



File Number: EB-2013-0174

Date Filed: October 31, 2013

Exhibit 7

COST ALLOCATION



File Number: EB-2013-0174

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Cost Allocation Study



Cost Allocation Overview

Veridian has prepared a Cost Allocation Study (“CAS”) for its 2014 forward test year rate application.

Veridian has followed the guidance provided in the following sources:

- *Cost Allocation Informational Filing Guidelines for Electricity Distributors, November 15, 2006*
- *Application of Cost Allocation for Electricity Distributors, November 28, 2007 (EB-2007-0667);*
- *Review of Electricity Distribution Cost Allocation Policy: Report of the Board (EB-2010-0219), March 31, 2011;*
- *Board letter of July 16, 2013, setting out the Board’s approach to the allocation of host electricity costs to embedded distributors (EB-2010-0219)*
- *Chapter 2 of the Filing Requirements for Electricity Transmission and Distribution Applications (“Filing Requirements”), July 17, 2013*

In 2007, Veridian filed two cost allocation information filings (“CAIF”) consistent with the OEB issued model, guidelines and directions. One for was the Veridian_Main tariff zone which included all of Veridian’s service areas except Gravenhurst. Another separate CAIF was filed for the Veridian_Gravenhurst tariff zone.

In its 2010 COS rates proceeding, EB-2009-0140, Veridian again, filed separate Cost Allocation Models for each of the Veridian_Main and Veridian_Gravenhurst tariff zones.



Those models were prepared in accordance with the 2006 Board issued directions, guidance and instructions.

In its 2010 COS proceeding, Veridian developed a single 2010 Test Year revenue requirement and apportioned the revenue requirement between its two tariff zones. Tariff zone-specific financial information such as asset values and operating costs were not available for inclusion in each of the tariff zone-specific Cost Allocation Models. As an alternative, the 2010 Cost Allocation Models were developed for each tariff zone using the underlying costs and revenues from the 2006 CAIFs.

Adjustments were made for:

- prescribed corrections for transformer ownership allowance treatment
- minor errors in the Veridian_Main 2006 model were identified and corrected
- hourly load and customer count information were adjusted to reflect a significant 2006 reclassification of GS customers
- load information, hourly load profiles and customer counts were updated to reflect 2010 forecasted values through use of scaling methodologies
- Updates to allocators such as the 2010 proposed changes in billing frequency for its residential customers from quarterly to bi-monthly

Within this application, Veridian is proposing harmonization of distribution rates between its existing tariff zones of Veridian_Main and Veridian_Gravenhurst. Accordingly, Veridian has completed a single 2014 CAS using the 2014 Board issued Cost Allocation Model (version 3.1). A live MS Excel version of the Model has been provided.

The 2014 CAS reflects 2014 forecasted loads and costs.



1 As set out in Exhibit 6-A, Veridian has used the calculated values of the 2014 Year-End Net
2 Fixed Asset Revenue Requirement (“YE NFA Revenue Requirement”) and Year End Asset
3 values as the basis for its 2014 CAS. The CAS determines revenue responsibility by class for the
4 2014 YE NFA Revenue Requirement.

5
6 As outlined in Exhibit 6-A, the credit amount of (\$1,704,365), being the difference in revenue
7 requirement between the Average and YE NFA Revenue Requirement is also allocated to the
8 rate classes, in the same proportion, within Exhibit 8-Rate Design to effectively bring the
9 Revenue Requirement to be recovered through 2014 base distribution rates and the proposed
10 negative 2014 Revenue Requirement Adjustment Rate Riders (“RRARRs”) back to the Average
11 NFA Revenue Requirement levels. Full details of the proposed methodology are provided in
12 Exhibit 6-A and Exhibit 8.

13
14 Veridian has engaged the services of Elenchus Research Associates Inc. (“ERA”) to prepare its
15 2014 CAS for this application. ERA has prepared a report (“the ERA Report”) on its
16 methodology and results and it has been filed as Exhibit 7, Tab 1, Schedule 1, Attachment 8.

17 18 **Filing of the Model Inputs and Outputs**

19
20 As required, Veridian has filed a hard copy of input sheets I-6.1-Revenue, I6.2-Customer Data, I-
21 8-Demand Data and output sheets O1-Revenue to Cost|RR and O2-Fixed Charge|Floor|Ceiling
22 and a complete live copy of the MS Excel Model has been filed with the application.

23
24 Veridian has also completed and filed Appendix 2-P. All of these documents can be found as
25 attachments to this exhibit.



Treatment of Embedded Distributors

Veridian is a host distributor to PowerStream Inc. through a single embedded supply point. Veridian currently applies its General Service class distribution rates for this embedded supply point. Veridian has consulted with PowerStream on its proposal to continue application of this practice and not established an embedded distributor rate class. Veridian is in receipt of a letter from PowerStream supporting this proposal. The letter has been provided as Attachment 6 to this Schedule.

Accordingly, Veridian has included all costs and revenues associated with this embedded supply point within the appropriate GS class within its Cost Allocation Study and has not established a separate embedded distributor rate class.

Veridian has provided, with the best information available, a completed Appendix 2-Q which provides information as to how much of Veridian's facilities are required to serve this single embedded supply point for PowerStream Inc.

Veridian proposes that continuation of the practice of applying the General Service class distribution rates for these host distribution services is appropriate as the extent of the services is not material in load, customer numbers or costs and the service provision is meant to be temporary in nature. As noted in the letter, PowerStream intends to complete an extension of its distribution feeder to the supplied location at which time it will no longer require provision of services from Veridian.



MicroFIT Class

As stated in the Filing Requirements, the microFIT class has not been included as a separate rate class in Veridian's 2014 Cost Allocation Study. Veridian understands that the Board will provide updated uniform microFIT rate information at a future date.

New or Eliminated Customer Classes

Veridian is not proposing any new customer classes in this application.

Through the process of harmonization of its two existing tariff-zones, a new class structure for the Residential rate class will result in merging of the existing Veridian_Main Residential class with two existing Residential classes within the Veridian_Gravenhurst tariff-zone; Residential-Urban and Residential-Suburban. To the extent possible, Veridian has provided information on the class revenue requirements for these classes from its 2010 COS proceeding to provide continuity of information.

Weighting Factors

Weighting Factor for Services: Veridian has not used the Board default weighting factors for services but rather has developed weighting factors based on engineering cost data.

Weighting Factor for Billing and Collecting: Distributor specific weighting factors for billing and collecting costs by rate class have been used. Veridian calculated weighting factors using measures for complexity of typical transactions for each rate class. It was determined that resources required and complexity of transactions for Residential, Residential Seasonal, GS < 50 kW and Street Lighting were equivalent and given the weighting of 1. Complexities increased



1 with GS > 50 kW and Intermediate and Large Use customers and they were given weightings of
2 2, 6 and 6 respectively. Sentinel lighting and Unmetered Scattered load were considered the
3 least complex with weightings of 0.5 each.

4
5 Weighting Factors for Density: Given the low density of the Residential Seasonal service
6 territory and inherent higher costs to serve, weighting factors were initially introduced for this
7 rate class as part of the original Veridian_Gravenhurst CAIF. These weighting factors were
8 continued in the 2014 model. The weighting factors were established for each of poles, O/H
9 Conductors, U/G Conductors and Transformers.

10
11 Weighting Factors for Meter Reading: Distributor specific weighting factors for meter reading
12 have been developed and used for the GS > 50 kW, GS > 50 kW Intermediate and Large Use
13 classes. The factors were developed based on relative costs for non-interval meter reading still
14 completed manually and interval meter reading completed using telecommunication equipment.
15 Meter reading costs for the Residential and GS < 50 kW classes are primarily related to
16 Veridian's Advanced Metering Infrastructure ("AMI") and are included within Billing Costs.

17
18 Veridian has used the results of the 2014 CAS to adjust rates calculated at the current revenue
19 allocation so that the proposed rates for May 1st, 2014 result in revenue-to-cost ratios that fall
20 within the ranges established by the *Report of the Board: Review of Electricity Distribution Cost*
21 *Allocation Policy (EB-2010-0219) dated March 31, 2011.*

22
23 Veridian has used the Monthly Service Charge ("MSC") ceiling as calculated in the 2014 model
24 in determining the proposed MSC for each rate class.



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- 1 Where the current 2013 MSC is at or above the 2014 ceiling, the proposed MSC has been capped
- 2 at the 2013 MSC. Otherwise, the proposed MSC has been designed to maintain the existing
- 3 fixed/variable revenue split by customer class.



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Cost Allocation Sheet I-6.1-Revenue

**Sheet I6.1 Revenue Worksheet - Final Run**

Miscellaneous Revenue (RRWF 5. cell F48)	3,767,464
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[illegible]



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Cost Allocation Sheet I-6.2-Customer Data



2014 Cost Allocation Model

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Sheet I6.2 Customer Data Worksheet - Final Run

			1	2	3	4	5	6	7	8	9
	ID	Total	Residential	Residential Seasonal	GS <50	GS>50-Regular	GS >50-Intermediate	Large Use >5MW	Sentinel	Street Light	Unmetered Scattered Load
Billing Data											
Bad Debt 3 Year Historical Average	BDHA	\$714,633	\$422,759	\$3,375	\$37,600	\$250,900	\$0	\$0	\$0	\$0	\$0
Late Payment 3 Year Historical Average	LPHA	\$699,224	\$456,025	\$4,606	\$48,538	\$190,055					
Number of Bills	CNB	720,948	637,002	9,510	52,962	12,876	60	24	2,850	108	5,556
Number of Devices										30,340	
Number of Connections (Unmetered)	CCON	5,794							475	4,393	926
Total Number of Customers	CCA	119,069	106,167	1,585	8,827	1,073	5	2	475	9	926
Bulk Customer Base	CCB	119,069	106,167	1,585	8,827	1,073	5	2	475	9	926
Primary Customer Base	CCP	119,069	106,167	1,585	8,827	1,073	5	2	475	9	926
Line Transformer Customer Base	CCLT	118,979	106,167	1,585	8,827	990			475	9	926
Secondary Customer Base	CCS	118,979	106,167	1,585	8,827	990			475	9	926
Weighted - Services	CWCS	122,973	106,167	1,585	13,241	1,980	-	-	-	-	-
Weighted Meter -Capital	CWMC	21,944,562	16,631,970	252,927	3,245,950	1,703,554	78,687	31,475	-	-	-
Weighted Meter Reading	CWMR	10,898	-	-	500	10,062	240	96	-	-	-
Weighted Bills	CWNB	730,041	637,002	9,510	52,962	25,752	360	144	1,425	108	2,778
Weighted Primary Customer-Poles	WPCCP	128,208	106,167	6,340	8,827	1,073	5	2	475	4,393	926
Weighted Secondary Customer-Poles	WPCCS	128,118	106,167	6,340	8,827	990	-	-	475	4,393	926
Weighted Primary Customer-O/H	WOCCP	134,548	106,167	12,680	8,827	1,073	5	2	475	4,393	926
Weighted Secondary Customer-O/H	WOCCS	134,458	106,167	12,680	8,827	990	-	-	475	4,393	926
Weighted Primary Customer-U/G	WUCCP	125,196	106,167	3,329	8,827	1,073	5	2	475	4,393	926
Weighted Secondary Customer-U/G	WUCCS	125,107	106,167	3,329	8,827	990	-	-	475	4,393	926
Weighted Line Transformer	WTCCLT	128,118	106,167	6,340	8,827	990	-	-	475	4,393	926

Bad Debt Data

Historic Year:	2010	971,600	436,791	5,830	48,580	480,399					
Historic Year:	2011	560,400	437,146	2,130	33,624	87,500					
Historic Year:	2012	611,900	394,341	2,164	30,595	184,800					
Three-year average		714,633	422,759	3,375	37,600	250,900	-	-	-	-	-



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Cost Allocation Sheet I-8-Demand Data



2014 Cost Allocation Model

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Sheet 18 Demand Data Worksheet - Final Run

This is an input sheet for demand allocators.

CP TEST RESULTS	12 CP
NCP TEST RESULTS	4 NCP

Co-incident Peak	Indicator
1 CP	CP 1
4 CP	CP 4
12 CP	CP 12

Non-co-incident Peak	Indicator
1 NCP	NCP 1
4 NCP	NCP 4
12 NCP	NCP 12

Customer Classes	Total	1	2	3	4	5	6	7	8	9		
		Residential	Residential Seasonal	GS <50	GS>50-Regular	GS >50-Intermediate	Large Use >5MW	Sentinel	Street Light	Unmetered Scattered Load		
CO-INCIDENT PEAK												
1 CP												
Transformation CP	TCP1	422,979	191,084	1,567	45,499	152,041	16,495	10,781	73	4,965	475	
Bulk Delivery CP	BCP1	422,979	191,084	1,567	45,499	152,041	16,495	10,781	73	4,965	475	
Total Sytem CP	DCP1	422,979	191,084	1,567	45,499	152,041	16,495	10,781	73	4,965	475	
4 CP												
Transformation CP	TCP4	1,661,784	728,977	7,160	188,220	608,163	62,768	49,165	215	15,046	2,068	
Bulk Delivery CP	BCP4	1,661,784	728,977	7,160	188,220	608,163	62,768	49,165	215	15,046	2,068	
Total Sytem CP	DCP4	1,661,784	728,977	7,160	188,220	608,163	62,768	49,165	215	15,046	2,068	
12 CP												
Transformation CP	TCP12	4,663,689	1,965,384	18,411	569,379	1,716,035	188,993	161,643	590	37,014	6,240	
Bulk Delivery CP	BCP12	4,663,689	1,965,384	18,411	569,379	1,716,035	188,993	161,643	590	37,014	6,240	
Total Sytem CP	DCP12	4,556,674	1,893,862	18,754	664,908	1,578,233	188,636	168,436	590	37,014	6,240	
NON CO. INCIDENT PEAK												
1 NCP												
Classification NCP from Load Data Provider		DNCP1	495,870	210,982	2,655	67,201	170,620	20,472	18,160	118	5,068	592
Primary NCP		PNCP1	495,870	210,982	2,655	67,201	170,620	20,472	18,160	118	5,068	592
Line Transformer NCP		LTNCP1	346,228	210,982	2,655	67,201	59,610			118	5,068	592
Secondary NCP		SNCP1	346,228	210,982	2,655	67,201	59,610			118	5,068	592
4 NCP												
Classification NCP from Load Data Provider		DNCP4	1,933,904	819,451	8,711	254,580	677,574	80,091	70,616	467	20,097	2,316
Primary NCP		PNCP4	1,933,904	819,451	8,711	254,580	677,574	80,091	70,616	467	20,097	2,316
Line Transformer NCP		LTNCP4	1,458,556	819,451	8,711	254,580	352,933			467	20,097	2,316
Secondary NCP		SNCP4	1,458,556	819,451	8,711	254,580	352,933			467	20,097	2,316
12 NCP												
Classification NCP from Load Data Provider		DNCP12	5,233,107	2,185,057	21,239	674,534	1,857,826	234,406	192,435	1,131	59,888	6,590
Primary NCP		PNCP12	5,233,107	2,185,057	21,239	674,534	1,857,826	234,406	192,435	1,131	59,888	6,590
Line Transformer NCP		LTNCP12	3,875,279	2,185,057	21,239	674,534	926,839			1,131	59,888	6,590
Secondary NCP		SNCP12	3,875,279	2,185,057	21,239	674,534	926,839			1,131	59,888	6,590



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Cost Allocation Sheet O-1-Revenue to Cost



2014 Cost Allocation Model

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Sheet 01 Revenue to Cost Summary Worksheet - Final Run

Instructions:

Please see the first tab in this workbook for detailed instructions

Class Revenue, Cost Analysis, and Return on Rate Base

Rate Base Assets	Total	1 Residential	2 Residential Seasonal	3 GS <50	4 GS>50-Regular	5 GS >50-Intermediate	6 Large Use >5MW	7 Sentinel	8 Street Light	9 Unmetered Scattered Load
Distribution Revenue at Existing Rates	\$49,080,552	\$31,102,285	\$833,423	\$6,823,873	\$8,742,229	\$532,404	\$393,169	\$36,942	\$448,694	\$167,532
Miscellaneous Revenue (mi)	\$3,767,464	\$2,559,277	\$65,443	\$356,691	\$660,238	\$44,568	\$38,387	\$4,618	\$28,667	\$9,575
Miscellaneous Revenue Input equals Output										
Total Revenue at Existing Rates	\$52,848,016	\$33,661,562	\$898,867	\$7,180,565	\$9,402,467	\$576,971	\$431,556	\$41,561	\$477,361	\$177,107
Factor required to recover deficiency (1 + D)	1.0983									
Distribution Revenue at Status Quo Rates	\$53,903,936	\$34,158,858	\$915,328	\$7,494,489	\$9,601,370	\$584,726	\$431,807	\$40,573	\$492,790	\$183,996
Miscellaneous Revenue (mi)	\$3,767,464	\$2,559,277	\$65,443	\$356,691	\$660,238	\$44,568	\$38,387	\$4,618	\$28,667	\$9,575
Total Revenue at Status Quo Rates	\$57,671,400	\$36,718,134	\$980,771	\$7,851,180	\$10,261,608	\$629,293	\$470,194	\$45,191	\$521,457	\$193,571
Expenses										
Distribution Costs (di)	\$9,111,971	\$5,050,894	\$219,766	\$1,080,083	\$2,156,829	\$227,613	\$200,676	\$10,511	\$141,943	\$23,655
Customer Related Costs (cu)	\$8,360,063	\$6,732,603	\$97,465	\$669,750	\$802,684	\$12,277	\$4,911	\$12,257	\$4,223	\$23,894
General and Administration (ad)	\$10,811,658	\$7,276,771	\$197,231	\$1,086,231	\$1,838,459	\$149,659	\$128,332	\$14,054	\$91,544	\$29,376
Depreciation and Amortization (dep)	\$11,367,283	\$6,784,382	\$269,638	\$1,398,684	\$2,312,906	\$215,756	\$188,195	\$11,912	\$159,414	\$26,395
PILs (INPUT)	\$1,480,054	\$842,297	\$33,678	\$177,683	\$334,115	\$34,968	\$30,667	\$1,595	\$21,502	\$3,548
Interest	\$7,443,795	\$4,236,257	\$169,381	\$893,640	\$1,680,398	\$175,869	\$154,236	\$8,023	\$108,145	\$17,846
Total Expenses	\$48,574,824	\$30,923,205	\$987,159	\$5,306,071	\$9,175,391	\$816,143	\$707,017	\$58,352	\$526,772	\$124,714
Direct Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Allocated Net Income (NI)	\$9,096,576	\$5,176,853	\$206,990	\$1,092,059	\$2,053,505	\$214,918	\$188,482	\$9,804	\$132,157	\$21,809
Revenue Requirement (includes NI)	\$57,671,400	\$36,100,058	\$1,194,149	\$6,398,130	\$11,178,896	\$1,031,061	\$895,498	\$68,156	\$658,929	\$146,523
Revenue Requirement Input equals Output										
Rate Base Calculation										
Net Assets										
Distribution Plant - Gross	\$447,900,224	\$263,514,829	\$10,724,989	\$53,979,173	\$94,297,151	\$9,073,338	\$7,964,369	\$507,294	\$6,719,114	\$1,119,966
General Plant - Gross	\$77,626,129	\$45,726,110	\$1,824,313	\$9,310,385	\$16,329,193	\$1,608,840	\$1,411,897	\$85,966	\$1,139,544	\$189,881
Accumulated Depreciation	(\$247,274,754)	(\$145,335,263)	(\$6,010,034)	(\$29,916,395)	(\$52,094,195)	(\$4,915,275)	(\$4,315,308)	(\$285,113)	(\$3,773,953)	(\$629,218)
Capital Contribution	(\$68,120,974)	(\$43,748,531)	(\$1,736,413)	(\$8,149,861)	(\$11,537,302)	(\$885,447)	(\$779,602)	(\$80,823)	(\$1,027,541)	(\$175,454)
Total Net Plant	\$210,130,625	\$120,157,145	\$4,802,856	\$25,223,302	\$46,994,847	\$4,881,457	\$4,281,357	\$227,323	\$3,057,164	\$505,174
Directly Allocated Net Fixed Assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cost of Power (COP)	\$284,142,396	\$107,233,024	\$1,007,785	\$33,158,399	\$113,090,203	\$14,001,006	\$12,723,511	\$41,583	\$2,388,164	\$498,723
OM&A Expenses	\$28,283,692	\$19,060,269	\$514,462	\$2,836,063	\$4,797,972	\$389,550	\$333,919	\$36,822	\$237,711	\$76,925
Directly Allocated Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$312,426,088	\$126,293,293	\$1,522,247	\$35,994,462	\$117,888,175	\$14,390,555	\$13,057,430	\$78,404	\$2,625,875	\$575,647
Working Capital	\$43,114,800	\$17,428,474	\$210,070	\$4,967,236	\$16,268,568	\$1,985,897	\$1,801,925	\$10,820	\$362,371	\$79,439
Total Rate Base	\$253,245,425	\$137,585,619	\$5,012,926	\$30,190,538	\$63,263,415	\$6,867,353	\$6,083,282	\$238,143	\$3,419,535	\$584,613
Rate Base Input equals Output										
Equity Component of Rate Base	\$101,298,170	\$55,034,248	\$2,005,170	\$12,076,215	\$25,305,366	\$2,746,941	\$2,433,313	\$95,257	\$1,367,814	\$233,845
Net Income on Allocated Assets	\$9,096,576	\$5,794,929	(\$6,388)	\$2,545,109	\$1,136,217	(\$186,850)	(\$236,822)	(\$13,161)	(\$5,315)	\$68,857
Net Income on Direct Allocation Assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Income	\$9,096,576	\$5,794,929	(\$6,388)	\$2,545,109	\$1,136,217	(\$186,850)	(\$236,822)	(\$13,161)	(\$5,315)	\$68,857
RATIOS ANALYSIS										
REVENUE TO EXPENSES STATUS QUO%	100.00%	101.71%	82.13%	122.71%	91.79%	61.03%	52.51%	66.31%	79.14%	132.11%
EXISTING REVENUE MINUS ALLOCATED COSTS	(\$4,823,384)	(\$2,438,497)	(\$295,282)	\$782,434	(\$1,776,429)	(\$454,089)	(\$463,943)	(\$26,595)	(\$181,567)	\$30,584
Deficiency Input equals Output										
STATUS QUO REVENUE MINUS ALLOCATED COSTS	\$0	\$618,076	(\$213,378)	\$1,453,049	(\$917,288)	(\$401,768)	(\$425,304)	(\$22,965)	(\$137,472)	\$47,049
RETURN ON EQUITY COMPONENT OF RATE BASE	8.98%	10.53%	-0.32%	21.08%	4.49%	-6.80%	-9.73%	-13.82%	-0.39%	29.45%



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Cost Allocation Sheet O-2-Fixed Charge



Sheet 02 Monthly Fixed Charge Min. & Max. Worksheet - Final Run

Output sheet showing minimum and maximum level for Monthly Fixed Charge

Summary

Customer Unit Cost per month - Avoided Cost

Customer Unit Cost per month - Directly Related

Customer Unit Cost per month - Minimum System
with PLCC Adjustment

Existing Approved Fixed Charge

[illegible]



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Letter from PowerStream-Embedded Distributor

July 26, 2013

Mr. George Armstrong
Vice President, Corporate Services
Veridian Connection Inc.
55 Taunton Road East
Ajax, Ontario L1T 3V3

George,

**Re: Veridian Host Distribution Charges, Embedded Supply Point to
PowerStream on the York Durham Town line, Account # 97039341-00**

Further to our recent email correspondence, I understand that as a part of its 2014 Cost of Service Rate Application, Veridian would like to propose the continued application of General Service class distribution rates for the host distribution services provided to PowerStream at its supply point located on the York Durham Town Line. We have considered this proposal, and are fully in support.

As you know, the provision of host distribution services at this supply point are required only until such time that PowerStream has completed an extension of its distribution feeder to this location. PowerStream agrees with Veridian's assessment that the establishment of a separate rate class is not warranted for this account, given the transitory nature of the supply arrangement.

We trust this is satisfactory, but if there any outstanding matters, please contact the undersigned.

Yours truly,



Colin Macdonald
Vice President, Rates and Regulatory Affairs

cc. Shelly Cunningham, SVP, Engineering Services



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Appendix 2-Q Cost of Serving Embedded Distributor(s)

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Date: 31-Oct-13

Appendix 2-Q Cost of Serving Embedded Distributor(s)

To be completed by Host Distributors ONLY*
(Not required if Host Distributor has an Embedded Distributor rate class, i.e. a separate row in Appendix 2-P.)

Proposed Rate Class for Billing General Service > 50 kW

Host's Distribution Facilities used by Embedded Distributor(s)

(1)	(2)	(3)	(4)	(5)	(6) = '(3) + (4)
Asset Class	Total OM&A costs associated with asset class	Original cost of asset class	Accumulated amortization of asset class	Annual amortization of asset class	Net Book Value of asset class
Totals for Host Distributor:	(\$)	(\$)	(\$)	(\$)	
Distribution Stations	\$ -				\$ -
Low Voltage Line	\$ -	\$ 100,000.00	-\$ 6,250.00	-\$ 2,500.00	\$ 93,750.00
LV Line category # 2 (if applicable)					\$ -
TS (owned by host)					\$ -
add rows if necessary...					\$ -
					\$ -
					\$ -

(1)	(7)	(8)	(9)	(10)	(11)
Asset Class	Total line length or station capacity in asset class	Line length or capacity required to provide LV service to Embedded Distributor(s)	Annual total demand on station/line providing LV services (sum of 12 monthly peaks)	Annual billed Embedded Distributor demand on station/line providing LV services	Embedded Distributor(s)' Responsibility Share
Embedded Distributor's share:	kW or kVA; km	kW or kVA; km	kW or kVA	kW or kVA	percent
Distribution Stations					0.00%
Low Voltage Line	800.00	800.00	9,600	504	5.25%
LV Line # 2 (if applicable)					0.00%
TS (owned by host)					0.00%

add rows if necessary					0.00%
-----------------------	--	--	--	--	-------

(1)	(12)	(12a)	(13)	(14)	(15)	(16)
Asset Class	Return on Assets used to Provide LV services	Taxes/PILs	Annual amortization on assets used to provide LV services	OM&A costs with burden associated with assets used to provide LV services	Total annual cost associated with assets used to provide LV services	Monthly cost associated with the delivery of LV services
	(\$)	(\$)	(\$)	(\$)	(\$)	\$/kW or \$/kVA
Distribution Stations	\$ -	\$ -	\$ -	\$ -	\$ -	0.00
Low Voltage Line	\$ 321.2804	\$ 63.7053	\$ 131.17	\$ -	\$ 253.8112	-0.26
LV Line # 2 (if applicable)	\$ -	\$ -	\$ -	\$ -	\$ -	0.00
TS (owned by host)	\$ -	\$ -	\$ -	\$ -	\$ -	0.00
add rows if necessary	\$ -	\$ -	\$ -	\$ -	\$ -	0.00
Total					\$ 253.8112	-0.26

(17)	(18) Capital Structure (%)	(19) Cost Rate (%)	(20)	(21) (%)
Long-Term Debt	56.00%	5.10%	Weighted Average Cost of Capital	6.53%
Short-term Debt	4.00%	2.07%		
Common Equity	40.00%	8.98%	Tax/PILs Rate	26.5%
Preferred Shares				
Total	100.00%		Working Capital Allowance Factor	13.8%



File Number:EB-2013-0174

Exhibit: 7
Tab: 1
Schedule: 1

Date Filed:October 31, 2013

Attachment 8 of 8

ERA – Veridian 2014 CA Study

Original



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Veridian 2014 CA Study

A Report Prepared by
Elenchus Research Associates Inc.

On Behalf of
Veridian



25/09/2013

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1 INTRODUCTION

Veridian Connections Inc (“Veridian”) has prepared its 2014 EDR Application as a cost of service rate application based on a forward test year. The relevant filing requirements for this Application are set out in Chapter 2 of the July 17, 2013 update to the document entitled *Ontario Energy Board, Filing Requirements for Electricity Transmission and Distribution Applications* (“Filing Requirements”).

Section 2.10 of the Filing Requirements sets out the expectations of the Board with respect to Exhibit 7: Cost Allocation. The Filing Requirements on page 39 state:

A completed cost allocation study using the Board approved methodology or a comparable model must be filed. This filing must reflect future loads and costs and be supported by appropriate explanations and live Excel spreadsheets. The most current update of the model (version 3.1) will be available on the Board’s web site.

Veridian asked Elenchus Research Associated (Elenchus)¹ to assist it by preparing an appropriate cost allocation study for its 2014 cost of service rate application. In addressing this issue, Elenchus was guided by the Filing Requirements and the November 28, 2007 *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667) (“CA Application Report”) which “sets out the Board’s policies in relation to specific cost allocation matters for electricity distributors”.²

The CA Application Report observes at page 2 that:

The Board is cognizant of factors that currently limit or otherwise affect the ability or desirability of moving immediately to a cost allocation framework that might, from a theoretical perspective, be considered the ideal. These influencing factors include data quality issues and limited modelling experience, and are discussed in greater detail in section 2.3 of this Report.

The “influencing factors” discussed in section 2.3 of the report are:

- **Quality of the data:** The Board notes “that accounting and load data can be improved.” (p. 5)
- **Limited modelling experience:** The Board observed that “the cost allocation model is complex, and the data required for the model was not always readily available for modelling.” (p. 6)

¹ John Todd, President of Elenchus Research Associates, was the lead consultant for the development and implementation of the methodology used by Veridian and documented in this report. John Todd’s curriculum vitae is available at www.elenchus.ca.

² Ontario Energy Board, *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667), November 28, 2007, page 1.

- **Status of current rate classes:** The Board points out that “Any changes in customer classification or load data could have a significant impact on future cost allocation studies” (p. 6).
- **Managing the movement of rates closer to allocated costs:** The Board notes:

The Board considers it appropriate to avoid premature movement of rates in circumstances where subsequent applications of the model or changes in circumstances could lead to a directionally different movement. Rate instability of this nature is confusing to consumers, frustrates their energy cost planning and undermines their confidence in the rate making process. (p. 6)

In utilizing the Board’s cost allocation model for Veridian’s 2014 cost allocation study, Elenchus has been cognizant of these “influencing factors” as they apply to Veridian.

1.1 PURPOSE OF THE COST ALLOCATION STUDY

In the context of a cost of service rate application based on a 2014 forward test year, the primary purpose of the cost allocation study (“CA Study”) is to determine the proportions of a distributor’s total revenue requirement that are the “responsibility” of each rate class.

In addition, cost allocation studies provide revenue to cost ratios for each customer class that can be examined to ensure that they generally fall within the Board-specified ranges (or move toward those ranges where appropriate to mitigate rate impacts) and generally are not moving away from 100%.

Conceptually, the desired results can be achieved in either of two ways.

- **Prospective Year CA Study:** A cost allocation study for the 2014 test year can be based on an allocation of the 2014 test year costs (i.e., the 2014 forecast revenue requirement) to the various customer classes using allocators that are based on the forecast class loads (kW and kWh) by class, customer counts, etc. By definition, this approach will result in a total revenue to cost ratio at proposed rates of 100%. Assuming there is a revenue deficiency for the test year, the total revenue to cost ratio at current rates will be somewhat below 100%.
- **Historic Year CA Study:** As an alternative, an historic year cost allocation study can be prepared that determines the proportion of costs allocated to each class for the most recent historic year. In the case, the CA Study will rely on actual

costs, weather adjusted loads, customer counts, etc. that are not affected by forecast errors. Assuming the costs and loads are relatively stable so that the proportionate cost responsibility of each rate class in the historic year is a reasonable proxy for the 2014 test year cost responsibility, the resulting proportionate cost responsibilities can be used to allocate the 2014 revenue requirement to the various classes.

The Veridian CA Study uses the first of these methods in order to ensure compliance with the Board's direction in the Filing Requirements that the CA Study should "reflect future loads and cost". Relying on a Prospective Year CA Study is also appropriate at this time since the Ontario economy has suffered over the past number of years and, as a result, many distributors have experienced significant changes in the load profiles of their customer classes. These changes could have a significant impact on the allocation of costs to the classes and the resulting revenue to cost ratios. This approach implicitly assumes that the relative loads of customer classes are more likely to reflect 2014 loads than 2012 loads during the next IRM cycle.

1.2 VERIDIAN'S 2010 COST ALLOCATION INFORMATION FILING

The last cost allocation studies filed by Veridian were in 2010 in Proceeding EB-2009-0140 where one cost allocation study was prepared for the Veridian Main service territory, and another was prepared for the Veridian Gravenhurst service territory. Both studies were based on the respective 2006 Informational Filings, with an adjustment to the main service territory for the reclassification of customers. One unified 2014 model was performed in accordance with the internal documentation in the v 3.1 Cost Allocation Model (CA Model).

Veridian's 2010 CAIF relied on the Board's 2006 Cost Allocation Model ("CA Model") and was prepared in accordance with the September 29, 2006 Board report entitled *Cost Allocation: Board Directions on Cost Allocation Methodology for Electricity Distributors* ("the Directions"), the subsequent (November 15, 2006) *Cost Allocation Informational Filing Guidelines for Electricity Distributors* ("the Guidelines"), and the *Cost Allocation Review: User Instruction for the Cost Allocation Model for Electricity Distributors* ("the Instructions").

1.3 STRUCTURE OF THE REPORT

The remainder of this report is divided into three additional sections. Section 2 provides an overview of the Veridian CA Study, explaining the model run included in the study, as well as the load and cost information used for the run. Section 3 explains the

methodology used to develop the 2014 Veridian model by documenting each step taken in completing the model. Section 4 summarizes the results of the Veridian CA Study, showing the class revenue requirements and revenue to cost ratios generated by the CA model.

2 OVERVIEW OF THE VERIDIAN 2014 CA STUDY

2.1 RATE HARMONIZATION

2.1.1 NEW CLASS STRUCTURE

Veridian is proposing to harmonize the Main and Gravenhurst Service territories. Under the harmonization, the class structure is updated as follows:

Former Main	Former Gravenhurst	Harmonized
Residential	Residential	Residential
-	Residential Suburban	
-	Residential Seasonal	Residential Seasonal
GS < 50	GS < 50	GS < 50
GS > 50 Regular	GS > 50 Regular	GS > 50 Regular
GS > 50 Intermediate	-	GS > 50 Intermediate
Large Use	-	Large Use
Street Light	Street Light	Street Light
Sentinel	Sentinel	Sentinel
Unmetered Scattered Load	-	Unmetered Scattered Load

The Gravenhurst Residential and Residential Suburban rate classes were merged into a unified Residential service territory to be consistent with the Main service territory which already consists of both urban and suburban customers. Gravenhurst's Residential Seasonal customers remain a unique group in both service territories and the distinction has been maintained.

Gravenhurst GS > 50 customer class and Main GS > 50 customer class were merged while Intermediate and Large Use from Main remained as separate customer classes. There were no classes in the Gravenhurst service territory comparable to the Intermediate or Large Use rate classes in the Main service territory, and there were no customers that would have qualified for such a class if either had existed. Gravenhurst did not have an Unmetered Scattered Load class.

2.1.2 LOAD PROFILE HARMONIZATION

Using 2014 load forecasts prepared separately for all historic rate classes, an updated 2014 load profile was created for each. The updated 2014 load profiles were then summed for every hour in the year to arrive at the Harmonized 2014 load profiles. These resulting harmonized load profiles were then used in the derivation of coincident and non-coincident peak allocators.

2.1.3 FINANCIAL HARMONIZATION

Veridian has maintained only one set of financial records for its service territories, therefore, only one set of financial information, relating to the unified LDC is available. As a result, only one Cost Allocation model run was prepared.

2.2 SEASONAL RATE CLASS - DENSITY WEIGHTING FACTORS

Given the low density of the Residential Seasonal service territory and inherent higher costs to serve, weighting factors were initially introduced for this rate class as part of the Gravenhurst Hydro 2006 CAIF. The weighting factors which were part of the original Gravenhurst Hydro filing, were retained in the Veridian Gravenhurst filing in 2010 and are maintained in this application.

To accommodate this, four weighting factor entries were added to the worksheet “I5.2 Weighting Factors” for Poles, O/H Conductors, U/G Conductors, and Transformers. Residential Seasonal were assigned a weight of 4.0, 8.0, 2.1, and 4.0 respectively for those weighting factors while all other rate classes were assigned a weight of 1.0 for all of these weighting factors. Modifications were made to the following worksheets to add allocators based on the weighting factors: “O6 Source Data for E2”, “E2 Allocators”, and “E3 PLCC”.

The new weighting factors were selected on “E4 TB Allocation Details”. The Poles weighting factor is used in allocation of all costs related to 1830-Poles, Towers and Fixtures. The O/H Conductors weighting factor is used in the allocation of all costs related to account 1835-Overhead Conductors and Devices. The U/G Conductors weighting factor was used in the allocation of all costs related to account 1845-Underground Conductors and Devices. The Transformers weighting factor was applied to all costs related to account 1850-Line Transformers.

2.3 MODEL RUN INCLUDED IN THE VERIDIAN COST ALLOCATION STUDY

Section 2.10.3 of the updated Filing Requirements specifies that the third table in Appendix 2-P, “...includes the following information for each class” that should be provided based on:

- “The previously approved ratios most recently implemented by the distributor;
- “The ratios that would result from the most recent approved distribution rates and the distributor’s forecast of billing quantities in the test year, prorated

upwards or downwards (as applicable) to match the revenue requirement, expressed as a ratio with the class revenue requirements derived in the updated cost allocation model; and

- “The ratios that are proposed for the Test Year, which are the proposed class revenues, together with the updated cost allocation model” which is the appropriate 2014 model.

For clarity, the following designations are used.

- **VM-2010:** The Veridian Main 2010 revenue to cost ratios.
- **VG-2010:** The Veridian Gravenhurst 2010 revenue to cost ratios.
- **Veridian-2014:** The version 3.1 CA Model with 2014 loads, costs, and revenues.

2.4 LOAD AND CUSTOMER INFORMATION

The updated Filing Requirements specify that “This filing must reflect future loads and costs...” and “If updated load profiles are not available, the load profiles of the classes may be the same as those provided by Hydro One for use in the Informational Filing, scaled to match the load forecast as it relates to the respective rate classes”, (Section 2.10.1, p. 39)

The Veridian 2014 model has been prepared using the following load and load profile information:

- **Annual Loads (kW and kWh, as appropriate) and customer counts:** The 2014 CDM Adjusted load forecast and customer counts by class being used by Veridian in its application were also used for the 2014 CA models. Veridian’s load forecast was prepared by Elenchus.
- **Hourly load profile:** The hourly load profiles prepared by Hydro One for the 2006 CAIF was used for all classes except GS > 50 Intermediate and Large Use.

The hourly load profiles provided by Hydro One for all of the classes for the 2006 model were considered to be appropriate for use in the 2014 models for the following reasons.

1. Elenchus explored alternatives for updating the hourly load profiles by rate class comparable to the estimated load profiles that Hydro One prepared for the LDCs for their 2006 CA Models. Hydro One advised that they no longer have the capacity to

produce a significant number of LDC-specific hourly load profiles. As far as Elenchus is aware, no other entity has the necessary information and models to produce comparable quality hourly load profiles for Ontario LDCs. It therefore was not practical for distributors to update their hourly load profiles by class except in exceptional circumstances.

2. There would be little point in investing in updated load profiles without also investing in updated saturation surveys for the residential class in each service area. These are expensive and time consuming to undertake as they involve a survey of a statistically significant sample of customers.
3. With the widespread rollout of smart meters and the collection of smart meter data, Ontario distributors will have better hourly load profile by class data than the Hydro One estimates. Unless there is evidence of a significant change in circumstances, investing in new hourly load profile by class estimates would be a questionable use of ratepayer funds when superior hourly load profile information will be available in the future at minimal incremental cost.
4. Both time-of-use commodity pricing and changes to the design of distribution rates can be expected to alter the hourly load profiles of the affected classes.
5. The 2006 hourly load profiles were based on 2004 actual loads and updated hourly load profiles would be based on 2012 actual loads.

2.5 COST INFORMATION

As noted earlier, Elenchus' preferred methodology for preparing 2014 cost allocation models is to use the prospective 2014 test year as the basis for the CA Study, assuming appropriate expense and asset information is available for the 2014 test year. In the case of Veridian, the financial information for the forecast year has been prepared at the USoA level consistent with the level of detail embedded in the OEB's cost allocation model.³

³ Some information (i.e., meter counts and some amortization detail) that is used in the Board's CA Model is not explicitly forecasted for the test year. These values were estimated using scaling factors based on prior year ratios. For example, the ratio of meters to customers was assumed to be constant. The portion of the total costs accounted for in this manner was too small for any plausible estimation errors to have a significant impact on the test year revenue to cost ratios.

The revenue requirement value allocated within the Veridian Cost Allocation Study is the Year-End Net Fixed Assets Revenue Requirement as described in Exhibit 6-A. Year-End 2014 asset values have been used for all Gross Assets, Contributed Capital and Accumulated Amortization.

2.6 OBSERVED CHANGES IN COST STRUCTURE FROM PREVIOUS COST ALLOCATION

Veridian has had substantial changes to their cost structure since the previous rebasing. Table 1 outlines, at a high level, the changing structure of the costs.

Table 1: Revenue Requirement Composition, 2010 vs 2014

Expense Category	Main 2010		Gravenhurst 2010		2010 Total		Harmonized 2014	
	\$	%	\$	%	\$	%	\$	%
Distribution Costs	3,644,945	8.7	351,215	13.1	3,996,160	9.0	9,111,971	15.8
Customer Related Costs	8,583,402	20.5	622,716	23.2	9,206,118	20.6	8,360,063	14.5
General and Administration	6,052,974	14.4	475,970	17.7	6,528,945	14.6	10,811,658	18.7
Depreciation and Amortization	8,269,413	19.7	495,105	18.4	8,764,518	19.6	11,367,283	19.7
PILs	4,568,429	10.9	119,621	4.5	4,688,050	10.5	1,480,054	2.6
Interest	5,294,581	12.6	252,275	9.4	5,546,856	12.4	7,443,795	12.9
Net Income	5,513,750	13.2	370,690	13.8	5,884,440	13.2	9,096,576	15.8
Total	41,927,494	100	2,687,593	100	44,615,087	100	57,671,400	100

Since the Revenue Requirement of the Main service territory was over 15 times the revenue requirement of the Gravenhurst service territory in the last application, had the two service territories been combined in 2010, the total would have relatively closely resembled that of the Main service territory alone. One can then reasonably conclude that harmonization is not likely to have had a significant impact on customer classes which existed in only the Main service territory prior to Harmonization.

Since the last rebasing, Veridian has made significant investments in fixed assets. Table 2 outlines the impact to Rate Base. As can be seen in Table 1, this has increased all components related to the Net Assets, including Depreciation and Amortization, Interest, and Net Income. Distribution Costs have also significantly increased. Not related to the increased asset value, Customer Related Costs have decreased since 2010.

Table 2: Rate Base Composition, 2010 vs 2014

Expense Category	Main 2010		Gravenhurst 2010		2010 Total		Harmonized 2014	
	\$	%	\$	%	\$	%	\$	%
Net Assets	109,726,756	80.9	7,016,254	85.6	116,743,010	81.2	210,130,625	83.0
Working Capital	25,846,105	19.1	1,184,145	14.4	27,030,250	18.8	43,114,800	17.0
Rate Base	135,572,861	100	8,200,399	100	143,773,260	100	253,245,425	100

The changing composition of Revenue Requirement has impacts for the allocation of costs. Table 3 outlines the Revenue Requirement by class, broken into the major cost categories in Table 1. For greater clarity, Table 4 has presented each category as a percentage of the total revenue requirement for the class. Of particular note, Intermediate, Large Use, and Street Light customer classes are allocated relatively few Customer Related costs, and relatively more costs related to the Net Assets and Distribution Costs. More total Net Assets and Distribution Costs results in greater costs allocated to Intermediate, Large Use, and Street Light relative to all other classes.

2.7 OBSERVED CHANGES IN FIXED CHARGE FROM PREVIOUS COST ALLOCATION

Veridian's 2014 Cost Allocation model has generated fixed charges which are less than those produced by the 2010 Veridian Main Cost Allocation model for all large volume rate classes.

Looking first at the minimum fixed charge, this is based on the "Avoided Cost" which is calculated as all of the direct costs (all metering, billing, and collecting related) – less any allocated retail service revenues. The relative percentage of metering related costs allocated to large volume customer classes has decreased in Veridian's 2014 Cost Allocation model compared to 2010. The relatively higher costs of smart meters versus the legacy mechanical meters they replaced are now allocated to the Residential and GS < 50 classes. Conversely, meter costs allocated to the large volume customer classes are interval meters and have not seen significant changes in costs. As a result, a smaller share of the metering cost is now allocated to large volume customer classes. At the same time, Version 3.1 of the Cost Allocation Model used for Veridian's 2014 Cost Allocation allocates retail service revenues on the basis of OM&A while Version 1.2 of the Cost Allocation Model used in Veridian's 2010 Cost Allocation filings allocated this revenue based on Weighted Bills. This has the effect of allocating more revenue to large volume customers in the new version of the model. This further reduces the minimum fixed charges.

In both the Version 1.2 and Version 3.1 models, the "Directly Related" cost is calculated in a similar fashion to the "Avoided Cost", but includes General Plant costs allocated to

the class as a result of the meters allocation, and Admin and General costs allocated to the class as a result of the meter reading, billing, and collecting costs. The changes to the “Avoided Cost” method apply equally to the “Directly Related” method. Similarly, the “Minimum System with PLCC Adjustment” adds all costs related to serving a minimum system to the above, and is affected by the changes in the “Avoided Cost” calculation.

Expense Category	Total	Residential	Residential Seasonal	GS < 50	GS > 50	Intermediate	Large Use	Sentinel	Street Light	USL
Distribution Costs	9,111,971	5,050,894	219,766	1,080,083	2,156,829	227,613	200,676	10,511	141,943	23,655
Customer Related Costs	8,360,063	6,732,603	97,465	669,750	802,684	12,277	4,911	12,257	4,223	23,894
General and Administration	10,811,658	7,276,711	197,231	1,086,231	1,838,459	149,659	128,332	14,054	91,544	29,376
Depreciation and Amortization	11,367,283	6,784,382	269,638	1,398,684	2,312,906	215,756	188,195	11,912	159,414	26,395
PILs	1,480,054	842,297	33,678	177,683	334,115	34,968	30,667	1,595	21,502	3,548
Interest	7,443,795	4,236,257	169,381	893,640	1,680,398	175,869	154,236	8,023	108,145	17,846
Net Income	9,096,576	5,176,853	206,990	1,092,059	2,053,505	214,918	188,482	9,804	132,157	21,809
Total	57,671,400	36,100,058	1,194,149	6,398,130	11,178,896	1,031,061	895,498	68,156	658,929	146,523

[illegible]

3 VERIDIAN COST ALLOCATION STUDY METHODOLOGY

This section documents Elenchus' methodology for the Veridian Cost Allocation Study, the 2014 CA Model.

3.1 2014 VERIDIAN CA MODEL

3.1.1 HOURLY LOAD PROFILE (HONI FILE)

For the Veridian CAIF, HONI provided data files with three worksheets that were to be used as input to the 2006 CAIF:

- **Data Summary:** actual and weather normalized monthly kWh by class, disaggregated by weather sensitive and non-weather sensitive load for relevant classes.
- **Hourly Load Shape by Class:** GWh by class for each hour in 2004.
- **Input to Cost Allocation Model:** The 1CP, 4CP, 12CP, 1NCP, 4NCP, 12NCP allocators are derived from the hourly load profiles.

The Veridian hourly load shapes derived by Hydro One for the 2006 CAIF were not updated. However, the demand allocators derived by Hydro One for the 2006 CAIF were revised to reflect changes in the relative loads for the classes from 2004 to 2014. This was done by scaling the hourly load profiles of each class on the Hourly Load Shape by Class worksheet of the HONI file to levels consistent with the 2014 load forecast while maintaining the hourly load shapes.

For the Intermediate and Large User customer classes, 2012 actual interval hourly data was used.

3.1.2 DEMAND ALLOCATORS (HONI FILE)

The demand allocators used in the Veridian-2014 CA model were derived using the same methodology as Hydro One used for the 2006 file; however, they were re-determined using the forecast 2014 hourly load profiles resulting from the preceding step. Using the 2014 hourly load profiles by class, the 12 monthly coincident and non-coincident peaks for the rate classes were determined on the Hourly Load Shape by Rate Class worksheet. The allocators were then derived as follows.

- The 1, 4 and 12 NCP values for each class were calculated by selecting the peak in the year (1 NCP), summing the four highest monthly peaks (4 NCP) and summing the 12 monthly peaks for each class (12 NCP), respectively.
- The total 1, 4 and 12 NCP values are the totals of the corresponding class NCP values.
- The 1, 4 and 12 CP values for each class were derived by identifying the hour in each month when the coincident peak occurred and then selecting the peak in the year (1 CP), adding the demands during the four highest coincident peak hours (4 CP) and summing the demand for each class during the 12 monthly coincident peak hours (12 CP), respectively.
- The total 1, 4 and 12 CP values are the totals of the corresponding class CP values, which are the values used to identify the relevant coincident peak hours.

3.1.3 2014 DEMAND DATA (VERIDIAN-2014 MODEL)

The demand allocators derived in the updated Hydro One file as described in the preceding section were input at the appropriate cells at sheet I8 Demand Data of the 2014 Veridian CA Model. However, the Line Transformer and Secondary 1NCP, 4NCP and 12NCP values for GS > 50 Regular, GS>50 Intermediate and Large User customer classes are not equal to the full class NCP values since not all customers in these customer classes use these facilities. The Line Transformer and Secondary 1NCP, 4NCP and 12NCP values were therefore determined from the full load data NCP values using the ratio of values in the 2006 CA Model.

3.1.4 2014 CUSTOMER DATA (VERIDIAN-2014 MODEL)

The 30 year weather normalized kWh by rate class which was an input from the Hydro One file at Sheet I6 Customer Data row 27 in the 2006 CA model was replaced with the 2014 load forecast in the 2014 CA Model at Sheet I6.1 Revenue row 25. In addition, the demand data (kW) in rows 26, and 27 of Sheet I6.1 Revenue were replaced with the forecasted values.

The 2014 Distribution Revenue in row 39 was derived using the forecast demand (kW and kWh) and customer counts by rate class and the current rates.

3.1.5 2014 REVENUE TO COST RATIOS

Since Veridian is proposing to set rates that recover its full revenue requirement, the total revenue to cost ratio at proposed rates will be 100% in 2014. The 2014 total revenue to cost ratio at current rates is less than 100% by the amount of the total derived revenue deficiency. The revenue to cost ratios of the classes reflect the costs allocated to the classes based on the OEB CA Model methodology and the revenues that would be generated at current rates given the forecast demand (kW and kWh) and customer counts by rate class for 2014.

4 SUMMARY OF REVENUE TO COST RATIOS

The class revenue-to-cost ratios as determined in the Veridian cost allocation models are shown in Table 7, below.

Table 7: Revenue to Cost Ratios

Customer Class	VM-2010	VG-2010	Veridian-2014 Status Quo Rates	Board Target Range
Residential	98.04	106.80	101.71	85-115
Residential Seasonal	-	87.34	82.13	
Residential Suburban	-	61.96	-	
GS < 50 kW	120.71	139.07	122.71	80-120
GS > 50 kW Regular	98.47	186.65	91.71	80-120
GS > 50 kW Intermediate	74.21	-	61.03	80-120
Large User	80.65	-	52.51	85-115
Street Lighting	72.54	82.42	79.14	70-120
Sentinel Light	42.74	15.57	66.31	80-120
USL	96.97	-	132.11	80-120
Total	100.00	100.00	100.00	

The Veridian-2014 ratios (at Status Quo rates) reflect the impact of changes in throughput by class as well as changes in costs from 2010 through the 2014 forecast test year.

Table 8 presents the revenue responsibility (i.e., allocation of the total revenue requirement to the rate classes) in each of the models. This revenue responsibility is presented in both dollar and percentage terms.

Table 8: Revenue Responsibility by Rate Class

Customer Class	VM-2010		VG-2010		Veridian-2014	
	\$	%	\$	%	\$	%
Residential	26,995,509	60.5	829,101	30.8	36,100,058	62.6
Residential Seasonal	-	-	902,870	33.6	1,194,149	2.1
Residential Suburban	-	-	505,440	18.1	-	-
GS < 50 kW	5,119,965	11.5	265,290	9.9	6,398,130	11.1
GS > 50 kW Regular	7,976,139	17.9	174,483	6.5	11,178,896	19.4
GS > 50 kW Intermediate	223,416	0.5	-	-	1,031,061	1.8
Large User	855,989	1.9	-	-	895,498	1.6
Street Lighting	500,861	1.1	6,110	0.2	658,929	1.1
Sentinel Light	75,173	0.2	4,299	0.2	68,156	0.1
USL	180,443	0.4	-	-	146,523	0.3
Total	44,615,087	100.0	2,687,593	100.0	57,671,400	100.0

5 FIXED CHARGE RATES

The Veridian cost allocation model produced the following customer unit cost per month values:

Table 9: 2014 Customer Unit Cost per Month

Customer Class	Avoided Cost	Directly Related	Minimum System with PLCC ⁴ Adjustment
Residential	4.47	7.01	18.27
Residential Seasonal	4.37	6.93	38.82
GS < 50 kW	6.83	10.27	22.52
GS > 50 kW Regular	31.17	55.41	108.83
GS > 50 kW Intermediate	196.64	333.46	373.23
Large User	62.81	199.71	254.86
Street Lighting	-0.01	0.04	7.00
Sentinel Light	1.47	2.45	11.82
USL	1.46	2.44	10.30

In accordance with Board policy,⁵ the following boundary values would apply for the fixed monthly service charge:

Table 10: 2014 Fixed Charge Boundary Values

Customer Class	Cost Allocation		Main Existing Rate	Gravenhurst Existing Rate	Boundary Values	
	Low	High			Minimum	Maximum
Residential	4.47	18.27	11.23	10.11	4.47	18.27
Residential Seasonal	4.37	38.82	-	26.85	4.37	38.82
GS < 50 kW	6.83	22.52	13.88	10.00	6.83	22.52
GS > 50 kW Regular	31.17	108.83	136.80	104.05	31.17	136.80
GS > 50 kW Intermediate	196.64	373.23	5,415.56	-	196.64	5,415.56
Large User	62.81	254.86	8,135.28	-	62.81	8,135.28
Street Lighting	-0.01	7.00	0.66	0.43	-0.01	7.00
Sentinel Light	1.47	11.82	3.58	3.01	1.47	11.82
USL	1.46	10.30	7.59	-	1.46	10.30

⁴ PLCC: 'Peak Load Carrying Capacity'

⁵ Ontario Energy Board, *Report of the Board, Application of Cost Allocation for Electricity Distributors* (EB-2007-0667), November 28, 2007, pages 12-13



2014 Cost Allocation Update Results

The Board established target ranges of revenues-to-cost ratios for each rate class within its report, *Application of Cost Allocation for Electricity Distributors, November 28, 2007*. These ranges were updated in the *Review of Electricity Cost Allocation Policy: Report of the Board (EB-2010-0219), March 31, 2011*.

The Board indicated in its 2007 report that for the time being, it did not expect distributors to make changes to the MSC that would result in a charge that is greater than the ceiling as defined in the Cost Allocation Methodology and that where any distributor has MSC currently above, there would be no requirements for the distributor to make changes to their current monthly service charges to bring it to or below that level at this time.

Table 1 below provides the following:

- 1) 2010 Board Approved revenue-to-cost ratios for each of Veridian_Main and Veridian_Gravenhurst tariff-zones
- 2) The resulting 2014 CAS revenue-to-cost ratios on a harmonized basis
- 3) The proposed 2014 revenue-to-cost ratios
- 4) The Board Approved ranges



Date Filed: October 31, 2013

Table 1: Revenue-to-Cost Ratios - 2010 Approved to 2014 Proposed

Customer Class	Main 2010 Approved	Gravenhurst 2010 Approved	2014 CAS Ratios - at current rates	2014 Proposed CAS Ratios	Board Approved Range
Residential	98.55	108.69	101.71	101.29	85-115
Residential Suburban	N/A	61.68			
Residential Seasonal	N/A	87.09	82.13	93.95	85-115
General Service less than 50 kW	114.78	141.45	122.71	115.10	80-120
General Service 50 to 2,999 kW	99.22	172.53	91.79	91.79	80-120
General Service 3,000 to 4,999 kW	81.41	N/A	61.03	80.13	80-120
Large Use	87.73	N/A	52.51	85.55	85-115
Unmetered Scattered Load	97.42	N/A	132.11	116.90	80-120
Sentinel Lighting	56.53	30.02	66.31	93.77	80-120
Street Lighting	74.96	83.27	79.14	80.02	70-120

Note: The ratios highlighted in 2010 were starting points for a four year phase-in period of movement to within the Board Approved ranges

Highlighted cells in the column labelled '2014 CAS Ratios – at current rates' are those where the revenue-to-cost ratios resulting from the 2014 CAS did not fall within the Board Approved ranges.

The most noticeable differentials were within General Service 3,000 to 4,999 kW ("Intermediate Use"), Large Use, Unmetered Scattered Load and the Sentinel Light classes.

Veridian found in examining the results of the 2014 CAS that the significant increase in Net Fixed Assets from 2010 to 2014 increased, in relative proportion, the rate base related components of revenue requirement including depreciation and amortization, interest and net income. As well the proportion of operating costs related to distribution assets compared with customer related operating costs increased. These shifts in cost had the impact of increasing revenue requirement allocation to large volume/demand customers. More details of changes in



the cost structure and the impact in revenue requirement responsibility are provided in the ERA Report in Section 2.7 “Observed Changes in Cost Structure from Previous Cost Allocation”.

Revenue allocation adjustments were required for all of the above noted classes to bring the proposed revenue-to-cost ratios within the Board Approved Ranges. Minor adjustments were made for most classes in an attempt to balance overall shifts in classes and not move revenue-to-cost ratios away from unity.

Table 2 below provides a summary of the 2014 CAS Model results and the required distribution revenue responsibility reallocation.

Veridian does not propose any re-balancing of revenue responsibility for the years subsequent to the Test Year.

Table 2: Allocation of Total Revenue Responsibility by Class (Based on YE NFA Revenue Requirement)

Rate Class	Total Revenue Allocation 2014 CA Model at current rates	Allocated Revenue Offsets - 2014 CA Model	Dist'n Revenue Allocation 2014 CA Model at current rates	Distribution Revenue Reallocation	Distribution Revenue Allocation Proposed per Application
Residential	36,718,134	2,559,277	34,158,857	(150,865)	34,007,992
Residential Seasonal	980,771	65,443	915,328	141,189	1,056,517
General Service less than 50 kW	7,851,179	356,691	7,494,488	(486,976)	7,007,512
General Service 50 to 2,999 kW	10,261,608	660,238	9,601,370	0	9,601,370
General Service 3,000 to 4,999 kW	629,294	44,568	584,726	196,881	781,607
Large Use	470,194	38,387	431,807	295,896	727,703
Unmetered Scattered Load	193,571	9,575	183,996	(22,284)	161,712
Sentinel Lighting	45,191	4,618	40,573	18,721	59,294
Street Lighting	521,457	28,667	492,790	5,821	498,611
TOTAL	57,671,399	3,767,464	53,903,935	(1,617)	53,902,318



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Attachment 1 of 1

Appendix 2-P Cost Allocation

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Appendix 2-P Cost Allocation

Please complete the following four tables.

A) Allocated Costs

Classes	Costs Allocated from Previous Study	%	Costs Allocated in Test Year Study (Column 7A)	%
Residential	\$ 29,484,175	61.53%	\$ 36,100,058	62.60%
Residential Seasonal	\$ 851,387	1.78%	\$ 1,194,149	2.07%
GS < 50 kW	\$ 6,856,581	14.31%	\$ 6,398,130	11.09%
GS > 50 kW (or 50 kW < GS < xxx kW, if applicable)	\$ 9,008,441	18.80%	\$ 11,178,896	19.38%
GS 50 to 2,999 kW	\$ 205,021	0.43%	\$ 1,031,061	1.79%
Large Use	\$ 847,121	1.77%	\$ 895,498	1.55%
Unmetered Scattered Load (USL)	\$ 184,744	0.39%	\$ 146,523	0.25%
Sentinel Lighting	\$ 48,741	0.10%	\$ 68,156	0.12%
Street Lighting	\$ 429,320	0.90%	\$ 658,929	1.14%
		0.00%		0.00%
Embedded distributor class		0.00%		0.00%
Total	\$ 47,915,531	100.00%	\$ 57,671,400	100.00%

Notes

- Customer Classification - If proposed rate classes differ from those in place in the previous Cost Allocation study, modify the rate classes to match the current application as closely as possible.
- Host Distributors - Provide information on embedded distributor(s) as a separate class, if applicable. If embedded distributor(s) are billed as customers in a General Service class, include the allocated cost and revenue of the embedded distributor(s) in the applicable class. Also complete Appendix 2-Q.
- Class Revenue Requirements - If using the Board-issued model, in column 7A enter the results from Worksheet O-1, Revenue Requirement (row 40 in the 2013 model). This excludes costs in deferral and variance accounts. Note to Embedded Distributor(s), it also does not include Account 4750 - Low Voltage (LV) Costs.

B) Calculated Class Revenues

Classes (same as previous table)	Column 7B	Column 7C	Column 7D	Column 7E
	Load Forecast (LF) X current	L.F. X current approved rates X	LF X proposed rates	Miscellaneous Revenue
Residential	\$ 31,102,285	\$ 34,158,858	\$ 34,007,992	\$ 2,559,277
Residential Seasonal	\$ 833,423	\$ 915,328	\$ 1,056,517	\$ 65,443
GS < 50 kW	\$ 6,823,873	\$ 7,494,488	\$ 7,007,512	\$ 356,691
GS > 50 kW (or 50 kW < GS < xxx kW, if applicable)	\$ 8,742,229	\$ 9,601,370	\$ 9,601,370	\$ 660,238
GS 50 to 2,999 kW	\$ 532,404	\$ 584,726	\$ 781,607	\$ 44,568
Large Use	\$ 393,169	\$ 431,808	\$ 727,703	\$ 38,387
Unmetered Scattered Load (USL)	\$ 167,532	\$ 183,996	\$ 161,712	\$ 9,575
Sentinel Lighting	\$ 36,942	\$ 40,572	\$ 59,294	\$ 4,618
Street Lighting	\$ 448,695	\$ 492,790	\$ 498,611	\$ 28,667
Embedded distributor class				
Total	\$ 49,080,552	\$ 53,903,936	\$ 53,902,318	\$ 3,767,464

Notes:

- Columns 7B to 7D - LF means Load Forecast of Annual Billing Quantities (i.e. customers or connections X 12, (kWh or kW, as applicable). Revenue Quantities should be net of Transformer Ownership Allowance. Exclude revenue from rate adders and rate riders.
- Columns 7C and 7D - Column total in each column should equal the Base Revenue Requirement
- Columns 7C - The Board cost allocation model calculates "1+d" in worksheet O-1, cell C21. "d" is defined as Revenue Deficiency/Revenue at Current Rates.
- Columns 7E - If using the Board-issued Cost Allocation model, enter Miscellaneous Revenue as it appears in Worksheet O-1, row 19.

C) Rebalancing Revenue-to-Cost (R/C) Ratios

Class	Previously Approved Ratios	Status Quo Ratios	Proposed Ratios	Policy Range
	Most Recent Year: 2012	(7C + 7E) / (7A)	(7D + 7E) / (7A)	
	%	%	%	%
Residential	98.55	101.71	101.29	85 - 115
Residential Seasonal	87.09	82.13	93.95	80 - 120
GS < 50 kW	114.78	122.71	115.10	80 - 120
GS > 50 kW (or 50 kW < GS < xxx kW, if applicable)	99.22	91.79	91.79	80 - 120
GS 50 to 2,999 kW	81.41	61.03	80.13	85 - 115
Large Use	87.73	52.51	85.55	70 - 120
Unmetered Scattered Load (USL)	70.00	132.11	116.90	80 - 120
Sentinel Lighting	74.96	66.30	93.77	80 - 120
Street Lighting	97.42	79.14	80.02	
Embedded distributor class				

Notes

- Previously Approved Revenue-to-Cost Ratios - For most applicants, Most Recent Year would be the third year of the IRM 3 period, e.g. if the applicant rebased in 2009 with further adjustments over 2 years, the Most recent year is 2011. For applicants whose most recent rebasing year is 2006, the applicant should enter the ratios from their Informational Filing.
- Status Quo Ratios - The Board's updated Cost Allocation Model yields the Status Quo Ratios in Worksheet O-1. Status Quo means "Before Rebalancing".

D) Proposed Revenue-to-Cost Ratios

Class	Proposed Revenue-to-Cost Ratios			Policy Range
	2014	2015	2016	
	%	%	%	%
Residential	101.29			85 - 115
Residential Seasonal	93.95			80 - 120
GS < 50 kW	115.10			80 - 120
GS > 50 kW (or 50 kW < GS < xxx kW, if applicable)	91.79			80 - 120
GS 50 to 2,999 kW	80.13			85 - 115
Large Use	85.55			70 - 120
Unmetered Scattered Load (USL)	116.90			80 - 120
Sentinel Lighting	93.77			80 - 120
Street Lighting	80.02			0
				0
Embedded distributor class				

Note

- The applicant should complete Table D if it is applying for approval of a revenue to cost ratio in 2013 that is outside the Board's policy range for any customer class. Table (d) will show the information that the distributor would likely enter in the IRM model) in 2013. In 2014 Table (d), enter the planned ratios for the classes that will be 'Change' and 'No Change' in 2014 (in the current Revenue Cost Ratio Adjustment Workform, Worksheet C1.1 'Decision – Cost Revenue Adjustment', column d), and enter TBD for class(es) that will be entered as 'Rebalance'.