

Exhibit No. ___ (YKGM-3)
Docket No. UE-050684
Witness: Yohannes K.G. Mariam

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFICORP, d/b/a Pacific Power &
Light Company,

Respondent.

DOCKET NO. UE-050684

EXHIBIT TO
TESTIMONY OF

YOHANNES K.G. MARIAM

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

RE: PACIFICORP GENERAL RATE CASE

Weather Normalization Adjustments

November 3, 2005

**Table 1: Statistical Estimation Results of Weather Sensitivity Coefficients Using
Autoregressive Procedure (Staff's Analytical Result)**

Scheduel 16	Sunny Side		Yakima		Walla Walla	
Variable	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Interecept	997.14	0.00	999.21	0.00	1052.65	0.00
Heating Degree Days	1.55	0.00	1.21	0.00	0.87	0.00
Cooling Degree Days	1.57	0.00	1.36	0.00	1.20	0.00
R-squared	0.93		0.94		0.95	
Durbin-Watson stat	1.713874		1.963462		1.978647	
Schedule 24						
Interecept	2998.51	0.00	2566.71	0.00	2310.07	0.00
Heating Degree Days	0.90	0.00	0.85	0.00	1.09	0.00
Cooling Degree Days	0.17	0.76	1.32	0.01	2.04	0.00
R-squared	0.63		0.60		0.77	
Durbin-Watson stat	1.94362		2.000792		1.99631	
Schedule 36						
Interecept	66519.13	0.00	76158.71	0.00	62409.61	0.00
Heating Degree Days	5.00	0.28	5.80	0.02	3.50	0.49
Cooling Degree Days	0.56	0.97	7.04	0.56	31.05	0.00
R-squared	0.59		0.80		0.50	
Durbin-Watson stat	1.940178		1.988708		2.028745	

Table 2: Average Difference Between Estimated & Actual Use per Customer (1995-2004)

	Rate Schedule	Average Difference (estimated less actual use per customer)	Estimated 95% Confidence (plus or minus from the mean)
Sunny Side	16	0.49%	± 5.08%
	24	0.59%	±1.59%
	36	0.38%	±2.06%
Walla Walla	16	0.18%	±4.17%
	24	0.28%	±1.75%
	36	0.41%	±1.22%
Yakima	16	0.35%	±4.92%
	24	0.44%	±1.47%
	36	0.36%	±1.88%
Average		0.39%	±2.68%

Table 3: Monthly Weather Sensitive Electricity Adjustment by Rate Schedule for Walla Walla

Variables	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Unbilled HDD	223	-196	-110	-17	61	-60	-79	-17	9	69	215	194	154
Unbilled CDD	86	0	0	0	4	27	113	103	-56	-42	-50	-13	0
Rate Group	Coefficients												
Schedule 16													
Number of Customers		21520	21557	21544	21524	21549	21521	21546	21534	21558	21805	21770	21559
Unbilled Sales	6503106	-3686981	-2072782	-217000	1843278	1784349	1167014	-1764347	-913115	10103	3758670	3691754	2902164
Usage/HDD	0.8741												
Usage/CDD	1.1969												
Schedule 24													
Number of Customers		3785	3782	3785	3790	3791	3787	3802	3782	3792	3754	3767	3779
Unbilled Sales	1575317	-810783	-454670	-39433	461454	625445	468880	-505047	-286892	-100888	782523	798693	636034
Usage/HDD	1.0929												
Usage/CDD	2.0403												
Schedule 36													
Number of Customers		155	157	156	156	157	157	157	154	153	154	155	156
Unbilled Sales	548316	-106428	-60501	10087	164137	517932	458726	-282378	-196003	-200581	53821	105342	84161
Usage/HDD	3.503												
Usage/CDD	31.054												
Total Electric Adjustment	8626739	-4604191	-2587953	-246346	2468869	2927725	2094620	-2551772	-1396010	-291366	4595014	4595788	3622358

**Table 4a: Summary of Unbilled Weather Sensitive Consumption for Walla Walla
Electric Weather Normalization For the Twelve Months ended March 31, 2003**

Washington- Weather Sensitive Electricity Consumption						
	Average No. of Customers	HDD- Coefficients	CDD- Coefficients	Unbilled HDD	Unbilled CDD	Unbilled Weather Sensitive
Schedule-16	21,574	0.874123	1.196917	223	86	6,426,050
Schedule-24	3,118	1.092905	2.040317	223	86	1,307,019
Schedule-36	141	3.503219	31.05416	223	86	486,714
Total						8,219,783

Table 4b: Test Year Unbilled Heating and Cooling Degree Days for Walla Walla

Calendar	Actual HDD	Actual CDD	1971-2000 Normal HDD	1971-2000 Normal CDD	Normal - Actual (HDD)	Normal - Actual (CDD)
Jan-04	1135	0	939	0	-196	0
Feb-04	819	0	709	0	-110	0
Mar-04	591	0	574	0	-17	0
Apr-04	312	0	373	4	61	4
May-04	251	2	191	29	-60	27
Jun-04	148	25	69	138	-79	113
Jul-04	26	226	9	329	-17	103
Aug-04	0	379	9	323	9	-56
Sep-04	30	173	99	131	69	-42
Oct-03	108	53	323	3	215	-50
Nov-03	465	13	659	0	194	-13
Dec-03	774	0	928	0	154	0
	4,659	871	4,882	957	223	86

Table 5: Monthly Weather Sensitive Electricity Adjustment by Rate Schedule for Sunnyside

	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Unbilled HDD	396	-75	-112	-66	-11	-63	-70	-11	21	87	290	256	150
Unbilled CDD	-157	0	0	0	1	18	44	9	-123	-80	-22	-4	0
Rate Group	Coefficients												
Schedule 16													
Number of Customers		16313	16154	16127	16145	16163	16208	16291	16267	16274	16921	16970	16942
Unbilled Sales	6718833	-1895832	-2803515	-1649310	-249870	-1121549	-639533	-47720	-2608821	151951	7019904	6625264	3937864
Usage/HDD	1.54955												
Usage/CDD	1.56842												
Schedule 24													
Number of Customers		3343	3343	3350	3348	3371	3391	3397	3402	3402	3348	3340	3341
Unbilled Sales	1095191	-224415	-335127	-197899	-32398	-179837	-187254	-28281	-6749	218936	856594	763060	448562
Usage/HDD	0.89507												
Usage/CDD	0.16895												
Schedule 36													
Number of Customers		185	185	186	185	186	186	186	180	179	179	184	185
Unbilled Sales	337019	-69442	-103700	-61439	-10082	-56781	-60603	-9307	6583	69962	257607	235338	138884
Usage/HDD	5.00484												
Usage/CDD	0.55713												
Total Electric Adjustment	8151044	-2189690	-3242342	-1908648	-292349	-1358167	-887391	-85308	-2608987	440850	8134105	7623662	4525310

Table 6a: Summary of Unbilled weather Sensitive Consumption for Sunnyside

Washington- Weather Sensitive Electricity Consumption						
	Average No. of Customers	HDD- Coefficients	CDD- Coefficient s	Unbilled HDD	Unbilled CDD	Unbilled Weather Sensitive
Schedule-16	16432.0	1.549547	1.568419	396	-157	6,036,769
Schedule-24	2481	0.895066	0.168946	396	-157	813,574
Schedule-36	169	5.004837	0.557127	396	-157	320,161
Total						7,170,504

Table 6b: Test Year Unbilled Heating and Cooling Degree Days for Sunnyside

Calendar	Actual HDD	Actual CDD	1971-2000 Normal HDD	1971-2000 Normal CDD	Normal - Actual (HDD)	Normal - Actual (CDD)
Jan-04	1172	0	1097	0	-75	0
Feb-04	933	0	821	0	-112	0
Mar-04	748	0	682	0	-66	0
Apr-04	485	0	474	1	-11	1
May-04	338	0	275	18	-63	18
Jun-04	182	21	112	65	-70	44
Jul-04	39	162	28	171	-11	9
Aug-04	9	271	30	148	21	-123
Sep-04	75	108	162	28	87	-80
Oct-03	203	22	493	0	290	-22
Nov-03	568	4	824	0	256	-4
Dec-03	956	0	1106	0	150	0
Total	5,708	588	6,104	431	396	-157

Table 7: Monthly Weather Sensitive Electricity Adjustment by Rate Schedule for Yakima

	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Unbilled HDD	396	-75	-112	-66	-11	-63	-70	-11	21	87	290	256	150
Unbilled CDD	-152	0	0	0	1	18	44	14	-123	-80	-22	-4	0
Rate Group	Coefficients												
Schedule 16													
Number of Customers	16108849	59602	59512	58874	58813	58764	58710	58871	58843	58905	59398	59747	59651
Unbilled Sales	20381067	-5130275	-7649642	-4459498	-697771	-3444761	-2752874	-116678	-4083748	2299262	18775800	17372267	10268985
Usage/HDD	1.1477												
Usage/CDD	0.7602												
Schedule 24													
Number of Customers		9633	9647	9651	9646	9650	9665	9698	9688	9678	9563	9591	9605
Unbilled Sales	2250174	-539240	-806436	-475418	-75460	-386499	-340290	-27047	-309582	328632	1988443	1817726	1075346
Usage/HDD	0.7464												
Usage/CDD	0.3872												
Schedule 36													
Number of Customers		636	635	634	631	631	631	632	628	626	636	634	634
Unbilled Sales	4220208	-875059	-1304701	-767631	-124785	-683403	-698180	-91803	-70005	796867	3327058	2967235	1744615
Usage/HDD	18.3451												
Usage/CDD	4.0384												
Total Electric Adjustment	26851450	-6544574	-9760778	-5702547	-898016	-4514664	-3791343	-235528	-4463335	3424762	24091300	22157228	13088946

Table 8a: Summary of Unbilled weather Sensitive Consumption for Yakima

Washington- Weather Sensitive Electricity Consumption						
	Average No. of Customers	HDD- Coefficients	CDD- Coefficients	Unbilled HDD	Unbilled CDD	Unbilled Weather Sensitive
Schedule-16	58730	1.20863	1.364586	396	-152	15,927,681
Schedule-24	7254	0.850691	1.321058	396	-152	987,086
Schedule-36	599	5.80347	7.04307	396	-152	735,472
Total						17,650,239

Table 8b: Test Year Unbilled Heating and Cooling Degree Days for Yakima

Calendar	Actual HDD	Actual CDD	1971-2000 Normal HDD	1971-2000 Normal CDD	Normal - Actual (HDD)	Normal - Actual (CDD)
Jan-04	1172	0	1097	0	-75	0
Feb-04	933	0	821	0	-112	0
Mar-04	748	0	682	0	-66	0
Apr-04	485	0	474	1	-11	1
May-04	338	0	275	18	-63	18
Jun-04	182	21	112	65	-70	44
Jul-04	39	157	28	171	-11	14
Aug-04	9	271	30	148	21	-123
Sep-04	75	108	162	28	87	-80
Oct-03	203	22	493	0	290	-22
Nov-03	568	4	824	0	256	-4
Dec-03	956	0	1106	0	150	0
Total	5,708	583	6,104	431	396	-152

Table 9a: Staff's Volume and Revenue Impacts of Temperature Normalization Adjustment

	Schedule 16		Schedule 24		Schedule 36		Total	Total
	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact		
Month	MWh	(\$000)	MWh	(\$000)	MWh	(\$000)	MWh	(\$000)
Oct-03	29,554	1566	3,628	190	3,638	126	36,820	1,882
Nov-03	27,689	1467	3,379	177	3,308	115	34,377	1,759
Dec-03	17,109	907	2,160	113	1,968	68	21,237	1,088
Jan-04	-10,713	-568	-1,574	-82	-1,051	-36	-13,338	-686
Feb-04	-12,526	-664	-1,596	-83	-1,469	-51	-15,591	-798
Mar-04	-6,326	-335	-713	-37	-819	-28	-7,858	-401
Apr-04	896	47	354	18	29	1	1,279	67
May-04	-2,782	-147	59	3	-222	-8	-2,945	-152
Jun-04	-2,225	-118	-59	-3	-300	-10	-2,584	-131
Jul-04	-1,929	-102	-560	-29	-383	-13	-2,873	-145
Aug-04	-7,606	-403	-603	-32	-259	-9	-8,468	-444
Sep-04	2,461	130	447	23	666	23	3,574	177
Total	33,603	1,781	4,921	257	5,106	177	43,629	2,215

Table 9b: PacifiCorp's Volume and Revenue Impacts of Temperature Normalization

	Schedule 16		Schedule 24		Schedule 36		Total	Total
	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact		
Months	MWh	(\$000)	MWh	(\$000)	MWh	(\$000)	MWh	(\$000)
Oct-03	-333	-18	-91	-5	-11	0	-435	-23
Nov-03	-20400	-1081	-1850	-97	-49	-2	-22,299	-1,179
Dec-03	930	49	89	5	3	0	1,022	54
Jan-04	-9057	-480	-859	-45	-27	-1	-9,943	-526
Feb-04	-5641	-299	-525	-27	-14	0	-6,180	-327
Mar-04	15523	823	1572	82	36	1	17,131	906
Apr-04	5699	302	575	30	-15	-1	6,259	332
May-04	-2405	-127	-427	-22	-23	-1	-2,855	-151
Jun-04	-5162	-274	-1383	-72	19	1	-6,526	-345
Jul-04	-9740	-516	-2601	-136	-16	-1	-12,357	-653
Aug-04	-11801	-625	-3147	-165	-22	-1	-14,970	-791
Sep-04	58	3	17	1	-3	0	72	4
Total	-42329	-2243	-8630	-451	-122	-4	(51,081)	(2,698)

Table 10: Comparison between Staff's and PacifiCorp's Adjustment

Months	Schedule 16		Schedule 24		Schedule 36		Total Residential		Total Commerical		Total Adjutment	
	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact	Energy Impact	Revenue Impact
Oct-03	29,887	\$1,584	3,719	\$194	3,649	\$127	29,887	\$1,584	7,368	\$321	37,255	\$1,905
Nov-03	48,089	\$2,548	5,229	\$273	3,357	\$116	48,089	\$2,548	8,586	\$390	56,676	\$2,938
Dec-03	16,179	\$857	2,071	\$108	1,965	\$68	16,179	\$857	4,036	\$176	20,215	\$1,034
Jan-04	(1,656)	(\$88)	(715)	(\$37)	(1,024)	(\$35)	(1,656)	(\$88)	(1,739)	(\$73)	(3,395)	(\$161)
Feb-04	(6,885)	(\$365)	(1,071)	(\$56)	(1,455)	(\$50)	(6,885)	(\$365)	(2,526)	(\$106)	(9,411)	(\$471)
Mar-04	(21,849)	(\$1,158)	(2,285)	(\$119)	(855)	(\$30)	(21,849)	(\$1,158)	(3,140)	(\$149)	(24,989)	(\$1,307)
Apr-04	(4,803)	(\$255)	(221)	(\$12)	44	\$2	(4,803)	(\$255)	(177)	(\$10)	(4,980)	(\$265)
May-04	(377)	(\$20)	486	\$25	(199)	(\$7)	(377)	(\$20)	287	\$19	(90)	(\$1)
Jun-04	2,937	\$156	1,324	\$69	(319)	(\$11)	2,937	\$156	1,005	\$58	3,942	\$214
Jul-04	7,811	\$414	2,041	\$107	(367)	(\$13)	7,811	\$414	1,673	\$94	9,484	\$508
Aug-04	4,195	\$222	2,544	\$133	(237)	(\$8)	4,195	\$222	2,306	\$125	6,502	\$347
Sep-04	2,403	\$127	430	\$22	669	\$23	2,403	\$127	1,099	\$46	3,502	\$173
Total	33,545	\$1,778	4,904	\$708	5,109	\$181	75,932	\$4,024	18,778	\$890	94,710	\$4,913