BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

In the matter of the investigation of the continued reasonableness of current size limitations for PURPA QF published rate eligibility (i.e. 1MW) and restrictions on contract length (i.e., 5 years).	) CASE NO. GNR-E-02-1)) Rebuttal Testimony and Exhibits of) Mark T. Widmer on Behalf of) PacifiCorp

PACIFICORP

August, 2002

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

In the matter of the investigation of the continued reasonableness of current size limitations for PURPA QF published rate eligibility (i.e. 1MW) and restrictions on contract length (i.e., 5 years).	) CASE NO. GNR-E-02-1)) Rebuttal Testimony of Mark T. Widmer

PACIFICORP

August, 2002

1 Q. Are you the same Mark Widmer that previously testified in these proceedings?

2 A. Yes.

3 **Purpose of Testimony**

4 Q. What is the purpose of your rebuttal testimony?

5 A. My rebuttal testimony addresses the proposal by Mr. Sterling on behalf of Idaho
6 Public Utility Commission Staff and Mr. Trippel on behalf of Independent Energy
7 Producers of Idaho to change the SAR methodology by eliminating the
8 consideration of a utility's first deficit year for the determination of avoided cost
9 rates. I address some data issues related to Mr. Sterling's SAR costs and his
10 proposed fuel escalation rates. I also discuss the Company's revised proposed
11 inputs, many of which are adopted from Staff and the Company's revised
12 proposed avoided cost rates.

13 **Elimination of First Deficit Year Analysis**

14 Q. Please explain how avoided costs are determined for periods prior to the first
15 deficit year under the currently approved avoided cost methodology.

16 A. Under the SAR methodology avoided costs are determined differently for periods
17 of energy surplus and periods of energy deficit. The determination of whether a
18 utility is surplus or deficit for a given period is based on a review of the utility's
19 forecast annual energy load and resource balance. As long as the load and
20 resource balance is positive on an annual basis, utilities are considered to be
21 energy surplus. During surplus periods, prices are based on estimated wholesale

1 market prices. The rationale for market-based pricing is that a new QF would not
2 allow a utility to displace resource investments during periods of energy surplus.

3 Q. Please explain Mr. Sterling's and Mr. Trippel's proposed methodology change
4 regarding the determination of avoided cost rates during an energy surplus period.

5 A. Mr. Sterling and Mr. Trippel propose to eliminate any consideration of utility load
6 and resource balances (*i.e.,* whether the utility is actually surplus or deficit) and
7 assume that all utilities are energy deficit for purposes of determining SAR
8 avoided cost rates, on the rationale that the determination of the first deficit year
9 is problematic.

10 Q. Do you agree with their recommendation?

11 A. No. Their proposal if adopted would result in a violation of the fundamental
12 policy behind PURPA requirements to purchase electricity from QFs. PURPA
13 requires that avoided cost rates be set so that ratepayer neutrality is maintained.
14 In other words, rates should be set so that if a utility buys QF power, customer
15 prices will not be impacted. Under their proposal, ratepayer neutrality would not
16 be maintained, because during surplus periods utilities will pay the fully
17 embedded cost of a CCCT instead of the market price, which will tend to be lower
18 than the cost of a CCCT. Mr. Sterling's and Mr. Trippel's proposal is analytically
19 flawed in that it ignores the reality that an energy surplus utility does not avoid
20 capacity additions based on new QF purchases.

21 Q. Is Mr. Sterling's and Mr. Trippel's first deficit year proposal consistent with
22 Order 29069?

A. No. The Order states that:

> "The scope of review will be limited to changes in the avoided cost rate calculation variables. Other questions, such as whether eligibility should be based on nameplate capacity as Idaho Power recommends, will not be the subject of reconsideration." (Order 29069 at 8.)

Accordingly, Mr. Sterling's and Mr. Trippel's proposal should be rejected as outside the scope of this proceeding because it would be a fundamental change in the methodology.

SAR CCCT Costs

Q. Do you have any comments regarding Mr. Sterling's proposed SAR plant cost, fixed O&M and heat rate?

A. Yes. The plant cost, fixed O&M and heat rate proposed by Mr. Sterling appear to be from an outdated draft Northwest Power Planning Council (NWPPC) report on Natural Gas Combined-cycle Gas Turbine Power Plants. If the Commission chooses to adopt Mr. Sterling's proposed source for the information (that is the draft NWPPC report), the information contained in the current draft, dated July 15, 2002 should be adopted. The current draft report uses a capital cost of $565/kW, a fixed O&M cost of $8.85/kW and a 7030 heat rate.

Q. Do you have any observations regarding Staff's proposed gas escalation rate?

A. Yes. Based on my review of the testimony presented by the parties in the case it appears that Staff's proposed 4.4% nominal gas escalation rate is outside the range of most expectations. For example, Mr. Peseau testified on behalf of Idaho Power Company that the NWPPC forecasts gas escalation to be .5% on a real basis (3.1% nominal) and the WEFA Group's long-term gas escalator is 2.62%

1 nominal. Mr. Trippel recommends a 3.1% forecast gas escalation rate and the
2 Company's forecast gas escalation rate is 1.97%. While the Company
3 understands Mr. Sterling's concerns about using a forecast that is updated
4 annually and is readily available at no cost, his proposed escalation rate appears to
5 be too high by all comparisons and therefore should not be adopted by the
6 Commission. The Company believes a forecast that is more representative of the
7 average of the forecasts adopted should be used.

8 Q. Has the Company revised its position regarding proposed gas escalation rates?

9 A. Yes. The Company now recommends that the NWPPC .5% real escalation rate
10 should be adopted. This forecast has the benefit of having gone through a review
11 by all of the parties that participate in the NWPPC regional forum and therefore,
12 is representative of the northwest gas market. The forecast is also consistent with
13 the majority of proposals presented by the parties in the case.

14 Q. Does the Company accept as reasonable certain other proposed inputs?

15 A. Yes. The Company does not dispute the following input variables as proposed by
16 Mr. Sterling on behalf of Staff: the $2.8 per MWh SAR variable O&M, the
17 $22.65 current year fuel cost, the 2.10% SAR escalation rate, the 2.70% O&M
18 escalation rate, and the 2.10% tilting rate. The Company is also willing to adopt
19 the SAR plant cost, base year of SAR cost, the SAR heat rate and the proposed
20 gas escalation from NWPPC's July 15, 2002 report, as well as Mr. Sterling's
21 proposed $55 per kW AFUDC adder to the NWPPC SAR plant cost.

1 Q. Have you calculated the impact of these proposed input changes to the proposed
2 avoided cost rates filed with your direct testimony?

3 A. Yes. The proposed input changes result in a 20-year levelized cost of $49.21 and
4 $43.17 per MWh for fueled and non-fueled projects. The Company's revised
5 proposed avoided cost rates for fueled and non-fueled projects are provided as
6 Exhibits 305 and 306, respectively.

7 Q. Does this conclude your rebuttal testimony in this case?

8 A. Yes.

Case No. GNR-E-02-1
Exhibit 305
Witness: Mark T. Widmer

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

PACIFICORP

Exhibit Accompanying Rebuttal Testimony of Mark T. Widmer

Avoided Cost Calculation Model
02-Aug-02
Fueled

August, 2002

AVOIDED COST CALCULATION MODEL
02-Aug-02
FUELED

DATA TYPE	DATA SOURCE	PCP DATA
FIRST DEFICIT YEAR:	Long Run L&R	2008
SURPLUS ENERGY COST (mil/kWh):	June 2002 Official Forecast	33.54
SURPLUS COST BASE YEAR:	June 2002 Official Forecast	2002
"SAR" PLANT LIFE (YEARS):	No Change	30
"SAR" PLANT COST ($/kW):	NWPPC Report/IPUC Staff	$632
BASE YEAR OF "SAR" COST:	NWPPC Report/IPUC Staff	2000
"SAR" CAPACITY FACTOR (%):	No Change	92%
UTLTY WT'D COST OF CAPITAL (%):	Oregon Order 01-787	8.620%
RATEPAYER DISCOUNT RATE (%):	Oregon Order 01-787	8.620%
"SAR" FIXED O&M ($/kW):	NWPPC Report/IPUC Staff	$8.10
"SAR" VARIABLE O&M (mil/kWh):	NWPPC Report/IPUC Staff	2.80
CURRENT YEAR FUEL COST (mil/kWh):	IPUC Staff	22.65
BASE YEAR, O&M EXPENSES:	NWPPC Report/IPUC Staff	2000
ESCALATION RATE; "SAR" (%):	NWPPC Report/IPUC Staff	2.00%
ESCALATION RATE; SURPLUS (%):	June 2002 Official Forecast	4.80%
ESCALATION RATE; O&M (%):	IPUC Staff	2.70%
ESCALATION RATE; FUEL (%):	NWPPC Report	3.10%
ADJUSTABLE PORTION (mil/kWh):	Calculated	22.65
CAPITAL CARRYING CHARGE (%):	Financial Analysis - Or Order	13.260%
LEVEL CARRYING COST (mil/kWh):	Calculated	11.94
"TILTING" RATE (%):	IPUC Staff	2.10%
TYPE OF RATES:		FUELED
CURRENT YEAR:		2002

FUELED

SURPLUS COST (m/kWh)	
YEAR	VALUE
2002	33.54
2003	35.15
2004	36.83
2005	38.60
2006	40.45
2007	42.40
2008	N/A
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	N/A
2017	N/A
2018	N/A
2019	N/A
2020	N/A
2021	N/A
2022	N/A
2023	N/A
2024	N/A
2025	N/A
2026	N/A
2027	N/A
2028	N/A
2029	N/A
2030	N/A
2031	N/A
2032	N/A
2033	N/A
2034	N/A
2035	N/A
2036	N/A

ANNUAL CARRYING CHARGES Plant on-line in the year shown		
YEAR	CARRYING CHARGE	TILTED CAPITAL
2000	10.40	N/A
2001	10.61	N/A
2002	10.82	N/A
2003	11.03	N/A
2004	11.26	N/A
2005	11.48	N/A
2006	11.71	N/A
2007	11.94	N/A
2008	12.18	9.81
2009	12.43	10.02
2010	12.68	10.23
2011	12.93	10.44
2012	13.19	10.66
2013	13.45	10.88
2014	13.72	11.11
2015	13.99	11.35
2016	14.27	11.58
2017	14.56	11.83
2018	14.85	12.08
2019	15.15	12.33
2020	15.45	12.59
2021	15.76	12.85
2022	16.08	13.12
2023	16.40	13.40
2024	16.73	13.68
2025	17.06	13.97
2026	17.40	14.26
2027	17.75	14.56
2028	18.10	14.87
2029	18.47	15.18
2030	18.84	15.50
2031	19.21	15.82
2032	19.60	16.15
2033	19.99	16.49
2034	20.39	16.84

ANNUAL OPERATION & MAINTENANCE COSTS (m/kWh)				
YEAR	FIXED	VARIABLE	TOTAL	FUEL
2000	1.01	2.80	3.81	N/A
2001	1.03	2.88	3.91	N/A
2002	1.06	2.95	4.01	22.65
2003	1.09	3.03	4.12	23.35
2004	1.12	3.11	4.23	24.08
2005	1.15	3.20	4.35	24.82
2006	1.18	3.29	4.46	25.59
2007	1.21	3.37	4.59	26.39
2008	1.24	3.47	4.71	27.20
2009	1.28	3.56	4.84	28.05
2010	1.31	3.65	4.97	28.92
2011	1.35	3.75	5.10	29.81
2012	1.38	3.85	5.24	30.74
2013	1.42	3.96	5.38	31.69
2014	1.46	4.07	5.53	32.67
2015	1.50	4.18	5.67	33.68
2016	1.54	4.29	5.83	34.73
2017	1.58	4.40	5.98	35.81
2018	1.62	4.52	6.15	36.92
2019	1.67	4.65	6.31	38.06
2020	1.71	4.77	6.48	39.24
2021	1.76	4.90	6.66	40.46
2022	1.81	5.03	6.84	41.71
2023	1.85	5.17	7.02	43.00
2024	1.90	5.31	7.21	44.34
2025	1.96	5.45	7.41	45.71
2026	2.01	5.60	7.61	47.13
2027	2.06	5.75	7.81	48.59
2028	2.12	5.90	8.02	50.09
2029	2.18	6.06	8.24	51.65
2030	2.24	6.23	8.46	53.25
2031	2.30	6.40	8.69	54.90
2032	2.36	6.57	8.93	56.60
2033	2.42	6.75	9.17	58.36
2034	2.49	6.93	9.41	60.17

NON-ADJUSTABLE PORTION TOTAL COSTS (Surplus rates before 1st deficit year)					
YEAR	TILTED CAPITAL	TOTAL O&M	FUEL	SURPLUS	TOTAL
2002	N/A	N/A	N/A	33.54	33.54
2003	N/A	N/A	N/A	35.15	35.15
2004	N/A	N/A	N/A	36.83	36.83
2005	N/A	N/A	N/A	38.60	38.60
2006	N/A	N/A	N/A	40.45	40.45
2007	N/A	N/A	N/A	42.40	42.40
2008	9.81	4.71	0.00	N/A	14.52
2009	10.02	4.84	0.00	N/A	14.85
2010	10.23	4.97	0.00	N/A	15.19
2011	10.44	5.10	0.00	N/A	15.54
2012	10.66	5.24	0.00	N/A	15.90
2013	10.88	5.38	0.00	N/A	16.26
2014	11.11	5.53	0.00	N/A	16.64
2015	11.35	5.67	0.00	N/A	17.02
2016	11.58	5.83	0.00	N/A	17.41
2017	11.83	5.98	0.00	N/A	17.81
2018	12.08	6.15	0.00	N/A	18.22
2019	12.33	6.31	0.00	N/A	18.64
2020	12.59	6.48	0.00	N/A	19.07
2021	12.85	6.66	0.00	N/A	19.51
2022	13.12	6.84	0.00	N/A	19.96
2023	13.40	7.02	0.00	N/A	20.42
2024	13.68	7.21	0.00	N/A	20.89
2025	13.97	7.41	0.00	N/A	21.37
2026	14.26	7.61	0.00	N/A	21.87
2027	14.56	7.81	0.00	N/A	22.37
2028	14.87	8.02	0.00	N/A	22.89
2029	15.18	8.24	0.00	N/A	23.42
2030	15.50	8.46	0.00	N/A	23.96
2031	15.82	8.69	0.00	N/A	24.51
2032	16.15	8.93	0.00	N/A	25.08
2033	16.49	9.17	0.00	N/A	25.66
2034	16.84	9.41	0.00	N/A	26.25
2035	0.00	0.00	0.00	N/A	0.00
2036	0.00	0.00	0.00	N/A	0.00

FUELED

CONTRACT LENGTH (YEARS)	AVOIDED COST PRESENT VALUES (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	32.18	33.72	35.34	37.04	38.82	40.68
2	31.05	32.54	34.10	35.74	37.45	12.83
3	29.95	31.39	32.90	34.48	11.81	12.08
4	28.90	30.29	31.74	10.87	11.12	11.38
5	27.89	29.22	10.01	10.24	10.47	10.71
6	26.90	9.21	9.43	9.64	9.86	10.09
7	8.48	8.68	8.88	9.08	9.29	9.50
8	7.99	8.17	8.36	8.55	8.75	8.95
9	7.52	7.70	7.87	8.05	8.24	8.43
10	7.09	7.25	7.41	7.59	7.76	7.94
11	6.67	6.83	6.98	7.14	7.31	7.48
12	6.28	6.43	6.58	6.73	6.88	7.04
13	5.92	6.05	6.19	6.34	6.48	6.63
14	5.57	5.70	5.83	5.97	6.11	6.25
15	5.25	5.37	5.49	5.62	5.75	5.88
16	4.94	5.06	5.17	5.29	5.42	5.54
17	4.66	4.76	4.87	4.99	5.10	5.22
18	4.39	4.49	4.59	4.70	4.80	4.92
19	4.13	4.23	4.32	4.42	4.53	4.63
20	3.89	3.98	4.07	4.17	4.26	4.36
21	3.66	3.75	3.84	3.92	4.01	4.11
22	3.45	3.53	3.61	3.70	3.78	3.87
23	3.25	3.33	3.40	3.48	3.56	3.64
24	3.06	3.13	3.20	3.28	3.35	3.43
25	2.88	2.95	3.02	3.09	3.16	3.23
26	2.72	2.78	2.84	2.91	2.98	3.05
27	2.56	2.62	2.68	2.74	2.80	2.87
28	2.41	2.47	2.52	2.58	2.64	2.70
29	2.27	2.32	2.38	2.43	2.49	0.00
30	2.14	2.19	2.24	2.29	0.00	0.00
31	2.01	2.06	2.11	0.00	0.00	0.00
32	1.90	1.94	0.00	0.00	0.00	0.00
33	1.79	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00

CONTRACT LENGTH (YEARS)	SUMMED AVOIDED COST PRESENT VALUES (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	32.18	33.72	35.34	37.04	38.82	40.68
2	63.23	66.26	69.44	72.77	76.27	53.50
3	93.18	97.65	102.34	107.25	88.07	65.58
4	122.08	127.94	134.08	118.12	99.19	76.96
5	149.97	157.16	144.09	128.36	109.67	87.67
6	176.87	166.38	153.52	138.00	119.53	97.76
7	185.35	175.06	162.39	147.08	128.82	107.26
8	193.34	183.23	170.75	155.63	137.57	116.21
9	200.87	190.92	178.62	163.69	145.81	124.64
10	207.95	198.17	186.04	171.27	153.57	132.58
11	214.62	205.00	193.02	178.42	160.87	140.05
12	220.91	211.43	199.60	185.14	167.76	147.10
13	226.83	217.48	205.79	191.48	174.24	153.73
14	232.40	223.18	211.63	197.45	180.34	159.97
15	237.65	228.56	217.12	203.07	186.09	165.86
16	242.60	233.61	222.30	208.36	191.51	171.40
17	247.25	238.38	227.17	213.35	196.61	176.62
18	251.64	242.87	231.76	218.05	201.42	181.53
19	255.77	247.09	236.08	222.47	205.94	186.16
20	259.66	251.07	240.16	226.64	210.20	190.52
21	263.33	254.82	243.99	230.56	214.22	194.63
22	266.78	258.35	247.60	234.26	218.00	198.50
23	270.03	261.68	251.01	237.74	221.56	202.14
24	273.09	264.81	254.21	241.02	224.92	205.57
25	275.97	267.76	257.23	244.10	228.08	208.81
26	278.69	270.54	260.07	247.01	231.05	211.85
27	281.25	273.16	262.75	249.75	233.86	214.72
28	283.66	275.62	265.28	252.34	236.50	217.42
29	285.93	277.95	267.65	254.77	238.98	217.42
30	288.07	280.13	269.89	257.06	238.98	217.42
31	290.08	282.19	272.00	257.06	238.98	217.42
32	291.98	284.14	272.00	257.06	238.98	217.42
33	293.77	284.14	272.00	257.06	238.98	217.42
34	293.77	284.14	272.00	257.06	238.98	217.42
35	293.77	284.14	272.00	257.06	238.98	217.42

FUELED

CONTRACT LENGTH (YEARS)	NON-ADJUSTABLE LEVELIZED AVOIDED COSTS (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	33.54	35.15	36.83	38.60	40.45	42.40
2	34.31	35.96	37.68	39.49	41.39	29.03
3	35.08	36.77	38.53	40.38	33.16	24.69
4	35.86	37.58	39.38	34.69	29.13	22.60
5	36.63	38.39	35.19	31.35	26.79	21.41
6	37.40	35.18	32.46	29.18	25.28	20.67
7	34.89	32.95	30.57	27.68	24.25	20.19
8	33.05	31.32	29.18	26.60	23.51	19.86
9	31.65	30.09	28.15	25.79	22.98	19.64
10	30.57	29.13	27.35	25.18	22.58	19.49
11	29.72	28.39	26.73	24.71	22.28	19.39
12	29.04	27.79	26.24	24.34	22.05	19.33
13	28.48	27.31	25.84	24.04	21.88	19.30
14	28.03	26.92	25.52	23.81	21.75	19.29
15	27.66	26.60	25.27	23.63	21.66	19.30
16	27.35	26.34	25.06	23.49	21.59	19.32
17	27.09	26.12	24.89	23.38	21.54	19.35
18	26.88	25.94	24.76	23.29	21.52	19.39
19	26.70	25.80	24.65	23.23	21.50	19.44
20	26.56	25.68	24.56	23.18	21.50	19.49
21	26.44	25.58	24.50	23.15	21.51	19.54
22	26.34	25.50	24.44	23.13	21.52	19.60
23	26.25	25.44	24.40	23.11	21.54	19.65
24	26.19	25.39	24.38	23.11	21.57	19.71
25	26.13	25.35	24.36	23.11	21.60	19.77
26	26.09	25.33	24.35	23.12	21.63	19.83
27	26.06	25.31	24.34	23.14	21.67	19.89
28	26.03	25.29	24.34	23.16	21.70	19.95
29	26.01	25.29	24.35	23.18	21.74	19.78
30	26.00	25.29	24.36	23.20	21.57	19.63
31	26.00	25.29	24.37	23.04	21.42	19.48
32	25.99	25.29	24.21	22.88	21.28	19.36
33	25.99	25.14	24.07	22.75	21.15	19.24
34	25.85	25.00	23.94	22.62	21.03	19.13
35	25.72	24.88	23.81	22.51	20.92	19.04

CONTRACT LENGTH (YEARS)	ADJUSTABLE PLUS NON-ADJUSTABLE COSTS (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	33.54	35.15	36.83	38.60	40.45	42.40
2	34.31	35.96	37.68	39.49	41.39	51.68
3	35.08	36.77	38.53	40.38	55.81	47.34
4	35.86	37.58	39.38	57.34	51.78	45.25
5	36.63	38.39	57.84	54.00	49.44	44.06
6	37.40	57.83	55.11	51.83	47.93	43.32
7	57.54	55.60	53.22	50.33	46.90	42.84
8	55.70	53.97	51.83	49.25	46.16	42.51
9	54.30	52.74	50.80	48.44	45.63	42.29
10	53.22	51.78	50.00	47.83	45.23	42.14
11	52.37	51.04	49.38	47.36	44.93	42.04
12	51.69	50.44	48.89	46.99	44.70	41.98
13	51.13	49.96	48.49	46.69	44.53	41.95
14	50.68	49.57	48.17	46.46	44.40	41.94
15	50.31	49.25	47.92	46.28	44.31	41.95
16	50.00	48.99	47.71	46.14	44.24	41.97
17	49.74	48.77	47.54	46.03	44.19	42.00
18	49.53	48.59	47.41	45.94	44.17	42.04
19	49.35	48.45	47.30	45.88	44.15	42.09
20	49.21	48.33	47.21	45.83	44.15	42.14
21	49.09	48.23	47.15	45.80	44.16	42.19
22	48.99	48.15	47.09	45.78	44.17	42.25
23	48.90	48.09	47.05	45.76	44.19	42.30
24	48.84	48.04	47.03	45.76	44.22	42.36
25	48.78	48.00	47.01	45.76	44.25	42.42
26	48.74	47.98	47.00	45.77	44.28	42.48
27	48.71	47.96	46.99	45.79	44.32	42.54
28	48.68	47.94	46.99	45.81	44.35	42.60
29	48.66	47.94	47.00	45.83	44.39	42.43
30	48.65	47.94	47.01	45.85	44.22	42.28
31	48.65	47.94	47.02	45.69	44.07	42.13
32	48.64	47.94	46.86	45.53	43.93	42.01
33	48.64	47.79	46.72	45.40	43.80	41.89
34	48.50	47.65	46.59	45.27	43.68	41.78
35	48.37	47.53	46.46	45.16	43.57	41.69

NON-LEVELIZED AVOIDED COST RATE (m/kWh) CONTRACT START YEAR	NON-ADJUSTABLE PLUS MOST RECENT ADJUSTABLE
2002	33.54
2003	35.15
2004	36.83
2005	38.60
2006	40.45
2007	42.40
2008	37.17
2009	37.50
2010	37.84
2011	38.19
2012	38.55
2013	38.91
2014	39.29
2015	39.67
2016	40.06
2017	40.46
2018	40.87
2019	41.29
2020	41.72
2021	42.16
2022	42.61
2023	43.07
2024	43.54
2025	44.02
2026	44.52
2027	45.02
2028	45.54
2029	46.07
2030	46.61
2031	47.16
2032	47.73
2033	48.31
2034	48.90
2035	22.65
2036	22.65

Case No. GNR-E-02-1
Exhibit 306
Witness: Mark T. Widmer

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

PACIFICORP

Exhibit Accompanying Rebuttal Testimony of Mark T. Widmer

Avoided Cost Calculation Model
02-Aug-02
Non-Fueled

August, 2002

AVOIDED COST CALCULATION MODEL
02-Aug-02
Non-Fueled

DATA TYPE	DATA SOURCE	PCP DATA
FIRST DEFICIT YEAR:	Long Run L&R	2008
SURPLUS ENERGY COST (mil/kWh):	June 2002 Official Forecast	33.54
SURPLUS COST BASE YEAR:	June 2002 Official Forecast	2002
"SAR" PLANT LIFE (YEARS):	No Change	30
"SAR" PLANT COST ($/kW):	NWPPC Report/IPUC Staff	$632
BASE YEAR OF "SAR" COST:	NWPPC Report/IPUC Staff	2000
"SAR" CAPACITY FACTOR (%):	No Change	92%
UTLTY WT'D COST OF CAPITAL (%):	Oregon Order 01-787	8.620%
RATEPAYER DISCOUNT RATE (%):	Oregon Order 01-787	8.620%
"SAR" FIXED O&M ($/kW):	NWPPC Report/IPUC Staff	$8.10
"SAR" VARIABLE O&M (mil/kWh):	NWPPC Report/IPUC Staff	2.80
CURRENT YEAR FUEL COST (mil/kWh):	IPUC Staff	22.65
BASE YEAR, O&M EXPENSES:	NWPPC Report/IPUC Staff	2000
ESCALATION RATE; "SAR" (%):	NWPPC Report/IPUC Staff	2.10%
ESCALATION RATE; SURPLUS (%):	June 2002 Official Forecast	4.80%
ESCALATION RATE; O&M (%):	IPUC Staff	2.70%
ESCALATION RATE; FUEL (%):	NWPPC Report	3.10%
ADJUSTABLE PORTION (mil/kWh):	Calculated	0.00
CAPITAL CARRYING CHARGE (%):	Financial Analysis - Or Order	13.260%
LEVEL CARRYING COST (mil/kWh):	Calculated	12.03
"TILTING" RATE (%):	IPUC Staff	2.10%
TYPE OF RATES:		Non-Fueled
CURRENT YEAR:		2002

Non-Fueled

SURPLUS COST (m/kWh)	
YEAR	VALUE
2002	33.54
2003	35.15
2004	36.83
2005	38.60
2006	40.45
2007	42.40
2008	N/A
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	N/A
2017	N/A
2018	N/A
2019	N/A
2020	N/A
2021	N/A
2022	N/A
2023	N/A
2024	N/A
2025	N/A
2026	N/A
2027	N/A
2028	N/A
2029	N/A
2030	N/A
2031	N/A
2032	N/A
2033	N/A
2034	N/A
2035	N/A
2036	N/A

ANNUAL CARRYING CHARGES Plant on-line in the year shown		
YEAR	CARRYING CHARGE	TILTED CAPITAL
2000	10.40	N/A
2001	10.62	N/A
2002	10.84	N/A
2003	11.07	N/A
2004	11.30	N/A
2005	11.54	N/A
2006	11.78	N/A
2007	12.03	N/A
2008	12.28	9.88
2009	12.54	10.09
2010	12.80	10.30
2011	13.07	10.51
2012	13.34	10.73
2013	13.62	10.96
2014	13.91	11.19
2015	14.20	11.42
2016	14.50	11.66
2017	14.80	11.91
2018	15.12	12.16
2019	15.43	12.41
2020	15.76	12.68
2021	16.09	12.94
2022	16.43	13.21
2023	16.77	13.49
2024	17.12	13.77
2025	17.48	14.06
2026	17.85	14.36
2027	18.22	14.66
2028	18.61	14.97
2029	19.00	15.28
2030	19.40	15.60
2031	19.80	15.93
2032	20.22	16.27
2033	20.65	16.61
2034	21.08	16.96

ANNUAL OPERATION & MAINTENANCE COSTS (m/kwh)				
YEAR	FIXED	VARIABLE	TOTAL	FUEL
2000	1.01	2.80	3.81	N/A
2001	1.03	2.88	3.91	N/A
2002	1.06	2.95	4.01	22.65
2003	1.09	3.03	4.12	23.35
2004	1.12	3.11	4.23	24.08
2005	1.15	3.20	4.35	24.82
2006	1.18	3.29	4.46	25.59
2007	1.21	3.37	4.59	26.39
2008	1.24	3.47	4.71	27.20
2009	1.28	3.56	4.84	28.05
2010	1.31	3.65	4.97	28.92
2011	1.35	3.75	5.10	29.81
2012	1.38	3.85	5.24	30.74
2013	1.42	3.96	5.38	31.69
2014	1.46	4.07	5.53	32.67
2015	1.50	4.18	5.67	33.68
2016	1.54	4.29	5.83	34.73
2017	1.58	4.40	5.98	35.81
2018	1.62	4.52	6.15	36.92
2019	1.67	4.65	6.31	38.06
2020	1.71	4.77	6.48	39.24
2021	1.76	4.90	6.66	40.46
2022	1.81	5.03	6.84	41.71
2023	1.85	5.17	7.02	43.00
2024	1.90	5.31	7.21	44.34
2025	1.96	5.45	7.41	45.71
2026	2.01	5.60	7.61	47.13
2027	2.06	5.75	7.81	48.59
2028	2.12	5.90	8.02	50.09
2029	2.18	6.06	8.24	51.65
2030	2.24	6.23	8.46	53.25
2031	2.30	6.40	8.69	54.90
2032	2.36	6.57	8.93	56.60
2033	2.42	6.75	9.17	58.36
2034	2.49	6.93	9.41	60.17

NON-ADJUSTABLE PORTION TOTAL COSTS (Surplus rates before 1st deficit year)					
YEAR	TILTED CAPITAL	TOTAL O&M	FUEL	SURPLUS	TOTAL
2002	N/A	N/A	N/A	33.54	33.54
2003	N/A	N/A	N/A	35.15	35.15
2004	N/A	N/A	N/A	36.83	36.83
2005	N/A	N/A	N/A	38.60	38.60
2006	N/A	N/A	N/A	40.45	40.45
2007	N/A	N/A	N/A	42.40	42.40
2008	9.88	4.71	27.20	N/A	41.79
2009	10.09	4.84	28.05	N/A	42.97
2010	10.30	4.97	28.92	N/A	44.18
2011	10.51	5.10	29.81	N/A	45.43
2012	10.73	5.24	30.74	N/A	46.71
2013	10.96	5.38	31.69	N/A	48.03
2014	11.19	5.53	32.67	N/A	49.39
2015	11.42	5.67	33.68	N/A	50.78
2016	11.66	5.83	34.73	N/A	52.22
2017	11.91	5.98	35.81	N/A	53.70
2018	12.16	6.15	36.92	N/A	55.22
2019	12.41	6.31	38.06	N/A	56.79
2020	12.68	6.48	39.24	N/A	58.40
2021	12.94	6.66	40.46	N/A	60.06
2022	13.21	6.84	41.71	N/A	61.76
2023	13.49	7.02	43.00	N/A	63.52
2024	13.77	7.21	44.34	N/A	65.32
2025	14.06	7.41	45.71	N/A	67.18
2026	14.36	7.61	47.13	N/A	69.09
2027	14.66	7.81	48.59	N/A	71.06
2028	14.97	8.02	50.09	N/A	73.09
2029	15.28	8.24	51.65	N/A	75.17
2030	15.60	8.46	53.25	N/A	77.31
2031	15.93	8.69	54.90	N/A	79.52
2032	16.27	8.93	56.60	N/A	81.79
2033	16.61	9.17	58.36	N/A	84.13
2034	16.96	9.41	60.17	N/A	86.53
2035	0.00	0.00	0.00	N/A	0.00
2036	0.00	0.00	0.00	N/A	0.00

Non-Fueled

CONTRACT LENGTH (YEARS)	AVOIDED COST PRESENT VALUES (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	32.18	33.72	35.34	37.04	38.82	40.68
2	31.05	32.54	34.10	35.74	37.45	36.92
3	29.95	31.39	32.90	34.48	33.99	34.94
4	28.90	30.29	31.74	31.29	32.17	33.08
5	27.89	29.22	28.81	29.62	30.45	31.31
6	26.90	26.52	27.27	28.04	28.83	29.64
7	24.41	25.10	25.81	26.54	27.29	28.06
8	23.11	23.76	24.43	25.12	25.83	26.56
9	21.88	22.49	23.13	23.78	24.46	25.15
10	20.71	21.29	21.90	22.51	23.15	23.81
11	19.60	20.16	20.73	21.31	21.92	22.54
12	18.56	19.08	19.62	20.18	20.75	21.34
13	17.57	18.07	18.58	19.10	19.64	20.20
14	16.63	17.10	17.59	18.09	18.60	19.13
15	15.75	16.19	16.65	17.12	17.61	18.11
16	14.91	15.33	15.76	16.21	16.67	17.14
17	14.11	14.51	14.92	15.35	15.78	16.23
18	13.36	13.74	14.13	14.53	14.94	15.37
19	12.65	13.01	13.38	13.76	14.15	14.55
20	11.98	12.32	12.67	13.03	13.40	13.78
21	11.34	11.66	11.99	12.33	12.68	13.05
22	10.74	11.04	11.35	11.68	12.01	12.35
23	10.16	10.45	10.75	11.06	11.37	11.70
24	9.62	9.90	10.18	10.47	10.77	11.08
25	9.11	9.37	9.64	9.91	10.20	10.49
26	8.63	8.87	9.13	9.39	9.66	9.93
27	8.17	8.40	8.64	8.89	9.14	9.40
28	7.74	7.96	8.18	8.42	8.66	8.91
29	7.33	7.53	7.75	7.97	8.20	0.00
30	6.94	7.13	7.34	7.55	0.00	0.00
31	6.57	6.76	6.95	0.00	0.00	0.00
32	6.22	6.40	0.00	0.00	0.00	0.00
33	5.89	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00

CONTRACT LENGTH (YEARS)	SUMMED AVOIDED COST PRESENT VALUES (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	32.18	33.72	35.34	37.04	38.82	40.68
2	63.23	66.26	69.44	72.77	76.27	77.59
3	93.18	97.65	102.34	107.25	110.25	112.54
4	122.08	127.94	134.08	138.54	142.42	145.62
5	149.97	157.16	162.89	168.16	172.88	176.93
6	176.87	183.68	190.16	196.19	201.70	206.57
7	201.29	208.79	215.97	222.73	228.99	234.63
8	224.40	232.55	240.40	247.86	254.82	261.19
9	246.27	255.04	263.53	271.64	279.28	286.34
10	266.98	276.34	285.42	294.15	302.43	310.15
11	286.59	296.50	306.15	315.47	324.35	332.68
12	305.15	315.58	325.78	335.65	345.10	354.02
13	322.71	333.64	344.35	354.75	364.74	374.22
14	339.35	350.75	361.94	372.83	383.34	393.35
15	355.09	366.94	378.59	389.96	400.95	411.46
16	370.00	382.27	394.35	406.17	417.62	428.60
17	384.11	396.78	409.28	421.52	433.40	444.83
18	397.47	410.52	423.41	436.05	448.35	460.20
19	410.12	423.53	436.78	449.80	462.50	474.75
20	422.10	435.84	449.45	462.83	475.89	488.53
21	433.43	447.50	461.44	475.16	488.58	501.58
22	444.17	458.55	472.80	486.84	500.59	513.93
23	454.33	469.00	483.55	497.90	511.96	525.63
24	463.96	478.90	493.73	508.37	522.73	536.70
25	473.07	488.27	503.37	518.28	532.93	547.19
26	481.70	497.14	512.50	527.67	542.58	557.12
27	489.87	505.55	521.14	536.56	551.73	566.53
28	497.61	513.50	529.32	544.98	560.38	575.43
29	504.93	521.04	537.07	552.95	568.58	575.43
30	511.87	528.17	544.41	560.50	568.58	575.43
31	518.44	534.93	551.36	560.50	568.58	575.43
32	524.66	541.33	551.36	560.50	568.58	575.43
33	530.55	541.33	551.36	560.50	568.58	575.43
34	530.55	541.33	551.36	560.50	568.58	575.43
35	530.55	541.33	551.36	560.50	568.58	575.43

Non-Fueled

CONTRACT LENGTH (YEARS)	NON-ADJUSTABLE LEVELIZED AVOIDED COSTS (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	33.54	35.15	36.83	38.60	40.45	42.40
2	34.31	35.96	37.68	39.49	41.39	42.11
3	35.08	36.77	38.53	40.38	41.51	42.37
4	35.86	37.58	39.38	40.69	41.83	42.77
5	36.63	38.39	39.79	41.07	42.23	43.22
6	37.40	38.84	40.21	41.49	42.65	43.68
7	37.89	39.30	40.65	41.92	43.10	44.16
8	38.35	39.75	41.09	42.36	43.55	44.64
9	38.81	40.19	41.53	42.80	44.01	45.12
10	39.25	40.63	41.96	43.25	44.46	45.60
11	39.68	41.06	42.39	43.68	44.91	46.07
12	40.11	41.48	42.82	44.12	45.36	46.53
13	40.52	41.90	43.24	44.55	45.80	46.99
14	40.93	42.30	43.65	44.97	46.23	47.44
15	41.32	42.70	44.06	45.38	46.66	47.88
16	41.71	43.10	44.46	45.79	47.08	48.32
17	42.09	43.48	44.85	46.19	47.49	48.74
18	42.46	43.85	45.23	46.58	47.89	49.16
19	42.82	44.22	45.60	46.96	48.29	49.57
20	43.17	44.58	45.97	47.34	48.67	49.97
21	43.51	44.93	46.33	47.70	49.05	50.36
22	43.85	45.27	46.67	48.06	49.42	50.73
23	44.17	45.60	47.01	48.41	49.78	51.10
24	44.49	45.92	47.34	48.75	50.12	51.46
25	44.80	46.24	47.66	49.08	50.46	51.81
26	45.09	46.54	47.98	49.40	50.79	52.16
27	45.38	46.84	48.28	49.71	51.12	52.49
28	45.67	47.12	48.58	50.01	51.43	52.81
29	45.94	47.40	48.86	50.31	51.73	52.35
30	46.20	47.67	49.14	50.59	51.32	51.94
31	46.46	47.94	49.41	50.23	50.95	51.57
32	46.71	48.19	49.08	49.90	50.62	51.23
33	46.95	47.90	48.79	49.60	50.31	50.92
34	46.69	47.64	48.52	49.32	50.04	50.64
35	46.45	47.40	48.27	49.07	49.78	50.38

CONTRACT LENGTH (YEARS)	ADJUSTABLE PLUS NON-ADJUSTABLE COSTS (m/kWh) ON-LINE YEAR 2002	2003	2004	2005	2006	2007
1	33.54	35.15	36.83	38.60	40.45	42.40
2	34.31	35.96	37.68	39.49	41.39	42.11
3	35.08	36.77	38.53	40.38	41.51	42.37
4	35.86	37.58	39.38	40.69	41.83	42.77
5	36.63	38.39	39.79	41.07	42.23	43.22
6	37.40	38.84	40.21	41.49	42.65	43.68
7	37.89	39.30	40.65	41.92	43.10	44.16
8	38.35	39.75	41.09	42.36	43.55	44.64
9	38.81	40.19	41.53	42.80	44.01	45.12
10	39.25	40.63	41.96	43.25	44.46	45.60
11	39.68	41.06	42.39	43.68	44.91	46.07
12	40.11	41.48	42.82	44.12	45.36	46.53
13	40.52	41.90	43.24	44.55	45.80	46.99
14	40.93	42.30	43.65	44.97	46.23	47.44
15	41.32	42.70	44.06	45.38	46.66	47.88
16	41.71	43.10	44.46	45.79	47.08	48.32
17	42.09	43.48	44.85	46.19	47.49	48.74
18	42.46	43.85	45.23	46.58	47.89	49.16
19	42.82	44.22	45.60	46.96	48.29	49.57
20	43.17	44.58	45.97	47.34	48.67	49.97
21	43.51	44.93	46.33	47.70	49.05	50.36
22	43.85	45.27	46.67	48.06	49.42	50.73
23	44.17	45.60	47.01	48.41	49.78	51.10
24	44.49	45.92	47.34	48.75	50.12	51.46
25	44.80	46.24	47.66	49.08	50.46	51.81
26	45.09	46.54	47.98	49.40	50.79	52.16
27	45.38	46.84	48.28	49.71	51.12	52.49
28	45.67	47.12	48.58	50.01	51.43	52.81
29	45.94	47.40	48.86	50.31	51.73	52.35
30	46.20	47.67	49.14	50.59	51.32	51.94
31	46.46	47.94	49.41	50.23	50.95	51.57
32	46.71	48.19	49.08	49.90	50.62	51.23
33	46.95	47.90	48.79	49.60	50.31	50.92
34	46.69	47.64	48.52	49.32	50.04	50.64
35	46.45	47.40	48.27	49.07	49.78	50.38

NON-LEVELIZED AVOIDED COST RATE (m/kwh) CONTRACT START YEAR	NON-ADJUSTABLE PLUS MOST RECENT ADJUSTABLE
2002	33.54
2003	35.15
2004	36.83
2005	38.60
2006	40.45
2007	42.40
2008	41.79
2009	42.97
2010	44.18
2011	45.43
2012	46.71
2013	48.03
2014	49.39
2015	50.78
2016	52.22
2017	53.70
2018	55.22
2019	56.79
2020	58.40
2021	60.06
2022	61.76
2023	63.52
2024	65.32
2025	67.18
2026	69.09
2027	71.06
2028	73.09
2029	75.17
2030	77.31
2031	79.52
2032	81.79
2033	84.13
2034	86.53
2035	0.00
2036	0.00

CERTIFICATE OF SERVICE

I hereby certify that I served the foregoing Direct Testimony and Exhibits of Mark T. Widmer on behalf of PacifiCorp on the following named person(s) on the date indicated below by

- ☒ mailing with postage prepaid
- ☐ hand delivery
- ☐ facsimile transmission
- ☐ overnight delivery

to said person(s) a true copy thereof, contained in a sealed envelope, addressed to said person(s) at their last-known address(es) indicated below.

Scott Woodbury
Idaho PUC
472 W. Washington
Boise, ID 83702

Barton L. Kline
Monica Moen
Idaho Power Company
1221 W. Idaho Street
Boise, ID 83702

Robert J. Lafferty
Avista Corporation
PO Box 3727
Spokane, WA 99220

R. Blair Strong
Tom DeBoer
Paine Hamblen, et al
717 W. Sprague Avenue, Suite 1200
Spokane, WA 99201

Conley Ward
Givens Pursley LLP
PO Box 2720
Boise, ID 83701-2720

William J. Nicholson
Potlatch Corporation
244 California Street, Suite 610
San Francisco, CA 94111

Dean J. Miller
McDevitt & Miller LLP
420 W. Bannock Street
Boise, ID 83702

Peter J. Richardson
Richardson & O'Leary PLLC
PO Box 1849
Boise, ID 83616

Stuart Trippel
Trippel Mast Consulting
506 2nd Avenue, Suite 1001
Seattle, WA 98104-2328

Scott Pasley
David Hawk
J.R. Simplot Company
PO Box 27
Boise, ID 83707-0027

Ronald C. Barr
Earth Power Resources, Inc.
3203 S. Owasso Avenue
Tulsa, OK 74105

Owen H. Orndorff
Orndorff Law Offices
1087 W. River Street, Suite 230
Boise, ID 83702

Jane Gorsuch
Intermountain Forest Association
350 N. 9th Street, Suite 304E
Boise, ID 83702

Eric L. Olson
Racine, Olson, Nye, Budge & Bailey
PO Box 1391
Pocatello, ID 83204-1391

Rick S. Koebbe
WindWorks, Inc.
5356 N. Cattail Way
Boise, ID 83703

Anthony Yankel
29814 Lake Road
Bay Village, OH 44140

DATED: 5, August, 2002.

Peggy Ryan