EXHIBIT NO. \_\_\_(CEP-12)
DOCKET NO. UG-040640, et al. (consolidated)
2004 PSE GENERAL RATE CASE
WITNESS: COLLEEN E. PAULSON

## BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

**PUGET SOUND ENERGY, INC.,** 

Respondent.

In the Matter of the Petition of

**PUGET SOUND ENERGY, INC.** 

For an Order Regarding the Accounting Treatment for Certain Costs of the Company's Power Cost Only Rate Filing.

In the Matter of the Petition of

PUGET SOUND ENERGY, INC.

For an Accounting Order Authorizing Deferral and Recovery of the Investment And Costs Related to the White River Hydroelectric Project. Docket No. UG-040640 Docket No. UE-040641 (consolidated)

Docket No. UE-031471 (consolidated)

Docket No. UE-032043 (consolidated)

FIRST EXHIBIT TO THE PREFILED REBUTTAL TESTIMONY OF COLLEEN E. PAULSON (NONCONFIDENTIAL) ON BEHALF OF PUGET SOUND ENERGY, INC.

**NOVEMBER 3, 2004** 

First Exhibit to the Prefiled Rebuttal Testimony of Colleen E. Paulson Puget Sound Energy Electric Cost of Service Derivation of Peak Credit

## Combined Cycle Plant (Nominal \$)

Year	Capital Cost \$/MWH Yr	Fixed O&M \$/MWH	Ins / Prop Ta \$/MWH	Variable O&M \$/MWH	Gas \$/MMBTU	Gas \$/MWH	Total \$/MWH	Annual Inflation
2004	\$12.09	\$5.70	\$1.20	\$2.00	\$4.17	\$28.77	\$49.76	0.00%
2005	\$12.09	\$5.84	\$1.23	\$2.05	\$4.77	\$32.94	\$54.15	2.50%
2006	\$12.09	\$5.99	\$1.26	\$2.10	\$4.94	\$34.07	\$55.51	2.50%
2007	\$12.09	\$6.14	\$1.29	\$2.15	\$4.86	\$33.52	\$55.19	2.50%
2008	\$12.09	\$6.29	\$1.32	\$2.20	\$4.85	\$33.49	\$55.39	2.50%
2009	\$12.09	\$6.45	\$1.35	\$2.26	\$3.89	\$26.82	\$48.97	2.50%
2010	\$12.09	\$6.61	\$1.38	\$2.32	\$3.82	\$26.34	\$48.74	2.50%
2011	\$12.09	\$6.78	\$1.41	\$2.38	\$4.86	\$33.55	\$56.21	2.50%
2012	\$12.09	\$6.95	\$1.45	\$2.44	\$5.49	\$37.90	\$60.83	2.50%
2013	\$12.09	\$7.12	\$1.49	\$2.50	\$5.80	\$40.00	\$63.20	2.50%
2014	\$12.09	\$7.30	\$1.53	\$2.56	\$6.25	\$43.15	\$66.63	2.50%
2015	\$12.09	\$7.48	\$1.57	\$2.62	\$6.05	\$41.77	\$65.53	2.50%
2016	\$12.09	\$7.67	\$1.61	\$2.69	\$5.63	\$38.81	\$62.87	2.50%
2017	\$12.09	\$7.86	\$1.65	\$2.76	\$6.23	\$43.00	\$67.36	2.50%
2018	\$12.09	\$8.06	\$1.69	\$2.83	\$6.26	\$43.22	\$67.89	2.50%
2019	\$12.09	\$8.26	\$1.73	\$2.90	\$6.52	\$45.01	\$69.99	2.50%
2020	\$12.09	\$8.47	\$1.77	\$2.97	\$6.57	\$45.32	\$70.62	2.50%
2021	\$12.09	\$8.68	\$1.81	\$3.04	\$6.78	\$46.76	\$72.38	2.50%
2022	\$12.09	\$8.90	\$1.86	\$3.12	\$6.94	\$47.88	\$73.85	2.50%
2023	\$12.09	\$9.12	\$1.91	\$3.20	\$7.10	\$49.02	\$75.34	2.50%
2024	\$12.09	\$9.35	\$1.96	\$3.28	\$7.27	\$50.19	\$76.87	2.50%
2025	\$12.09	\$9.58	\$2.01	\$3.36	\$7.45	\$51.40	\$78.44	2.50%
2026	\$12.09	\$9.82	\$2.06	\$3.44	\$7.63	\$52.63	\$80.04	2.50%
2027	\$12.09	\$10.07	\$2.11	\$3.53	\$7.81	\$53.89	\$81.69	2.50%
2028	\$12.09	\$10.32	\$2.16	\$3.62	\$8.00	\$55.18	\$83.37	2.50%
2029	\$12.09	\$10.58	\$2.21	\$3.71	\$8.15	\$56.24	\$84.83	2.50%
2030	\$12.09	\$10.84	\$2.27	\$3.80	\$8.31	\$57.33	\$86.33	2.50%
2031	\$12.09	\$11.11	\$2.33	\$3.90	\$8.47	\$58.43	\$87.86	2.50%
2032	\$12.09	\$11.39	\$2.39	\$4.00	\$8.63	\$59.56	\$89.43	2.50%
2033	\$ \$12.09	\$11.67	\$2.45	\$4.10	\$8.80	\$60.70	\$91.01	2.50%
								2.50%

Puget Sound Energy Electric Cost of Service Derivation of Peak Credit

## **Combustion Turbine**

Year	Capital Cost \$/kW Yr	Fixed O&M \$/kW Yr	Ins / Prop Ta \$/kW Yr	Variable O&M \$/kW Yr	Fuel Oil \$/MMBTU	Fuel Oil \$/kW Yr	Gas \$/kW Yr	Total \$/kW Yr	Peak Credit \$/kW Yr	Inflation
2004	\$55.92	\$19.21	\$5.56	\$0.40	\$6.90	\$4.03	\$12.06	\$97.18	\$86.85	0.00%
2005		\$19.69	\$5.70	\$0.41	\$6.50	\$3.80	\$13.86	\$99.39	\$88.99	2.50%
2006		\$20.18	\$5.84	\$0.42	\$4.85	\$2.84	\$14.35	\$99.55	\$89.09	2.50%
2007		\$20.68	\$5.99	\$0.43	\$4.86	\$2.84	\$14.11	\$99.98	\$89.44	2.50%
2008	\$55.92	\$21.20	\$6.14	\$0.44	\$4.87	\$2.85	\$14.10	\$100.65	\$90.04	2.50%
2009	\$55.92	\$21.73	\$6.29	\$0.45	\$4.87	\$2.85	\$11.22	\$98.46	\$87.78	2.50%
2010	\$55.92	\$22.27	\$6.45	\$0.46	\$4.87	\$2.85	\$11.01	\$98.95	\$88.20	2.50%
2011	\$55.92	\$22.83	\$6.61	\$0.47	\$4.91	\$2.87	\$14.13	\$102.83	\$92.00	2.50%
2012	\$55.92	\$23.40	\$6.78	\$0.48	\$4.95	\$2.89	\$16.01	\$105.48	\$94.57	2.50%
2013	\$55.92	\$23.99	\$6.95	\$0.49	\$4.99	\$2.92	\$16.91	\$107.18	\$96.19	2.50%
2014	\$55.92	\$24.59	\$7.12	\$0.50	\$5.02	\$2.94	\$18.28	\$109.34	\$98.27	2.50%
2015	\$55.92	\$25.20	\$7.30	\$0.51	\$5.04	\$2.95	\$17.68	\$109.56	\$98.41	2.50%
2016		\$25.83	\$7.48	\$0.52	\$5.09	\$2.98	\$16.40	\$109.13	\$97.89	2.50%
2017		\$26.48	\$7.67	\$0.53	\$5.13	\$3.00	\$18.21	\$111.81	\$100.48	2.50%
2018		\$27.14		\$0.54	\$5.17	\$3.02	\$18.31	\$112.79	\$101.37	2.50%
2019		\$27.82		\$0.55	\$5.20	\$3.04	\$19.08	\$114.47	\$102.96	2.50%
2020		\$28.52		\$0.56	\$5.23	\$3.06	\$19.21	\$115.53	\$103.92	2.50%
2021		\$29.23	\$8.47	\$0.57	\$5.33	\$3.12	\$19.84	\$117.15	\$105.44	2.50%
2022		\$29.96	\$8.68	\$0.58	\$5.44	\$3.18	\$20.32	\$118.64	\$106.83	2.50%
2023		\$30.71		\$0.59	\$5.55	\$3.25	\$20.82	\$120.18	\$108.27	2.50%
2024		\$31.48	\$9.12	\$0.60	\$5.66	\$3.31	\$21.32	\$121.75	\$109.74	2.50%
2025		\$32.27	\$9.35	\$0.62	\$5.77	\$3.38	\$21.84	\$123.38	\$111.25	2.50%
2026		\$33.08	\$9.58	\$0.64	\$5.89	\$3.44	\$22.37	\$125.04	\$112.80	2.50%
2027	•	\$33.91		\$0.66	\$6.00	\$3.51	\$22.92	\$126.74	\$114.39	2.50%
2028		\$34.76		\$0.68	\$6.12	\$3.58	\$23.48	\$128.49	\$116.02	2.50%
2029		\$35.63		\$0.70	\$6.25	\$3.65	\$23.94	\$130.16	\$117.58	2.50%
2030		\$36.52		\$0.72	\$6.37	\$3.73	\$24.41	\$131.87	\$119.16	2.50%
2031		\$37.43		\$0.74	\$6.50	\$3.80	\$24.88	\$133.62	\$120.78	2.50%
2032		\$38.37		\$0.76	\$6.63	\$3.88	\$25.37	\$135.41	\$122.44	2.50%
2033		\$39.33		\$0.78	\$6.76	\$3.96	\$25.87	\$137.24	\$124.15	2.50%

Puget Sound Energy Electric Cost of Service Derivation of Peak Credit

	Combustion	Peak	СС	Peak
	Turbine	CT	CT	Credit
Levelized Cost \$/mWh			66.44	
Levelized Cost \$/kW Yr	117.82	105.59	494.74	21%

## Assumptions

1 Fixed Charge Rate:	12.37%					
2 Hours/Year CT Peak Operation	200	Oil (hours):	50			
3 CCCT Capacity Factor:	85%					
4 Capital & Fixed O&M For CT Used For Peak Credit Cost %						
5 Fixed & variable O&M, gas, and fuel escalation rate beyond 2015:						
6 Natural Gas Fuel Cost Premium for CT	-		70%			

		Capital	Fixed O&M	Ins / Prop Tax	Var O&M	Heat Rate
		\$/kW	\$/kW/yr	\$/kW/yr	\$ / MWH	BTU/kWh
7 Combined Cycle Combustion Turbine Plant 8 Simple Cycle Combustion Turbine Plant		\$728	\$42.47	\$8.95	2.0	6,900
		\$452	\$19.21	\$5.56	2	11,700
9 Reserve margin	15%					