#### Ref: General

- a) For the years 2002 to 2008 inclusive, please provide a table listing the following information (actual dollars where available, or expected, planned or projected dollars, or % where indicated):
  - i Net income;
  - ii Actual Return on the Equity portion of the regulated rate base (%);
  - iii Allowed Return on the Equity portion of the regulated rate base (%);
  - iv. Retained Earnings;
  - v. Dividends to Shareholders;
  - vi. Sustainment Capital Expenditures excluding smart meters;
  - vii. Development Capital Expenditures excluding smart meters;
  - viii. Operations Capital Expenditures;
  - ix. Smart meters Capital Expenditures;
  - x. Other Capital Expenditures (identify);
  - xi. Total Capital Expenditures including and excluding smart meters;
  - xii. Depreciation;
  - xiii Construction Work in Progress
  - xiv Number of customer additions by class.
  - xv Rate Base

#### Response

Please see below.

	2002	2003	2004	2005	2006	2007	2008
Net Income	319,327	1,263,632	-1,387,081	-738,755	-329,739	-517,419	1,571,858
Actual Return on Equity portion of the regulated rate base %	7.25%	9.57%	3.30%	4.52%	5.68%	5.18%	7.20%
Allowed Return on the Equity portion of the regulated rate base %	8.12%	8.12%	8.12%	8.12%	7.67%	7.67%	7.52%
Retained Earnings	9,906	1,273,538	-113,545	-852,300	-1,182,037	-1,699,462	-127,604
Dividends to Shareholders	0	0	0	0	0	0	0
Sustainment Capital Expenditures excluding smart meters							
Development Capital Expenditures excluding smart meters							
Operations Capital Expenditures							
Smart meters Capital Expenditures	0	0	0	0	0	0	6,737,612
Other Capital Expenditures (identify)	2,228,519	1,775,800	2,759,696	3,761,856	3,356,036	3,831,237	5,422,571
Total Capital Expenditures including smart meters	2,228,519	1,775,800	2,759,696	3,761,856	3,356,036	3,831,237	12,160,183
Total Capital Expenditures excluding smart meters	2,228,519	1,775,800	2,759,696	3,761,856	3,356,036	3,831,237	5,422,571
Depreciation	2,455,890	2,495,457	2,574,456	2,668,236	2,764,612	3,046,595	3,310,977
Construction Work in Progress							
Number of Customer Additions by class:							
Residential	37	49	32	1	38	30	30
GS<50	42	-13	35	18	36	-35	10
GS>50	5	3	14	1	1	-6	0
Street Lights (connections)		51	31	-15	56	31	31
Sentinal Lights (connections)	0	0	0	-13	-7	-5	-5
USL (connections)	2	0	15	1	0	-2	0
Rate Base	43,150,941	42,529,922	43,107,019	45,747,269	43,661,268	44,192,326	49,406,580

Ref: Exhibit 2/ Capital Budget by Project

- a) Carry Over Projects and their Costs
  Please identify the carryover projects where applicable, for the 2006 actual,
  2007 bridge year, and 2008 test year.
  - (i) For each carryover project, please provide and present the information as indicated in Table 1 below.
  - (ii) For each carryover project, please provide the reasons for the carryover in the format of Table 2 shown below. Please specify whether the project is a one-time or an ongoing project.

Response Please see Below

# Responses to Board Staff Interrogatories PUC Distribution 2008 Electricity Distribution Rates EB-2007-0931 Page 4 of 18

) - ··· - ·	2005 to 2007.						
		2005	2006	2007			
apital Bu	dget	\$3,009,000	\$4,151,815	\$4,919,237			
kctual Car	pital Expenditures	\$3,761,856	\$3,356,036	\$4,082,327			
		-\$752,856	\$795,779	\$836,910			
apital wo	। irks not completed as budgeted in 2	006 include:					
1.	Pole replacements			\$380,000			
	Conversion work			\$200,000			
2.	Computer Hardware and Software	eters	\$220,000				
				\$800,000			
1.	Pole replacements and conversion	work were under b	udget as a re	sult of the lat	te hire dates of new	7	
	line staff and line staff being hired	at the apprentice le	vel rather the	preferred mo	re experienced jour	rneyman level.	
	Expenditures were budgeted in ant	icination of progres	sing with sm:	art meters wi	hich did not take nl	ace	
		, , , , , , , , , , , , , , , , , , ,	vering mini em				
apital wo	 rks not completed as budgeted in 2	007 include:					
	Pole replacements			\$400,000			
	35 kV cables at substation			\$220,000			
3.	TS Equipment			\$255,000			
				\$875,000			
1	Pole replacements under budget d	ue to significnat nu	mber of line a	pprentices -	2008 budget for po	le replacement reduced	l
1.		in 2008 capital bud	dget). Not co	 mpleted in 20	007 due to lack of d	 contractor resources av	ailable.
	To be completed in 2008 (included		w /				
	To be completed in 2008 (included						
2.	To be completed in 2008 (included To be completed in 2008 (included		lget). Not co	mpleted in 20	007 due to delay in	work by consultants.	
2.		in 2008 capital bud	•	•			n

Ref: Exhibit 2/ BDR, Metsco Report

a) Reliability Statistics, Pages 138 & 139: Please quote the reference sources for the data in figures 2.4 and 2.5 on the expectations of failure rates of relevant cable type.

Response Please see below.

## **BDR**

34 King Street East, Suite 1000, 10<sup>th</sup> Floor, Toronto, Ontario M5C 2X8 416-214-4848

Feb 18, 2008

Dominic Parrella Vice President Operations & Engineering P.O. Box 9000 Sault Ste. Marie, Ontario P6A 6P2

Dear Mr. Parrella:

#### Re: Your Recent Inquiry - Distribution Cable Failure Predictions

This is in response to your email inquiry, seeking references in support of distribution cable failure rate predictions presented in Figure 2.4 and Figure 2.5 of our report titled "Review of Capex and O&M Plan".

Figures 2.4 and 2.5 were developed by the undersigned, based on the typical failure rates experienced on earlier vintages of medium voltage, cross linked poly ethylene insulated cables, prior to the adoption of tree retardant designs. The typical failure rates were established based on cable failure data, collected and compiled on a significant number of assignments completed by the undersigned on behalf of a number of electric utility clients in North America from 1992 to 2007. While a majority of the consulting assignment reports contain privileged and confidential information, the following reports and papers, available in the public domain, support the methodologies and the failure statistics employed in development of Figure 2.4 and 2.5:

"Deriving Asset Probabilities of Failure: Effect of Condition and Maintenance Levels – IEEE Paper" G. Anders, Fellow, IEEE, S. Otal, Senior Member, IEEE, and T. Hjartarson Senior Member IEEE - 2006

"Review of methods for determining cable replacement priorities – MEA R&D Project RD-UG-9405" – S. Otal, D. Cardone, S.J. Robertson - 1996

"Value Based Reliability Distribution Planning – CEA R&D Project 273 D 887" R.M. Godfrey and R. Billinton – 1996

# Responses to Board Staff Interrogatories PUC Distribution 2008 Electricity Distribution Rates EB-2007-0931 Page 7 of 18

Please do not hesitate to contact us, should you require additional information on this matter.

Yours truly,

Shawn Otal, P.Eng.

Responses to Board Staff Interrogatories PUC Distribution 2008 Electricity Distribution Rates EB-2007-0931 Page 8 of 18

8 e) If necessary, please update the tables labelled "Capital Structure" and "Cost of Debt" in Exhibit 6 based on PUC Distribution's responses to the above.

Response Please see the tables below

# Responses to Board Staff Interrogatories PUC Distribution 2008 Electricity Distribution Rates EB-2007-0931 Page 9 of 18

	Capital Structure									
	Elements			Capital Str	ucture					
					Deemed					
			(\$)	Actual (%)	(%)	Cost Rate	Return (%)			
	Long-term debt		41,940,000	90	50	6.35	3.18			
	C		4.050.440	40	50		4.5			
	Common equity		4,656,146	10	50	9	4.5			
	Total		46,596,146	100	100		7.68			
	Total		40,000,140	100	100		7.00			
he proi	ected shareholder lo	an renec	iotiation has n	ot been co	mnleted F	ollowina i	s the curr	ent struc	tura	
	cipated that the share				•					
	ructure of 60/40.	enoidei i	Jans will be au	ijusteu iii ti	ie spring o	1 2000 10	De III IIIIe	with the v	Jeemed debt to	
quity st	ructure of 60/40.									
	Canital Structure									
	Capital Structure Elements			Capital Str	ueture					
	Ciements			Capital Str	Deemed					
			(\$)	Actual (%)	(%)	Cost Rate	Return (%)			
			(*/	rictata (10)	(~)	Cost Mate	rectain (10)			
	Long-term debt		29,643,948	60%	53%	6.35	3.18			
	,		i i							
	Common equity		19,762,632	40%	47%	9	4.5			
	Total		49,406,580	100%	100%		7.68			
	2006 P 1		2006 Actual		2007 D11		2000 T			
	2006 Board-approved Principal	Rate (%)	Principal	Rate	2007 Bridge	Rate	2008 Test	Rate (%)		
	гтисфа	Kale (90)	Linchai	(%)		(%)		Kale (%0)		
Vote	\$11,650,000	8.5	\$11,650,000		\$11,650,000		\$11,650,000	8.5		
ayable to			, , , , , , , , , , , , , , , , , , , ,		,,,		,,,			
UC Inc.										
Tote	\$30,290,000	5	\$30,290,000	5	\$30,290,000	5	\$30,290,000	5		
ayable to										
UC Inc.										
'hird			I							
hird										
hird			\$41,940,000		\$41,940,000		\$41,940,000			

29 d) Please provide an explanation of each variance from 2006 Board Approved versus 2006 Actual, 2006 Actual versus 2007 Bridge and 2007 Bridge versus 2008 Test, respectively.

#### Response

Explanations for the variances in other distribution revenue are as follows: (any variance under \$5,000 considered to be immaterial)

### Variance from 2006 Board Approved (2004 Actual) to 2006 Actual

- Retail service revenues \$21,295
   Increase in the number of retailers customers.
- Revenue from merchandising, jobbing etc. (\$48,494)
   Write-off of uncollectible non-energy accounts receivable and more diligent screening of traffic accidents for capitalization.
- Rent from electric property (\$71,122)
   Write-off of Shaw accounts receivable for pole rentals which had been in dispute prior to the OEB setting the rate.
- Late Payment Charges \$31,887 Increase in late payments.
- Miscellaneous Service Revenue \$9,957
   OEB rate increase for misc. charges for part of the year.
- Interest and Dividend Income \$148,804
   Large cash balance on hand in 2006 due to IESO underpayment which was corrected the following year.

#### Variance from 2006 Actual to 2007 Bridge

- Distribution Service Revenue (\$7,483)
   Reduction due to increased number of retailers customers.
- Rent from electric Property \$284,003
   Increase due to prior year write-off of Shaw accounts receivable for pole rental charges.

- Miscellaneous Service Revenues (\$89,064)
   Under-estimate of occupany charges by \$120,000 (increased regulated charge) will result in increased revenue over prior years due to increased regulated rate.
- Interest and Dividend Income (\$67,138)
  Reduction in cash on hand due to repayment of prior IESO underpayment.

#### Variance from 2007 Bridge to 2008 Test

- Miscellaneous Service Revenues \$32,600
   Underestimate of estimated occupany charges by \$120,000.
- Interest and Dividend Income (\$52,228)
   Less cash on hand due to increased expenditures in 2008.

Ref: Exhibit 3 / Page 10, and Exhibit 5 / Page 5

For three classes -- GS < 50 kW, GS > 50 kW, and USL -- the volumetric units used in Exhibit 5 do not match the test year normalized forecast in the final column of Exhibit 3. Please explain this discrepancy, and if appropriate please provide the correct calculation in Exhibit 5.

#### Response

Please refer to Question # 53 (a) for a revised regulatory asset rate rider calculation with the correct volumetric units.

#### Loss Factors

#### References:

- i. Exhibit 4. Page 56 (Loss Adjustment Factor Calculation)
- ii. Exhibit 4, Page 57 (Materiality Analysis On Distribution Losses)
- iii. Exhibit 9, Page 16 (Existing Rate Schedule)
- iv. Exhibit 9, Page 19 (Proposed Rate Schedule)
- The 1st reference provides a calculation of actual distribution loss factors (DLF) for 2004 to 2006 and an average for the 3-year period. This reference further provides proposed total loss factors (TLF) for 2008.
- The 2nd reference provides a comparison between the approved loss factor for 2007 and proposed loss factor for 2008.
- The 3rd and 4th references provide TLFs for 2007 (approved) and 2008 (proposed) respectively.
- a. The loss factor calculation in rows A to H in the upper table in the 1st reference follows the framework of the 2006 EDR Handbook Schedule 10-5, wherein the factor calculated corresponds to DLF for secondary metered customer < 5,000 kW. Row H titled "Distribution Loss Adjustment Factor" confirms the calculated factors as DLF. The average DLF for the 3-year period is shown in the column titled "Total" in the upper table as 1.0454. However the same value is replicated both in the lower table with the label "Total Loss Factor" and in the 4th reference as the proposed TLF for 2008. As TLF = DLF x Supply Facilities Loss Factor (SFLF), we need to establish whether the proposed loss factor of 1.0454 refers to DLF or TLF.

Please further confirm whether kWh values shown in row A titled "Wholesale kWh (IESO)" correspond to:

- the metering installation on the secondary or low voltage side of the transformer, or
- the defined meter point on the primary or high voltage side of the transformer

If it is the former, row H refers to DLF:

- Please confirm if the label in the lower table is incorrect, as 1.0454 is DLF and not TLF.
- Please provide the correct TLF based on a DLF of 1.0454 and the corresponding SFLF.
- Please provide a correction for the proposed TLF for 2008 in the 4th reference.

If it is the latter, row H refers to TLF:

- Please confirm if the label in upper table is incorrect, as 1.0454 is TLF and not DLF.
- Please provide the correct DLF based on a TLF of 1.0454 and the corresponding SFLF.
- Please confirm that the loss factors in the lower table refer to proposed factors for 2008.
- b. The 2nd reference refers to 1.0430 as the approved 2007 DLF, whereas the 3rd reference refers to 1.0430 as the approved 2007 TLF. Please confirm that the terminology in the latter is correct.
- c. Please explain the rationale for proposing that the loss factor for 2008 be an average of the loss factors for the 3-year period (1.0454) rather than a lower value such as the actual loss factor in 2005 of 1.0437.
- d. Please describe any steps that are contemplated to decrease PUC Distribution's loss factor during the test year (2008) and/or during a longer planning period.

#### Response:

a. The kWh values shown in row A titled "Wholesale kWh (IESO)" correspond to the defined meter point on the primary or high voltage side of the transformer. The label in the upper table is incorrect – 1.0454 is the TLF.

It is PUC Distribution's understanding that since it receives energy at 115 kV and its transmission class assets are considered part of its distribution system that TLF is also DLF.

The loss factors in the lower table refer to proposed factors for 2008.

- b. The latter is correct, 1.043 is the total loss factor.
- c. The rationale for the 2008 loss factor being calculated as the average of the loss factors for 2004-2006 is that, as referenced in part a., this is consistent with the approach used in the 2006 EDR process.
- d. PUC Distribution plans to continue its voltage conversion program in 2008 and beyond.

Ref: Exhibit 5/ Pages 4 & 5

PUC Distribution is requesting for the disposition of regulatory variance accounts in Exhibit 5/ Page 5. The totals in the exhibit do not agree with the totals reported to the Board as per 2.1.1 of the Reporting and Record Keeping Requirements for the period ending December 31, 2006.

Please provide the information as shown in the attached continuity schedule for regulatory assets and provide a further schedule reconciling the continuity schedule with the amounts requested for disposition on Exhibit 5/ Page 5. Please note that forecasting principal transactions beyond December 31, 2006 and the accrued interest on these forecasted balances and including them in the attached continuity schedule is optional.

#### Response

The balances reported to the Board under S.2.1.1.(January 31, 2007) do not capture the final year end figures as information is still outstanding at that time 2.1.1 submission is required by the OEB ie. power expense for December, therefore the variance account totals are not final. The power invoice is not received until February therefore the final balances to calculate the variances are not available to be reported by January 31<sup>st</sup>. The adjustments are reflected in the S.2.1.1. filing March 31, 2007.

The continuity schedule attached as Appendix D and the amounts requested for disposition on Ex5/Page5 agree to the final December 31, 2006 balances. Please refer to attached continuity schedule submitted with these responses as PUCDistribution IRR OEB AppendixD 20080305.

Ref: Exhibit 1/Page 143 & Exhibit 5/Page 4

a. Please explain why there are no forecasts for the deferral and variance accounts in the 2008 pro forma balance sheet.

#### Response

The deferral and variance account balances are accumulated with other balances in the model utilized by PUC Distribution. Please refer to the OEB spreadsheet of deferral and variance account balances attached to these responses as Appendix D.

(PUCDistribution\_IRR\_OEB\_AppendixD\_20080305)

Ref: Exhibit 5/Page 5

a) Please provide allocations and rate riders for recovery of regulatory deferral and variance accounts balances comprised of the December 31, 2006 balances with interest forecast to April 30, 2008 for the period after December 31st, 2006.

#### Response

Please refer to below for the revised rate rider calculations with interest forecast to April 30, 2008 and the revised forecasted volumetric units as indicated in question #40.

	Endina			l					
	Ending	Allocation					Continol		
	Balance	Allocation					Sentinel	Otront	
	April 30	Dania	Desidential	00-501407	00-501407	HOL	Lindation	Street	Tatal
4500 5 4 7 0 77	2008	Basis	Residential	GS<50KW	GS>50KW	USL	Lighting	Lighting	Total
1588 Retail Settlement									
Variance Account –	(500.007)	1400	(005.544)	(77.044)	(000 005)	(04.0)	(224)	(5.74.0)	(500.007)
Power	(592,397)	KWh	(285,511)	(77,944)	(222,395)	(612)	(221)	(5,714)	(592,397)
1518 Retail Cost		#							
Variance Account -	(4.50.54.4)		(404.500)	/4 E 7 E E \	(2.004)	(4.24)	/E\	(22)	(4.50.54.4)
Retail	(152,514)	Customers	(134,536)	(15,755)	(2,064)	(131)	(5)	(23)	(152,514)
1548 Retail Cost		#							
Variance Account - STR	56,068	Customers	49,459	5,792	759	48	2	9	56,069
1580 Retail Settlement	30,000	Custolliers	40,433	3,732	133	40		3	30,003
Variance Account –									
Wholesale Market									
service Charges	(510,825)	KWh	(246,197)	(67,211)	(191,772)	(528)	(191)	(4,927)	(510,826)
1584 Retail Settlement	(310,023)	137711	(240,131)	(01,211)	(101,112)	(020)	(101)	(4,021)	(310,020)
Variance Account –									
Retail transmission									
Network Charges	(468,200)	KWh	(225,654)	(61,603)	(175,770)	(484)	(175)	(4,516)	(468,202)
Network Charges	(400,200)	EXTYLI	(223,034)	(01,000)	(175,770)	(404)	(113)	(4,510)	(400,202)
1508 Other Regulatory		#							
Assets	509,595	Customers	449,522	52,642	6,898	439	16	78	509,595
Total	(1,158,273)		(392,917)	(164,079)	(584,344)	(1,268)	(574)	(15,093)	(1,158,275)
	, , , ,		, , ,	, , ,	, , ,	,,,,,	, ,	, , ,	, , , , ,
Clear Residual 1590									
Balances			305,288	71,838	158,748	616	179	4,259	
Total			(87,629)	(92,241)	(425,596)	(652)	(395)	(10,834)	
Per year			(43,815)	(46,121)	(212,798)	(326)	(198)	(5,417)	
			352,377,221	96,197,960	675,865	755,305	759	21,706	
Total Year Consumption			KWh	K₩h	ΚW	KWh	ΚW	ΚW	
2008 Rate Rider			(0.0001)	(0.0005)	(0.3149)	(0.0004)	(0.2602)	(0.2496)	

b) Are principal balances on 1590 being forecasted beyond December 31, 2006 and included in the amount for disposition in the schedule?

### Response

Principal balances are not being forecast on account 1590 beyond December 31, 2006.