,585	209,877	371,765
28 Depreciation and Amortization Expense	9,563,551	53,404	6,961,889	1,771,671	91,321	314,077	371,190
29 Taxes Other Than Income & Rev	5,171,841	29,647	3,778,789	936,739	48,698	168,967	209,001
30 Income and Revenue Taxes	1,074,020	7,188	808,296	174,494	10,753	31,371	41,918
31 Subtotal - Expenses	33,943,362	239,358	25,688,696	5,437,002	312,165	954,071	1,312,069
<b>32 REVENUE</b>							
33 Rate Schedule Revenue	41,397,485	205,673	27,765,814	8,598,555	195,261	1,969,924	2,662,258
34 Special Contract Revenue	239,628	1,341	180,971	56,043	1,273	-	-
35 Other Revenue	239,204	1,188	160,437	49,684	1,128	11,383	15,383
36 <b>TOTAL REVENUE</b>	41,876,318	208,202	28,107,223	8,704,282	197,662	1,981,307	2,677,641
<b>37 NET INCOME - Current Rates</b>	7,932,956	(31,156)	2,418,527	3,267,280	(114,503)	1,027,236	1,365,572
<b>38 RATE OF RETURN - Current Rates</b>	4.25%	-3.35%	1.82%	9.17%	-6.75%	15.31%	16.11%

Northwest Natural Gas Company  
12 Months Ended September 30, 2018

Summary of Cost of Service Study Results

		Schedule 1 General Sales Service	Schedule 2 Residential Sales Service	Schedule 3 Basic Firm Sales Service	Schedule 27 Residential Heating Dry Out	Schedule 41 Non-Residential Sales & Transport	Schedule 42 Lg. Vol. Non-Res. Sales and Transport
<b>REVENUE REQUIREMENT SUMMARY</b>	<b>ACCOUNT BALANCE</b>						
<b>39 REVENUE REQUIREMENT AT EQUAL RATES OF RETURN</b>							
40 <b>REQUIRED RATE OF RETURN</b>	7.6290%	7.6290%	7.6290%	7.6290%	7.6290%	7.6290%	7.6290%
41 <b>Required Operating Income</b>	14,226,464	71,006	10,150,449	2,717,024	129,363	511,872	646,750
<b>42 REVENUE GROSS UP</b>							
43 Federal Income Tax	1,672,958	21,158	1,601,295	-	50,505	-	-
44 Revenue Tax	336,804	4,260	322,377	-	10,168	-	-
45 Uncollectible	8,774	111	8,398	-	265	-	-
46 Subtotal - Revenue Gross Up	2,018,535	25,528	1,932,069	-	60,938	-	-
47 <b>TOTAL REVENUE REQUIREMENT [lines 31+41+46]</b>	50,188,361	335,892	37,771,215	8,154,027	502,465	1,465,943	1,958,820
48 <b>REVENUE EXCESS (DEFICIENCY) [line 36-line 47]</b>	(8,312,043)	(127,690)	(9,663,991)	550,256	(304,803)	515,363	718,822
<b>49 RATE SCHEDULE REVENUE AS PROPOSED</b>							
50 <b>Step 1</b>							
51 System Average Increase to Margin	20.08%						
52 Multiple of System Average Increase to Class		2.25	1.03	0.90	2.50	0.90	0.85
53 Percent Increase to Class Revenue		45.18%	20.73%	18.07%	50.20%	18.07%	17.07%
54 Increase Step 1	2,555,098	92,917		1,553,824	98,014	355,980	454,363
55 <b>Step 2</b>							
56 Remainder allocated on Current Revenue (ln 33)	27,765,814		27,765,814				
57 Increase Step 2	5,756,945		5,756,945				
58 <b>PROPOSED RATE REVENUE INCREASE</b>	8,312,043	92,917	5,756,945	1,553,824	98,014	355,980	454,363
59 Rate Schedule Revenue	49,709,529	298,590	33,522,760	10,152,378	293,275	2,325,904	3,116,621
60 Special Contract Revenue	239,628	1,341	180,971	56,043	1,273	-	-
61 Other Revenue	239,204	1,188	160,437	49,684	1,128	11,383	15,383
62 <b>PROPOSED REVENUE</b>	50,188,361	301,119	33,864,169	10,258,106	295,676	2,337,287	3,132,004
63 <b>CURRENT REVENUE TO COST RATIO</b>	0.83	0.62	0.74	1.07	0.39	1.35	1.37
64 <b>PARITY RATIO AT CURRENT RATES</b>	1.00	0.74	0.89	1.28	0.47	1.62	1.64
65 <b>PROPOSED REVENUE TO COST RATIO</b>	1.00	0.90	0.90	1.26	0.59	1.59	1.60