P.S.C.U. Docket No. 07-057-13
Data Request No. 26.09
Requested by Committee of Consumer Services
Date of QGC Response June 26, 2008

CCS 26.09 Please provide all empirical analysis, studies and other documentation which support the current and proposed winter and summer rates and rate differentials. Please provide any associated documentation and provide all workpapers and calculations in electronic spreadsheet format with all links and formulas intact.

Answer: The calculation of the summer/winter differential is performed in the Sum-Wint tab of all versions the Company's excel rate case model.

An empirical analysis was developed to examine the efficiency of the Company's historical approach to recovery of demand related costs from individual customers with a variety of load factors. The summer/winter differential methodology proposed in this docket is based on the historical methodology.

The first step in the analysis was to develop a sample of customers stratified by load factor. The loads factor strata selected were 10-20%, 20-30%, 30-40%, 40-50% 50-60% and 60-70%. For each customer sampled, the quantity of gas delivered during the winter rate-effective period (November through March) and the gas delivered during the summer rate-effective period (April through October) was determined. An average ratio of winter use to summer use was calculated for each load factor strata.

The analysis is included in CCS 26.09 attach.xls. The spreadsheet has four sections. The first section shows the usage relationships for the sampled customers based on the average load factor of each strata and the average seasonal use, based on a customer with annual use of 100 Dth. (The annual usage could be any amount and the relationships would remain the same). The second section shows the average, by strata, of demand cost responsibility for a customer with annual use of 100 Dth. The third section shows the demand related revenue collection based on the Company's historical (and proposed) methodology. Also shown in this section is the difference from cost responsibility. The final section of the spreadsheet shows the demand related revenue collection based on a winter-only recovery of demand costs, along with the difference from cost responsibility.

Two graphs are included with the analysis. The first graph shows the annual demand cost for the average customer in each load factor strata and the revenue recovery under the Company's historical methodology and the winter-only methodology. The second graph displays the absolute difference from cost for the two rate design approaches.

	Usage Relationships			100 Dth/yr		COS Study	Company Methodology				Winter Only Recovery Methodology			
	Load Factor Mid-Point (a)	Winter/ Summer (b)	Peak Use (c)	Winter Use (d)	Summer Use (e)	COS Demand Allocation (f)	Winter Revenue (g)	Summer Revenue (h)	Total Revenue (i)	Difference (j)	Winter Revenue (k)	Summer Revenue (l)	Total Revenue (m)	Difference (n)
1	15%	8.68	1.83	89.67	10.33	$ 38.46	$ 38.65	$ (1.91)	$ 36.73	$ (1.73)	$ 32.15	$ -	$ 32.15	$ (6.31)
2	25%	3.09	1.10	75.57	24.43	$ 23.08	$ 32.57	$ (4.53)	$ 28.04	$ 4.96	$ 27.09	$ -	$ 27.09	$ 4.02
3	35%	1.61	0.78	61.70	38.30	$ 16.48	$ 26.59	$ (7.10)	$ 19.49	$ 3.01	$ 22.12	$ -	$ 22.12	$ 5.64
4	45%	1.20	0.61	54.52	45.48	$ 12.82	$ 23.50	$ (8.43)	$ 15.07	$ 2.25	$ 19.55	$ -	$ 19.55	$ 6.73
5	55%	1.04	0.50	51.00	49.00	$ 10.49	$ 21.98	$ (9.08)	$ 12.90	$ 2.41	$ 18.29	$ -	$ 18.29	$ 7.80
6	65%	0.92	0.42	48.01	51.99	$ 8.88	$ 20.69	$ (9.64)	$ 11.06	$ 2.18	$ 17.22	$ -	$ 17.22	$ 8.34

Notes to spreadsheet:

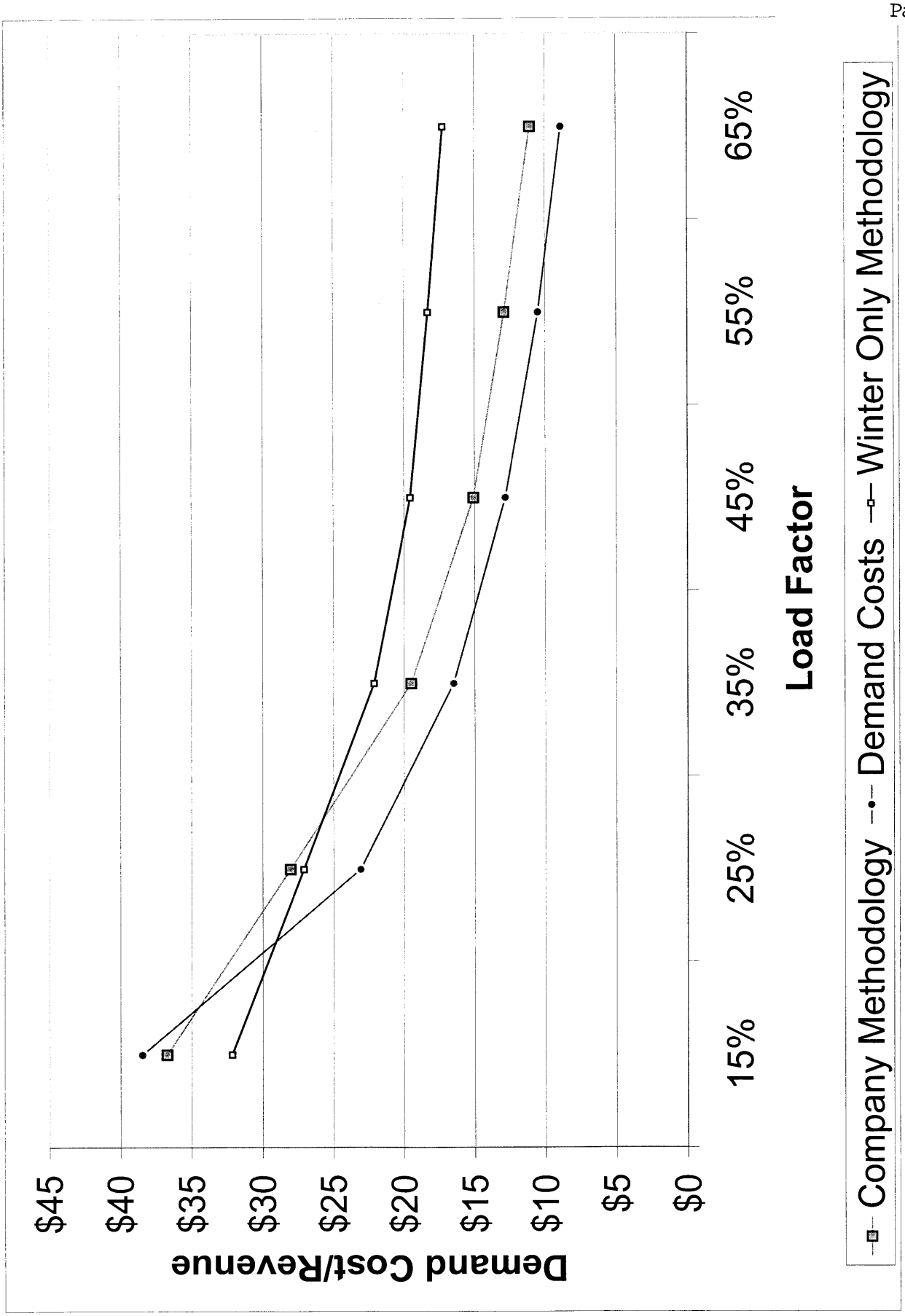
Column (a) The midpoint of the load factor range +/- 5%.
Column (b) Ratio of total winter use to total summer use for customers sampled in each load factor range (see Ratios Tab).
Column (c) Peak day based on the midpoint load factor column (a) assuming 100 Dth annual usage. 100 Dth/365/Column (a).
Column (d) Winter use based on 100 Dth annual use and the ratio of winter use to summer use. (100 Dth/(Column (b) + 1)) * Column (b).
Column (e) Summer use based on 100 Dth annual use and the ratio of winter use to summer use. 100 Dth - Column (d).
Column (f) Allocated Demand Cost. Column (c) * Demand Cost per Peak Day Dth, line 12 (e).
Column (g) Column (d) * Company Winter Demand Recovery/Dth, line 15 (e).
Column (h) Column (e) * Company Summer Demand Recovery/Dth, line 16 (e).
Column (i) Column (g) + Column (h).
Column (j) Column (i) - Column (f)
Column (k) Column (d) * Winter Only Demand Recovery/Dth, line 18 (e).
Column (l) Column (e) * Summer Demand Recovery (Winter Only Methodology)/Dth, line 19 (e).
Column (m) Column (k) + Column (l).
Column (n) Column (m) - Column (f)

	COS & Rate Design Components	(e)
7	Total GS Class Demand Costs	$23,226,002
8	Total GS Commodity Sales	90,090,672
9	Total GS Winter Sales	64,776,962
10	Total GS Summer Sales	25,313,710
11	Total GS Peak Day Responsibility	1,102,930
12	Demand Cost per Peak Day Dth	$ 21.06
13	Demand Cost per Annual Dth	$ 0.25781
14	Demand Cost per Winter Dth	$ 0.35855
15	Company Winter Demand Recovery	$ 0.43099
16	Company Summer Demand Recovery	$ (0.18537)
17	Company S/W Differential	$ 0.61636
18	Winter Only Demand Recovery	$ 0.35855
19	Summer Demand Recovery (Wint. Only)	$ -
20	Winter Only S/W Differential	$ 0.35855

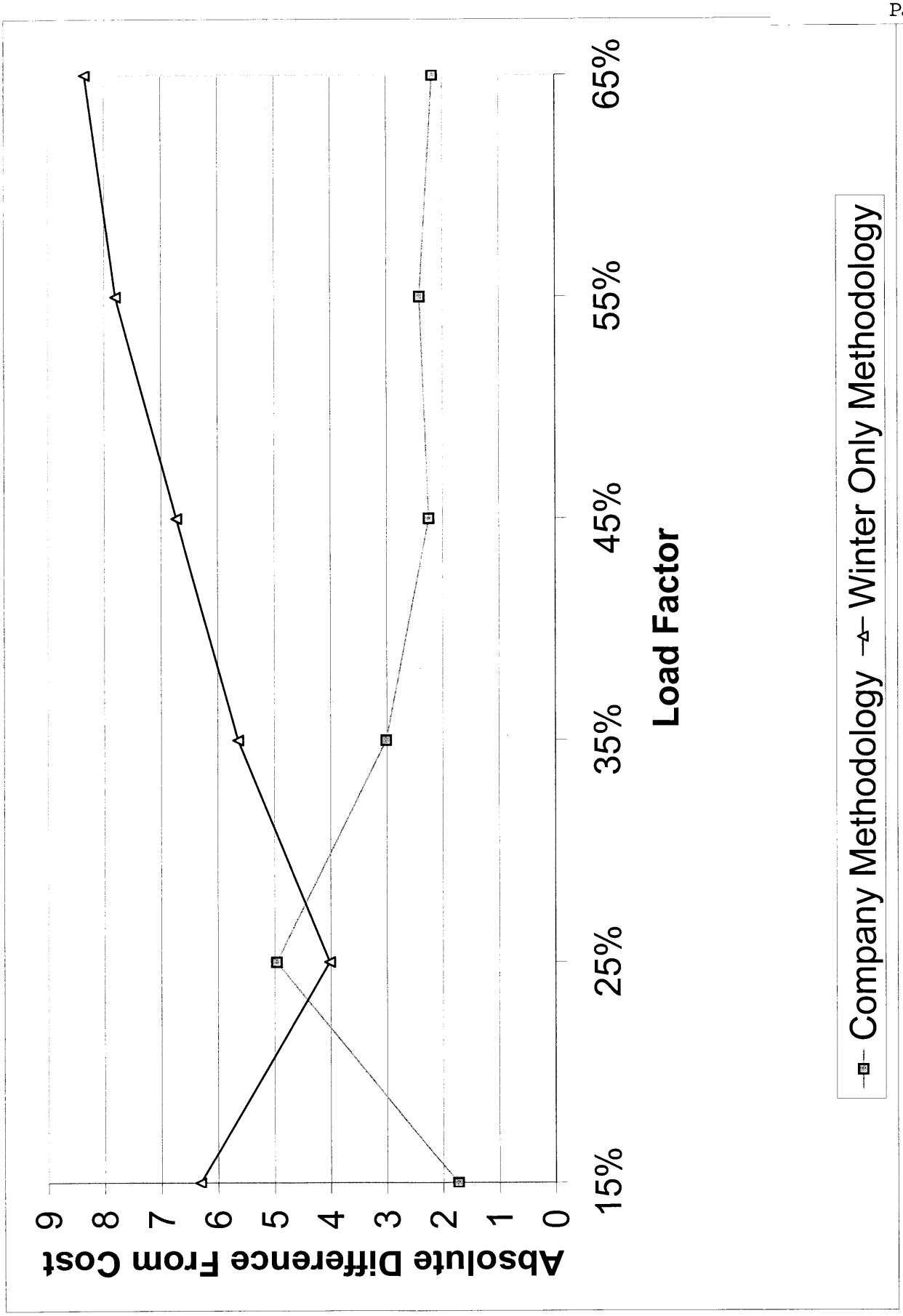
Notes to COS & Rate Design Components:

Total GSR and GSC allocated Demand Costs from COS Study
Total GSR and GSC Commodity Sales
Winter GSR and GSC Commodity Sales
Summer GSR and GSC Commodity Sales
Total GS Peak Day Responsibility from COS Study
Line 7 (e) / Line 11 (e)
Line 7 (e) / Line 8 (e)
Line 7 (e) / Line 9 (e)
(Line 7 (e) -(Line 17 (e) * Line 9 (e)))/Line 8 (e)
Line 15 (e) - Line 17 (e)
Line 13 (e) + Line 14 (e)
Line 14 (e)
Line 18 (e) - Line 20 (e)
Line 14 (e)

GRAPH 1


Demand Cost/Revenue
$45
$40
$35
$30
$25
$20
$15
$10
$5
$0
15%
25%
35%
45%
55%
65%
Load Factor
Company Methodology
Demand Costs
Winter Only Methodology

GRAPH 2


Absolute Difference From Cost
0
1
2
3
4
5
6
7
8
9
15%
25%
35%
45%
55%
65%
Load Factor
Company Methodology
Winter Only Methodology