July 13, 2012

Ontario Energy Board
2300 Yonge Street
Suite 2700
Toronto, Ontario
M4P 1E4

Attention: Ms. Kirsten Walli, Board Secretary

RE: EB-2011-0210 – Union Gas Limited – 2013 Rates Application – Day 1 Undertaking Responses

Dear Ms. Walli,

Please find attached Union's response to undertaking J1.3 from Day 1 of the EB-2011-0210 proceeding.

Yours truly,

[original signed by Joanne Trinca for]

Chris Ripley
Manager, Regulatory Applications

cc: Crawford Smith, Torys
EB-2011-0210 Intervenors

UNION GAS LIMITED

Undertaking of Mr. Aiken
To Mr. Gardiner

Please provide standard regression statistics for each of four equations, and 2013 degree-day forecast for North and South regions using the equation with dummy variable included.

The results for the four requested regressions are contained in Attachments 1-4. The time period for estimation is 1992 to 2011, 20 years.

Two models are estimated for Union South and Union North, respectively:

- Model 1 regresses actual heating degree days against time and a dummy variable for the period 1998 to 2011.
- Model 2 is the 20-Year Declining Trend method.

In Union's view, the inclusion of a dummy variable is not appropriate because inclusion of the dummy variable would necessitate the annual respecification of the degree day trend equation and be subjective. For example, starting the dummy variable in 1999 would result in a weather normal not materially different (1%) from the 20-year trend, while starting in 1998 would because 2012 is warmer than normal, consideration would have to be given to meeting the dummy variable for 2012 to 1 or even 2 to 0.

SUMMARY OUTPUT: Southern HDD - Time & dummy variables for 1998 to 2011

Time Span: 1992 to 2011	
Regression Statistics	
Multiple R	75%
R Square	56%
Adjusted R Square	51%
Standard Error	179.93
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	708,723.71	354,361.85	10.95	0.00
Residual	17	550,352.11	32,373.65		
Total	19	1,259,075.82			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	- 30,764.03	22,927.10	- 1.34	0.20	- 79,135.98	17,607.92
X Time	17.46	11.50	1.52	0.15	- 6.79	41.71
X Dummy 98-11	- 563.12	144.64	- 3.89	0.00	- 868.29	- 257.95

RESIDUAL OUTPUT

Observation	*Actual HDD*	*Predicted HDD*	*Residuals*
1992	4031	4012	19
1993	4105	4030	75
1994	4055	4047	8
1995	3987	4065	-78
1996	4153	4082	70
1997	4005	4099	-94
1998	3175	3554	-379
1999	3554	3571	-18
2000	3792	3589	203
2001	3469	3606	-138
2002	3652	3624	28
2003	3988	3641	347
2004	3807	3659	148
2005	3838	3676	161
2006	3407	3693	-286
2007	3700	3711	-11
2008	3869	3728	141
2009	3824	3746	78
2010	3574	3763	-190
2011	3695	3781	-86
2012		3798	
2013		3816	

forecast is highlighted

SUMMARY OUTPUT: Southern HDD - 20 Year Trend

Time Span: 1992 to 2011

Regression Statistics	
Multiple R	42%
R Square	17%
Adjusted R Square	13%
Standard Error	240.49
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	218,044.26	218,044.26	3.77	0.07
Residual	18	1,041,031.56	57,835.09		
Total	19	1,259,075.82			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	40,026.27	18,665.61	2.14	0.05	811.27	79,241.27
X Time	- 18.11	9.33	- 1.94	0.07	- 37.70	1.49

RESIDUAL OUTPUT

Observation	*Actual HDD*	*Predicted HDD*	*Residuals*
1992	4,031	3,956	75
1993	4,105	3,938	167
1994	4,055	3,920	135
1995	3,987	3,902	85
1996	4,153	3,883	269
1997	4,005	3,865	140
1998	3,175	3,847	-672
1999	3,554	3,829	-276
2000	3,792	3,811	-19
2001	3,469	3,793	-324
2002	3,652	3,775	-123
2003	3,988	3,757	231
2004	3,807	3,739	68
2005	3,838	3,720	117
2006	3,407	3,702	-295
2007	3,700	3,684	16
2008	3,869	3,666	203
2009	3,824	3,648	176
2010	3,574	3,630	-56
2011	3,695	3,612	83
2012		3,594	
2013		3,576	

forecast is highlighted

SUMMARY OUTPUT: Northern HDD - Time & dummy variables for 1998 to 2011

Time Span: 1992 to 2011

Regression Statistics	
Multiple R	78%
R Square	60%
Adjusted R Square	56%
Standard Error	234.89
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	1,419,229.11	709,614.55	12.86	0.00
Residual	17	937,980.83	55,175.34		
Total	19	2,357,209.94			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4,784.81	29,931.31	0.16	0.87	- 58,364.73	67,934.36
X Time	0.32	15.01	0.02	0.98	- 31.34	31.98
X Dummy 98-11	- 584.49	188.83	- 3.10	0.01	- 982.89	- 186.09

RESIDUAL OUTPUT

Observation	*Actual HDD*	*Predicted HDD*	*Residuals*
1992	5,489	5,422	67
1993	5,460	5,422	38
1994	5,294	5,422	-129
1995	5,358	5,423	-65
1996	5,550	5,423	127
1997	5,384	5,423	-39
1998	4,457	4,839	-382
1999	4,754	4,839	-85
2000	5,065	4,840	225
2001	4,613	4,840	-227
2002	5,007	4,840	166
2003	5,147	4,841	306
2004	5,216	4,841	375
2005	4,866	4,841	24
2006	4,473	4,842	-369
2007	4,888	4,842	46
2008	5,040	4,842	197
2009	5,049	4,843	206
2010	4,462	4,843	-381
2011	4,741	4,843	-102
2012		4,844	
2013		4,844	

forecast is highlighted

SUMMARY OUTPUT: Northern HDD - 20 Year Trend

Time Span: 1992 to 2011

Regression Statistics	
Multiple R	61%
R Square	38%
Adjusted R Square	34%
Standard Error	285.44
Observations	20

ANOVA

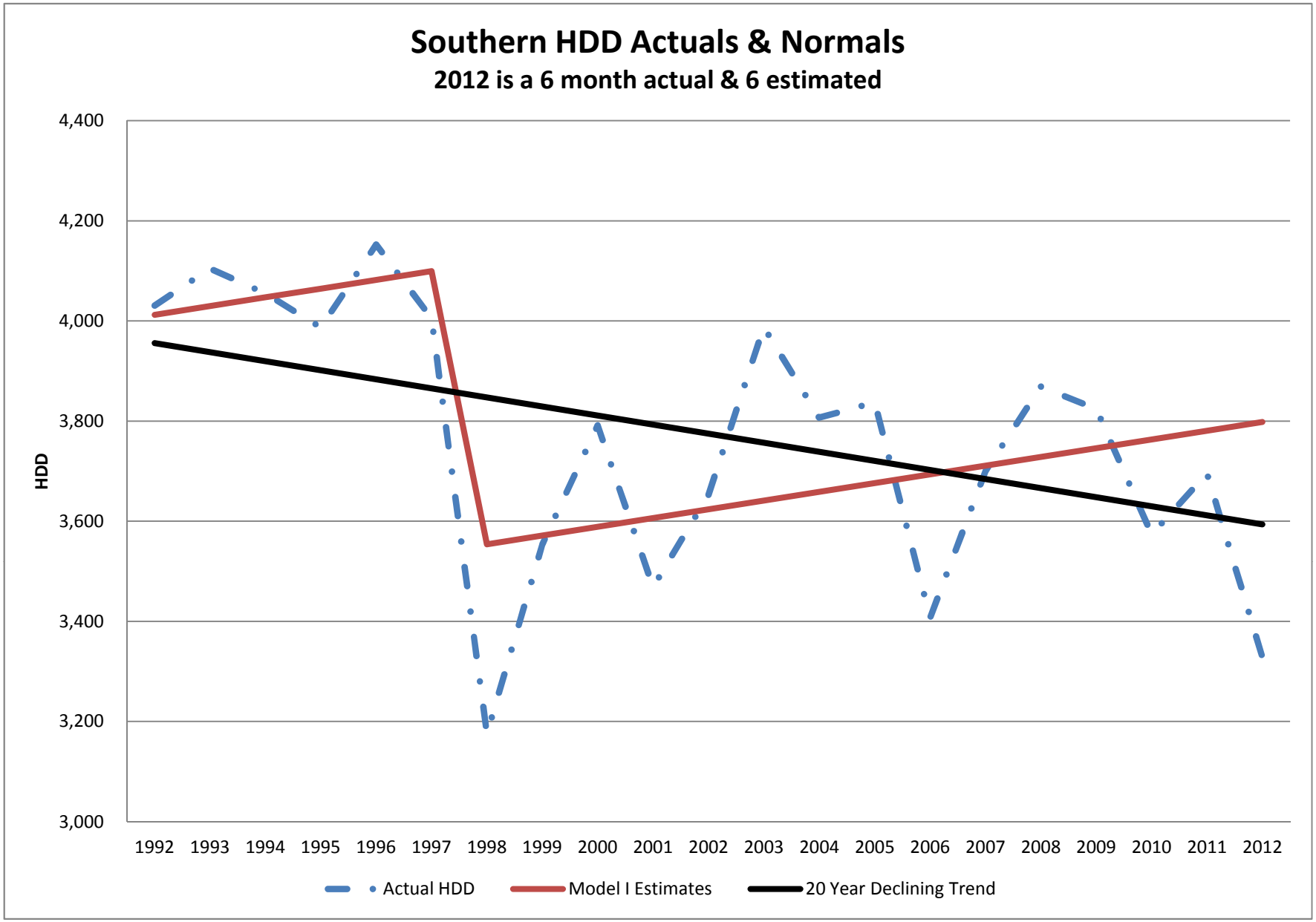
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	890,597.4	890,597.4	10.9	0.0
Residual	18	1,466,612.5	81,478.5		
Total	19	2,357,209.9			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	78,261.81	22,154.81	3.53	0.00	31,716.28	124,807.33
X Time	- 36.60	11.07	- 3.31	0.00	- 59.85	- 13.34

RESIDUAL OUTPUT

Observation	*Actual HDD*	*Predicted Y*	*Residuals*
1992	5,489	5,363	126
1993	5,460	5,327	134
1994	5,294	5,290	4
1995	5,358	5,253	104
1996	5,550	5,217	333
1997	5,384	5,180	204
1998	4,457	5,144	-686
1999	4,754	5,107	-353
2000	5,065	5,070	-5
2001	4,613	5,034	-421
2002	5,007	4,997	9
2003	5,147	4,961	186
2004	5,216	4,924	292
2005	4,866	4,887	-22
2006	4,473	4,851	-378
2007	4,888	4,814	74
2008	5,040	4,778	262
2009	5,049	4,741	308
2010	4,462	4,704	-243
2011	4,741	4,668	73
2012		4,631	
2013		4,595	

forecast is highlighted


Southern HDD Actuals & Normals
2012 is a 6 month actual & 6 estimated
HDD
4,400
4,200
4,000
3,800
3,600
3,400
3,200
3,000
1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Actual HDD
Model I Estimates
20 Year Declining Trend