

Exh. JL-19r
Dockets UE-190529/UG-190530 and
UE-190274/UG-190275 (*consolidated*)
Witness: Jing Liu

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**DOCKETS UE-190529
and UG-190530 (*consolidated*)**

In the Matter of the Petition of

PUGET SOUND ENERGY

**For an Order Authorizing Deferral
Accounting and Ratemaking Treatment
for Short-life UT/Technology Investment**

**DOCKETS UE-190274 and
UG-190275 (*consolidated*)**

REVISED EXHIBIT TO TESTIMONY OF

Jing Liu

**STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

Staff's Attrition Analysis

November 22, 2019

Revised December 17, 2019

ELECTRIC ATTRITION

12 ME Dec 2018

12 ME April 2021

LINE NO.	Line Description	Attrition Base Year (SEF-9 page 1)					Escalation Factor	Trended Costs	Rate Year Revenue & Costs			
		Colstrip	AMI	GTZ	Escalation Base	AMI			GTZ	Costs		
		a	b	c	d	e = Σ a thru d			f	g	h	i
1	<u>Operating Revenues:</u>											
2	Sales to Customers	\$ 1,285,740,122				\$ 1,285,740,122		\$ 1,330,085,064			\$ 1,330,085,064	
3	Sales from Resale-Firm	328,327				328,327	1.18%	337,407			337,407	
4	Sales to Other Utilities	-				-		-			-	
5	Other Operating Revenues	52,105,314				52,105,314	1.18%	53,546,277			53,546,277	
6	Total Operating Revenues	1,338,173,763				1,338,173,763	1.45%	1,383,968,747			1,383,968,747	
7	<u>Operating Revenue Deductions:</u>											
8	<u>Power Costs:</u>											
9	Fuel	-				-		-			-	
10	Purchased and Interchanged	-				-		-			-	
11	Wheeling	-				-		-			-	
12	Residential Exchange	-				-		-			-	
13	Total Production Expenses	-				-		-			-	
14	Other Power Supply Expenses	\$ 127,132,038	\$ (18,854,857)			\$ 108,277,181	2.21%	\$ 113,932,289			\$ 113,932,289	
15	Transmission Expense	24,319,869				24,319,869	2.82%	25,950,653			25,950,653	
16	Distribution Expense	83,321,444				83,321,444	1.81%	86,884,045			86,884,045	
17	Customer Account Expenses	46,157,950				46,157,950	2.40%	48,788,520			48,788,520	
18	Customer Service Expenses	4,015,681				4,015,681	6.56%	4,657,269			4,657,269	
19	Conservation Amortization	-				-		-			-	
20	Admin & General Expense	124,099,544				124,099,544	3.02%	133,013,079			133,013,079	
21	Depreciation	340,799,040	(42,298,713)	(5,438,518)	-	293,061,809		393,536,729	in column g		393,536,729	
22	Amortization	69,623,675			(6,449,029)	63,174,646		77,443,987		in column g	77,443,987	
23	Amortiz Of Property Gain/Loss	43,150,399				43,150,399		43,150,399			43,150,399	
24	Other Operating Expenses	9,465,484				9,465,484	0.00%	9,465,484			9,465,484	
25	Asc 815	-				-		-			-	
26	Taxes Other Than F.I.T.	57,998,985				57,998,985	0.87%	59,181,844			59,181,844	
27	Federal Income Taxes	86,144,382				86,144,382		79,216,690			79,216,690	
28	Deferred Income Taxes	(51,808,801)				(51,808,801)		(57,622,759)			(57,622,759)	
29	Total Operating Rev. Deduct.	\$ 964,419,689	\$ (61,153,570)	\$ (5,438,518)	\$ (6,449,029)	\$ 891,378,572		\$ 1,017,598,229	\$ -	\$ -	\$ 1,017,598,229	
					O&M	\$ 390,191,669		\$ 413,225,855				
30	Net Operating Income	\$ 373,754,074				\$ 446,795,191		\$ 366,370,518			\$ 366,370,518	
		\$ -										
31	Rate Base	\$ 5,188,731,886				\$ 5,123,367,983		\$ 5,045,103,733			\$ 5,304,082,529	
32	Rate of Return	7.20%				8.72%		7.26%			6.91%	
33	Rate Base:											
34	Gross Utility Plant in Service	\$ 10,542,577,207	\$ -	\$ (43,086,547)	\$ (32,493,591)	\$ 10,466,997,068		\$ 11,194,604,244	\$ 170,075,026	\$ 162,226,501	\$ 11,526,905,772	
35	Accumulated Depreciation	(4,229,541,142)		2,800,433	2,801,053	(4,223,939,657)		(5,149,775,277)	(26,949,740)	(36,667,722)	(5,213,392,739)	
35	Non-plant DFIT	-		-	-	(22,089,626)		(22,089,626)	-	-	(22,089,626)	
36	Deferred Debits	273,426,197		-	-	273,426,197		273,426,197	-	-	273,426,197	
37	Deferred Taxes	(1,414,720,691)		2,798,356	1,816,393	(1,410,105,942)		(1,290,141,748)	(11,301,161)	1,595,891	(1,299,847,017)	
38	Allowance for Working Capital	145,303,205		-	-	145,303,205		145,303,205	-	-	145,303,205	
39	Other	(106,223,264)		-	-	(106,223,264)		(106,223,264)	-	-	(106,223,264)	
40	Total Rate Base	\$ 5,188,731,886	\$ -	\$ (37,487,758)	\$ (27,876,145)	\$ 5,123,367,983		\$ 5,045,103,733	\$ 131,824,126	\$ 127,154,670	\$ 5,304,082,529	
41	<u>Gross Plant</u>											
42	Total Production	\$ 4,219,025,238				\$ 4,219,025,238	0.14%	\$ 4,266,361,389			\$ 4,266,361,389	

ELECTRIC ATTRITION		12 ME Dec 2018						12 ME April 2021				
LINE NO.	Line Description	Attrition Base Year (SEF-9 page 1)				Escalation Base	Escalation Factor	Trended Costs		Rate Year Revenue & Costs		
		a	b	AMI c	GTZ d			e = $\sum a$ thru d	f	g	AMI h	GTZ i
43	Transmission	1,537,389,479				1,537,389,479	4.60%	1,699,727,076			1,699,727,076	
44	Distribution	3,905,799,409		(43,086,547)		3,862,712,861	3.08%	4,212,985,381	170,075,026		4,383,060,408	
45	Intangible Plant	364,692,121			(32,493,591)	332,198,531	5.90%	375,325,901		162,226,501	537,552,402	
46	General Plant	515,670,959				515,670,959	4.43%	640,204,497			640,204,497	
47	Total	\$ 10,542,577,207	\$ -	\$ (43,086,547)	\$ (32,493,591)	\$ 10,466,997,068		\$ 11,194,604,244	\$ 170,075,026	\$ 162,226,501	\$ 11,526,905,772	
								7%				
48	<u>Accumulated Depreciation</u>											
49	Total Production	\$ (1,966,448,759)				\$ (1,966,448,759)		\$ (2,300,521,624)			\$ (2,300,521,624)	
50	Transmission	(503,717,591)				(503,717,591)		(585,449,120)			(585,449,120)	
51	Distribution	(1,461,014,489)		2,800,433		(1,458,214,056)		(1,765,765,289)	(26,949,740)		(1,792,715,029)	
52	Intangible Plant	(115,975,412)			2,801,053	(113,174,360)		(241,423,276)		(36,667,722)	(278,090,998)	
53	General Plant	(182,384,891)				(182,384,891)		(256,615,968)			(256,615,968)	
54	Total	\$ (4,229,541,142)	\$ -	\$ 2,800,433	\$ 2,801,053	\$ (4,223,939,657)		\$ (5,149,775,277)	\$ (26,949,740)	\$ (36,667,722)	\$ (5,213,392,739)	
55	<u>Deferred Federal Income Taxes (w/o Bonus)</u>											
56	Total Production	\$ (270,203,768)				\$ (270,203,768)				\$ -	-	
57	Transmission	(77,896,905)				(77,896,905)					-	
58	Distribution	(361,910,120)		2,798,356		(359,111,764)					-	
59	Intangible Plant	(3,945,447)			1,816,393	(2,129,054)					-	
60	General Plant	(5,327,313)				(5,327,313)					-	
61	Total	\$ (719,283,554)	\$ -	\$ 2,798,356	\$ 1,816,393	\$ (714,668,804)		\$ -	\$ -	\$ -	\$ -	
62	<u>Bonus DFIT</u>											
63	Total Production	\$ (261,314,323)				\$ (261,314,323)				\$ -	-	
64	Transmission	(75,475,354)				(75,475,354)					-	
65	Distribution	(350,659,562)				(350,659,562)					-	
66	Intangible Plant	(2,826,192)				(2,826,192)					-	
67	General Plant	(5,161,706)				(5,161,706)					-	
68	Total	\$ (695,437,138)	\$ -	\$ -	\$ -	\$ (695,437,138)		\$ -	\$ -	\$ -	\$ -	
69	<u>Total DFIT</u>											
70	Total Production	\$ (531,518,092)	\$ -	\$ -	\$ -	\$ (531,518,092)		\$ (429,534,849)			\$ (429,534,849)	
71	Transmission	(153,372,259)				(153,372,259)		(154,848,090)			(154,848,090)	
72	Distribution	(712,569,682)		2,798,356		(709,771,326)		(625,978,773)	(11,301,161)		(637,279,933)	
73	Intangible Plant	(6,771,639)			1,816,393	(4,955,246)		(10,143,487)		1,595,891	(8,547,597)	
74	General Plant	(10,489,019)				(10,489,019)		(69,636,548)			(69,636,548)	
75	Total	\$ (1,414,720,691)	\$ -	\$ 2,798,356	\$ 1,816,393	\$ (1,410,105,942)		\$ (1,290,141,748)	\$ (11,301,161)	\$ 1,595,891	\$ (1,299,847,017)	
76	<u>Net Plant after Deferred Income Taxes</u>											
77	Total Production	\$ 1,721,058,388	\$ -	\$ -	\$ -	\$ 1,721,058,388		\$ 1,536,304,916	\$ -	\$ -	\$ 1,536,304,916	
78	Transmission	880,299,629				880,299,629		959,429,866			959,429,866	
79	Distribution	1,732,215,238		(37,487,758)		1,694,727,480		1,821,241,320	131,824,126		1,953,065,445	
80	Intangible Plant	241,945,070			(27,876,145)	214,068,925		123,759,137		127,154,670	250,913,808	
81	General Plant	322,797,049				322,797,049		313,951,980			313,951,980	
82	Total	\$ 4,898,315,373	\$ -	\$ (37,487,758)	\$ (27,876,145)	\$ 4,832,951,470		\$ 4,754,687,220	\$ 131,824,126	\$ 127,154,670	\$ 5,013,666,016	
83	Non-plant DFIT	\$ (22,089,626)				\$ (22,089,626)		\$ (22,089,626)			\$ (22,089,626)	
84	Deferred Debits	273,426,197				273,426,197		273,426,197			273,426,197	
84	Allowance for Working Capital	145,303,205				145,303,205		145,303,205			145,303,205	
85	Other	(106,223,264)				(106,223,264)		(106,223,264)			(106,223,264)	
86	Total Rate Base	\$ 5,188,731,886	\$ -	\$ (37,487,758)	\$ (27,876,145)	\$ 5,123,367,983		\$ 5,045,103,733	\$ 131,824,126	\$ 127,154,670	\$ 5,304,082,529	
87	Proposed Rate of Return										7.33%	
88	Return on Plant in Service at Proposed Rate									\$	388,789,249	
89	Operating Income Deficiency									\$	22,418,732	
90	Revenue Conversion Factor										0.751381	
91	Revenue Requirement									\$	29,836,703	
92	Revenue Growth Factor										1.0145	
93	Attrition Adjusted Revenue Requirement									\$	29,409,510	

GAS ATTRITION LINE NO.	12 ME Dec 2018					Escalation Factor	12 ME Apr 2021				
	Attrition Base Year (SEF-9 page 2)	CRM	AMI	GTZ	Escalation Base		Trended Costs	CRM	AMI	GTZ	Rate Year Revenue & Costs
	a	b	c	d	e = Σ a thru d		g	h	i	j	k = Σ g thru j
1	<u>Operating Revenues:</u>										
2	\$ 434,025,683				\$ 434,025,683		\$ 448,235,286				\$ 448,235,286
3	-				-		-				-
4	14,089,923				14,089,923	2.60%	14,959,559				14,959,559
5	\$ 448,115,606	\$ -	\$ -	\$ -	\$ 448,115,606	1.43%	\$ 463,194,845	\$ -	\$ -	\$ -	\$ 463,194,845
6	Operating Revenue Deductions:										
7	Gas Costs:										
8	\$ -				\$ -		\$ -				\$ -
9	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
10	\$ 6,059,691				\$ 6,059,691	5.59%	\$ 6,880,021				\$ 6,880,021
11	2,111				2,111		2,111				2,111
12	60,697,625				60,697,625	0.93%	62,023,320				62,023,320
13	28,150,071				28,150,071	0.78%	28,667,336				28,667,336
14	1,763,236				1,763,236	2.32%	1,859,968				1,859,968
15	-				-		-				-
16	59,028,745				59,028,745	2.02%	61,842,688				61,842,688
17	116,245,308	(2,616,180)	(2,455,596)	(3,294,178)	107,879,353		131,039,714		in column g		131,039,714
18	26,117,570				26,117,570		35,531,743			in column g	35,531,743
19	-				-		-				-
20	13,480,873				13,480,873	0.00%	13,480,873				13,480,873
21	24,101,717				24,101,717	3.15%	25,908,984				25,908,984
22	4,873,210				4,873,210		19,612,243				19,612,243
23	523,320				523,320		(18,704,039)				(18,704,039)
24	\$ 341,043,478	\$ (2,616,180)	\$ (2,455,596)	\$ (3,294,178)	\$ 332,677,524		\$ 368,144,962	\$ -	\$ -	\$ -	\$ 368,144,962
				O&M	\$ 155,701,480		\$ 161,275,444				
25	\$ 107,072,128	\$ 2,616,180	\$ 2,455,596	\$ 3,294,178	\$ 115,438,082		\$ 95,049,883				\$ 95,049,883
26	\$ 112,468,658										\$ 95,958,086
27	\$ 1,931,978,462	\$ (73,516,466)	\$ (13,642,851)	\$ (14,239,197)	\$ 1,830,579,947		\$ 1,956,326,442				\$ 2,161,170,845
28	Rate of Return	6.52%			6.52%		6.52%				6.52%
29	Rate Base:										
30	\$ 4,068,253,157	\$ (84,751,774)	\$ (16,228,881)	\$ (16,597,799)	\$ 3,950,674,702		\$ 4,403,024,972	\$ 105,802,468	\$ 66,784,661	\$ 82,865,660	\$ 4,658,477,761
31	(1,568,683,551)	3,209,723	1,296,178	1,430,784	(1,562,746,865)		(1,878,268,486)	(10,067,231)	(10,582,561)	(18,729,954)	(1,917,648,232)
32	(600,960,584)	8,025,585	1,289,852	927,818	(590,717,330)		(601,799,484)	(8,937,256)	(3,097,352)	805,968	(613,028,124)
33	(21,062,360)	-	-	-	(21,062,360)		(21,062,360)	-	-	-	(21,062,360)
34	\$ 1,877,546,662	\$ (73,516,466)	\$ (13,642,851)	\$ (14,239,197)	\$ 1,776,148,147		\$ 1,901,894,642	\$ 86,797,981	\$ 53,104,749	\$ 64,941,674	\$ 2,106,739,045
35	54,431,800	-	-	-	54,431,800		54,431,800	-	-	-	54,431,800
36	\$ 1,931,978,462	\$ (73,516,466)	\$ (13,642,851)	\$ (14,239,197)	\$ 1,830,579,947		\$ 1,956,326,442	\$ 86,797,981	\$ 53,104,749	\$ 64,941,674	\$ 2,161,170,845
	0										
37	Gross Plant										
38	\$ 76,474,409				\$ 76,474,409	1.45%	\$ 70,919,861				\$ 70,919,861
39	-				-		-				-
40	3,678,759,561	(84,751,774)	(16,228,881)		3,577,778,905	3.68%	3,973,682,292	105,802,468	66,784,661		4,146,269,422
41	139,418,656			(16,597,799)	122,820,858	8.34%	136,384,313			82,865,660	219,249,972
42	173,600,530				173,600,530	2.14%	222,038,506				222,038,506
43	\$ 4,068,253,157	\$ (84,751,774)	\$ (16,228,881)	\$ (16,597,799)	\$ 3,950,674,702		\$ 4,403,024,972	\$ 105,802,468	\$ 66,784,661	\$ 82,865,660	\$ 4,658,477,761
44	Accumulated Depreciation										
45	\$ (33,125,038)				\$ (33,125,038)		\$ (36,719,337)				\$ (36,719,337)
46	-				-		-				-

