

OEB Staff Interrogatories

Ottawa River Power's 2019 IRM Application (EB-2018-0063)

Staff-1

Ref: IRM Rate Generator (Tabs 1, 11) and ICM model (Tabs 4, 10b, 11) (re: model inconsistencies)

Pre-amble

OEB staff identified some discrepancies in the information filed in the IRM rate generator model and ICM model submitted on September 25, 2018.

Questions

- a. For each item below from the IRM rate generator, please confirm accuracy of the following information noted below:

Tab 1 (Information Sheet)

		Version 2.0
Utility Name	Ottawa River Power Corporation	
Assigned EB Number	EB-2018-0063	
Name of Contact and Title	Jeffrey Roy, Chief Financial Officer	
Phone Number	613-732-3687 x227	
Email Address	jroy@orpowercorp.com	
We are applying for rates effective	Wednesday, May 1, 2019 +	
Rate-Setting Method	Annual IR Index	↙
Please indicate in which Rate Year the Group 1 accounts were last cleared ¹	2015	↙
Please indicate the last Cost of Service Re-Basing Year	2015	↙

- a. **Rate setting method:** should be “Price Cap Index” rather than “Annual Index IR” as filed
Agreed
- b. **Last rate year in which Group 1 accounts were last cleared:** should be “2016” rather than “2015) as filed
Agreed

- c. **Last cost of service rebasing year:** should be “2016” rather than “2015” as filed
Agreed

Tab 11 (RTSR – UTRs & Sub-Tx)

If needed, add extra host here. (!)	Unit	2017	2018	2019
Rate Description		Rate	Rate	Rate
Network Service Rate	kW	\$ 2.86	\$ 2.86	\$ 2.86
Line Connection Service Rate	kW			
Transformation Connection Service Rate	kW			
Both Line and Transformation Connection Service Rate	kW	\$ -	\$ -	\$ -

- d. **Header “If needed, add extra host here”:** should show “Brookfield Power”.
Agreed

If this is confirmed, OEB staff will update this information on the revised version of the IRM rate generator model, as this cell has been locked.

- b. For each item reproduced from the ICM model, please indicate whether the following changes should be made:

Tab 4 (Growth Factor – Num_Calc1)

Rate Class	Units	2017 Actual Distribution Demand		
		Billed Customers or Connections	Billed kWh	Billed kW (if applicable)
RESIDENTIAL	\$/kWh	9,676	74,039,950	
GENERAL SERVICE LESS THAN 50 kW	\$/kWh	1,283	28,817,166	
GENERAL SERVICE 50 TO 4,999 KW	\$/kW	150		218,712
STREET LIGHTING	\$/kW	2,838		3,609
SENTINEL LIGHTING	\$/kW	231		545
UNMETERED SCATTERED LOAD	\$/kWh	20	611,520	

Rate Class	Current Approved Distribution Rates		
	Monthly Service Charge	Distribution Volumetric Rate kWh	Distribution Volumetric Rate kW
RESIDENTIAL	16.47	0.0099	0.0000
GENERAL SERVICE LESS THAN 50 kW	22.37	0.0127	0.0000
GENERAL SERVICE 50 TO 4,999 KW	84.18	0.0000	3.4865
STREET LIGHTING	2.37	0.0000	12.9781
SENTINEL LIGHTING	2.92	0.0000	9.0478
UNMETERED SCATTERED LOAD	10.29	0.0035	0.0000

- i. **# of connections for unmetered scattered load:** should be “88” as per 2017 yearbook statistics rather than “20” from the last cost of service application

Ottawa River Power agrees that the number of connections for unmetered scattered load should be 88 and has revised the ICM model.

- ii. **Current “monthly service charge” and “distribution volumetric rates (kWh and kW)”** boxed in green above do not reflect the 2018 approved MFC as per page 9 of IRM application

Ottawa River Power incorrectly entered the 2017 rates and not the 2018 rates. This has been revised in the ICM model.

Tab 11 (Incremental Capital Adj)

Grossed up Taxes/PILs			
Regulatory Taxable Income	O	\$ 61,185	T
Add Back Amortization Expense (Prorated to Eligible Incremental Capital)	S	\$ 35,478	U
Deduct CCA (Prorated to Eligible Incremental Capital)		\$ 127,060	V
Incremental Taxable Income		<u>-\$ 30,397</u>	W = T + U - V
Current Tax Rate	X	26.5%	
Taxes/PILs Before Gross Up		-\$ 8,055	Y = W * X
Grossed-Up Taxes/PILs		-\$ 10,960	Z = Y / (1 - X)

- iii. **Current tax rate:** should show “19.5%” approved from the last cost of service application rather than using the default tax rate of 26.5%

Ottawa River Power corrected the tax rate to 19.5% on Tab 11 of the ICM.

Tab 10b (Proposed ACM ICM Projects)

	E	F	G	H	I	J	K	L	
53									
54			\$ 1,017,620			\$ 1,017,828		\$	
55									
56			\$ 228,330			\$ 1,682,172		\$	
57									
58	Year 1			Year 2			Year 3		
59	2017			2018			2019		
60	Amortization Expense	CCA	Proposed ACM/ICM	Amortization Expense	CCA	Proposed ACM/ICM	Amortization Expense	CCA	P
61	\$ -	\$ -	\$ 87,000			\$ -			\$
62	\$ -		\$ -			\$ 1,698,850	\$ 35,830	\$ 128,320	\$
63			\$ -			\$ -			\$
64			\$ -			\$ -			\$
65			\$ -			\$ -			\$
66			\$ -			\$ -			\$
67			\$ -			\$ -			\$
68			\$ -			\$ -			\$
69			\$ -			\$ -			\$
70			\$ -			\$ -			\$

- iv. **Year 3 amortization expense:** Based on the amortization expense of \$35,830/year, this indicates a 47 year useful life of the asset. Please confirm whether this is consistent with the service life of power assets that were approved in the last rebasing application.

Ottawa River Power has recalculated the amortization expense to be \$40,708 and the CCA expense to be \$141,318. With \$1,698,850 of depreciable assets this equates to a 41 year useful life of the asset.

- c. Please update the IRM rate generator and ICM models, based on changes made in response to the above interrogatories. (Note: when updating the ICM model, please “enable content” in the ICM workbook, and click on each tab in sequential order from the first to last tab in order to have all changes reflected in the ICM rate riders.)

The IRM rate generator and ICM models have been revised.

Staff-2

Ref: 2018 Decision and Order, EB-2017-0070, p. 6 (re: Group 1 DVA review results)

Pre-amble

In section 9 of the 2018 IRM decision, the OEB stated this finding as follows:

To ensure the accuracy of the balances, **Ottawa River is directed to undertake a review of all of its Group 1 balances prior to applying for disposition. The OEB expects Ottawa River Power to perform a more detailed analysis on its Group 1 account balances to provide the OEB with a clearer understanding of how the balances in the accounts were determined.** The evidence should clearly indicate how Ottawa River Power derived its preliminary RPP settlement figures, and any subsequent RPP settlement true-up adjustments, to ensure

adherence to the rules and guidelines outlined in the Accounting Procedures Handbook. The methodology and data used to appropriately allocate commodity costs between different classes of ratepayers, namely RPP and non-RPP consumers, should also be clearly documented.

(emphasis added)

Questions

- a. Please provide a copy of a report detailing the results of the review of Ottawa River Power's Group 1 DVA balances.

No report is available. Ottawa River Power Corporation has undertaken an analysis on Group 1 DVA balances which may be found at Appendices A, B, C, D, E and F. The balance remaining under the Smart Meter Entity was deemed not material and no analysis was undertaken.

- b. If a report is not available, please provide the analysis that was undertaken in accordance with section 9 of the 2018 IRM Decision referenced above, and the outcomes of the review of Group 1 DVA balances.

See appendices A, B, C, D, E and F.

The analysis of Appendix A – Low Voltage is detailed in the response to OEB Staff Interrogatory Question 15.

Appendix B analyzes the variance in Account 1589. The analysis compares the amount of Global Adjustment collected from customers per Ottawa River Power Corporation's general ledger against the Global Adjustment figure settled with Hydro One for customers subject to the GA charge. The difference represents the variance between the 1st estimate used to charge customers and the actual global adjustment rate used in settlement based on actual consumption. The total resulting variance is \$157,796 owing to customers. Ottawa River Power Corporation also had adjustments for global adjustment on embedded generation of \$25,744 (See response to Staff IR – 14), a billing adjustment of \$59,952 in settled with Hydro One in 2018, a true-up of \$174,549 (See response to Staff IR – 11) also settled with Hydro One in 2018 and unbilled revenues of \$7,588 (See response to Staff IR – 12). ORPC also took into account the expect variances per the global adjustment workform and compared the expect variance account balance to actual. This analysis indicated that the 3 aforementioned adjustments

need to be included as an adjustment in the DVA continuity schedule. Ottawa River Power Corporation will be submitted a revised IRM to reflect these adjustments that were settled with Hydro One in 2018.

Appendix C details the variance in Account 1588. Appendix C – 1 represents ORPC's line loss calculation in comparison to the Approved Loss Factor for each year from 2015 to 2017. This represents an estimate as the average HOEP for the entire year was used. According to the calculations, the estimated difference resulting from line losses in comparison to the approved loss factor is \$26,827.11 owing back to customers. Appendix C – 2 details any settlement differences relating to Weight Average Price, the RPP Blocks and Time-of-Use Pricing. The tables indicates that there are little differences in the settlement of WAP and RPP Blocks however there were some larger variances in the TOU settlement. These variances were caused by two factors: unbilled revenues which are adjusted and settled with HONE after year end and a large difference in settlement mainly caused by variances in March and June 2015. The effect of unbilled revenues had an estimated impact on Account 1588 of \$326,313.46 receivable from customers whereas the impact of settlement differences had an estimated impact of \$181,388.73 owing to customers. Due to the uncovered settlement differences, Ottawa River Power Corporation is filing a revised DVA Continuity Schedule to reflect the adjustment related to settlement differences and the difference in unbilled. The difference in unbilled revenues should not be disposed as this balance was entirely settled in 2018.

Appendix D analyzes the difference in Wholesale Market charges which is composed of WMS and RRRP charges. As the analysis demonstrates, the balance in the WMS Variance Account of \$552,143.16 is substantially composed of differences in embedded generation purchases not subject to WMS or RRRP expenses. As a result, Ottawa River Power Corporation is paying significantly less in WMS than it is charging customers.

Appendix E and F analyze the variances in the Network and Connection charges. The analysis demonstrates that the variances are a result of Ottawa River Power Corporation being charged Network and Connection charges based on peak demand whereas ORPC customers are charged based on either kWh of kW which may cause variances due to the differences in measurement.

- c. Please detail the adjustments made by Ottawa River Power to its Group 1 DVA balances explaining each.

Ottawa River Power Corporation had adjustments to the Power and Global Adjustment Group 1 DVA balance. These adjustments resulted from the review of the composition of the variances in Account 1588 and Account 1589. Through this review, it was identified that Ottawa River Power Corporation had differences in settlements which resulted in total differences of \$181,388.73 owing back to customers from Account 1588. This was netted against unbilled revenues of \$326,313.46 that were settled in 2018. Account 1589 had \$260,245 in adjustments that were entirely settled in 2018 as explained above.

- d. What improvements or process changes have been made by Ottawa River Power as a result of its review and analysis of Group 1 DVA balances?

As a result of the review of Group 1 DVA Balances, Ottawa River Power Corporation reviews and analyzes settlement differences in a timelier manner in accordance with the OEB's May 23, 2017 document Guidance on Accounts 1588 and 1589. However, this process review will not be fully implemented until March 1, 2019. ORPC is currently in the process of implementing Calendar Month Billing for ease of settlement which is expected to be fully completed by March 1, 2019.

- e. Please explain the changes made to Ottawa River Power's RPP settlements and settlement true-up processes to ensure greater accuracy of its settlements and account balances in 1588 and 1589.

As noted in response d. above, as of 2018, Ottawa River Power Corporation reviews and analyzes settlement differences in a timelier manner in accordance with the OEB's May 23, 2017 document Guidance on Accounts 1588 and 1589. ORPC is also currently in the process of implementing Calendar Month Billing for ease of settlement.

Staff-3

Ref: Application, p. 12 (re: reconciliation procedures)

Pre-amble

In the current application, Ottawa River Power indicated that it “follows an approach using reconciliation procedures to ensure accuracy and completeness of the settlement submission process where possible.”

Questions

Please elaborate on this statement by explaining, in detail:

- a. What exactly is being reconciled?

See response in b.

- b. What is the timing of these reconciliations? Specifically, which periods are being reconciled and how frequently does this occur?

The “Global Adjustment Process” was initially submitted on September 25, 2018. The OEB then contacted ORPC to submit a more detailed explanation of processes surrounding Accounts 1588 and 1589 on which a response was submitted as evidence on November 16, 2018. Please consider the document entitled ‘Ottawa River_2018_Accounts_1588_1589_20181116’ as a replacement for the original process description.

Staff-4

Ref: EB-2017-0070 Interrogatory Responses to OEB Staff (re: Response to OEB Staff Interrogatory Question #4 b. iii)

Pre-amble

In the prior year’s application, Ottawa River Power stated in its response to Staff 4 b) iii:

“ORPC’s CIS does not collect actual RPP vs. non-RPP consumption for all customers (e.g. customers billed on a non-calendar month). An estimate is used where not available – there is no true-up.”

Questions

- a. Please confirm whether or not Ottawa River Power is now able to determine RPP consumption by month and non-RPP consumption by month in order to accurately record the Cost of Power, Global Adjustment Charges, and RPP Settlement amounts to Accounts 1588 and 1589?

Ottawa River Power Corporation has always been able to determine RPP and non-RPP consumption by month through a complicated and time-consuming process involving daily consumption settlement values and the proration of the GA rate based on these values. Ottawa River Power

Corporation required a true-up for 2016 based on variances between its estimate and the actual daily settlement values and GA rate charged to customers in each respective cycle. However, no such true-up was required in 2017 as Ottawa River Power Corporation moves to calendar month billing which reflects more accurate figures. This conversion is expected to be completed by March 1, 2019.

- b. If the above is confirmed, please indicate as of which date Ottawa River Power began determining RPP and Non-RPP consumption by calendar month for the purposes of allocating GA and for RPP Settlement?

As discussed above, Ottawa River Power Corporation has always been able to determine RPP and non-RPP consumption based on daily consumption settlement values.

- c. Please confirm that Ottawa River Power is able to perform RPP settlement true-ups, the frequency of such true-ups, and provide an explanation regarding its process for performing such true-ups.

ORPC was performing RPP settlement true-ups on an annual basis. It would annually compare the daily consumption settlement values versus the estimate used in settlement with Hydro One and adjust as required. These adjustments are posted in the fiscal year to which they pertain unless the fiscal year audit has been completed at which point the adjustment would be posted in the fiscal year that the required adjustment was identified. Since the OEB's letter dated May 23, 2017, Ottawa River Power Corporation has performed said true-ups in a timelier manner and is converting to calendar month billing which would eliminate the need for any true-ups.

Staff-5

Ref: "Questions on Accounts 1588 and 1589" document

Please confirm that Ottawa River Power has updated its RPP Settlement true-up procedures consistent with the OEB's May 23, 2017 letter regarding the Guidance on the Disposition of Accounts 1588 and 1589.

The OEB's letter dated May 23, 2017 provided guidance on the timeliness of RPP settlement true-up claims, the composition of Accounts 1588 and 1589 and the presentation of RPP settlement true-up claims on the DVA continuity schedule. ORPC can confirm that it has begun updating its processes in 2018 and will be completed by March 1, 2019 with the conversion to calendar month billing.

Staff-6

Ref: Questions on Accounts 1588 and 1589” document, paragraph 4 under “RSVA Power – Account 1588”, page 1 of 3, filed November 16, 2018 (re: a/c 1588 true-up)

Pre-amble

In the “Questions on Accounts 1588 and 1589” document submitted by Ottawa River Power, the following statement is made with respect to Account 1588:

“The difference between the price charged to the customer and the WAP [weighted average price] is settled with Hydro One. The only item remaining in Account 1588 is the difference between the hourly weighted average price paid for electricity and the billing period weighted average price charged to customers...In regards to the 2018 proceeding, there were no true-ups required in 2018 for months from 2017 and no principal or other adjustments in the DVA continuity schedule as ORPC settles using Hydro One purchases from one month prior to the settlement date.”

From a practical view, the only amounts that should remain in Account 1588 after all transactions are accounted for and true-up is the difference between commodity revenues received at the approved loss factors and actual system losses incurred (or unaccounted for energy). The total principal balance being requested for disposition in Account 1588 from 2015-2017 is \$125,555.

Questions

- a. Please provide an explanation, or quantitative analysis, that demonstrates that the \$125,555 principal balance being requested for disposition in Account 1588 is substantially represented by the difference between Ottawa River Power’s approved total loss factor (TLF) and its actual system losses, or unaccounted for energy.

Appendix C details the variance in Account 1588. Appendix C – 1 represents ORPC’s line loss calculation in comparison to the Approved Loss Factor for each year from 2015 to 2017. This represents an estimate as the average HOEP for the entire year was used. According to the calculations, the estimated difference resulting from line losses in comparison to the approved loss factor is \$26,827.11 owing back to customers. Appendix C – 2 details any settlement differences relating to Weight Average Price, the RPP Blocks and Time-of-Use Pricing. The tables indicates that there are little differences in the settlement of WAP and RPP Blocks however there were some larger variances in the TOU settlement. These variances were caused by two factors: unbilled revenues which are adjusted and settled with HONE after year end and a large difference in settlement mainly caused by variances in March and June 2015. The effect

of unbilled revenues had an estimated impact on Account 1588 of \$326,313.46 receivable from customers whereas the impact of settlement differences had an estimated impact of \$181,388.73 owing to customers. Due to the uncovered settlement differences, Ottawa River Power Corporation is filing a revised DVA Continuity Schedule to reflect the adjustment related to settlement differences and the difference in unbilled. The difference of \$7,457 is assumed to be line loss related as the line loss calculation is an estimate based on averages. After adjustments, Ottawa River Power Corporation is requesting a disposition of \$19,370 owing to customers.

- b. When Ottawa River Power retrieves RPP kWh consumption volume information for a particular calendar month, how does it determine the kWh consumption volumes for those customers that are not on calendar month billing cycles to ensure that the statistics it is using in settlement represent the full calendar month of RPP-related consumption?

In regards to RPP consumption reported during settlement to HONE for the purposes of Account 1588, Ottawa River Power Corporation will report only the consumption billed in a given month as the consumption is only used for statistical purposes. Any adjustments to the consumption figures, if required, will be reported in a subsequent settlement with Hydro One. However, as described in other interrogatory responses, ORPC will be converted to calendar month billing as of March 1, 2019 which will make the reporting of this consumption relatively accurate. This was ORPC's response to the need for increased accuracy in reporting and the OEB's letter dated May 23, 2017 on Account 1588 and 1589.

Staff-7

Ref: General question regarding true-up approaches based on responses to "Questions on Accounts 1588 and 1589" document, filed November 16, 2018

In booking journal entries for RPP Settlement (a credit or a charge) and Global Adjustment (a charge) from the monthly Hydro One invoice, please confirm which of the following approaches is used:

- a. RPP Settlement is booked into Account 1588. Global Adjustment is pro-rated based on RPP/non-RPP consumption and then booked into Account 1588 and 1589 respectively.
- b. Global Adjustment is booked into Account 1589. The portion of the RPP Settlement total equaling (RPP-related revenue less RPP-related HOEP) is

booked into Account 1588. The portion of RPP Settlement equaling RPP-related GA is credited into Account 1589.

- c. If another approach is used, please explain in detail. OEB staff is seeking clarification on the journal entries (debits or credits, and to which accounts) made by Ottawa River Power upon receipt of the Hydro One invoice.

Please refer to the example image below. When the monthly invoice is received from Hydro One approximately 3 weeks after the end of the month being invoiced, the entire ‘Global Adjustment – Volumetric’ charge is booked into Account 1589. The invoice received from Hydro One also includes ‘Adjustments’ which result from the settlement filed with Hydro One 2 business days after the end of the month invoiced for amounts billed to customers in said month. The line item entitled ‘Electricity Bill 100 Adj’ includes the Global Adjustment for RPP customers requested for reimbursement and the difference between the price charged to customers for electricity and the weighted average price of electricity. In the example below, the ‘Electricity Bill 100 Adj’ is composed of a credit of \$729,806.80 for Global Adjustment on RPP customers and a debit of \$425,734.33 for differences in prices charged to customers for electricity versus the weight average price. The credit for the GA is booked into Account 1589 whereas the debit for differences in electricity pricing is booked into Account 1588. This approach is essentially the same as suggested in Approach B listed above.

Your electricity charges	Electricity:	11,446,200 kWh	@ Spot Rate	\$174,304.25
	Global Adjustment - Volumetric			\$1,717,638.32
	Delivery			\$210,253.48
	Regulatory Charges			\$44,640.93
	HST (87086-5821-RT0001)			\$279,088.80
	Total of your electricity charges			\$2,425,925.78
Adjustments	Electricity Bill 100 Adj			\$304,072.47 CR
	Electricity RESOP Adj			\$61,017.64 CR
	WMSC eLDC setoff			\$5,882.76
	HST (87086-5821-RT0001)			\$46,696.95 CR
	Total adjustments			\$405,904.30 CR

Staff-8

Ref: “Questions on Accounts 1588 and 1589” document, paragraph 1 under “Global Adjustment – Account 1589”, page 2 of 3, filed November 16, 2018 (re: 2017 true-up adjustments)

Pre-amble

In the “Questions on Accounts 1588 and 1589” document submitted by Ottawa River Power, the following statement is made with respect to Account 1589:

“[S]ettlement for GA purposes relates to actual data for the applicable month (i.e. the settlement submitted on November 2, 2018 related to billed amounts in October for usage in September and the Hydro One bill used for settlement related to September usage).”

Questions

- a. Please confirm that, for consumption in December 2017, the amount of RPP-related GA charges was calculated by taking the total billed amounts in January 2018 and subtracting the non-RPP billed amounts in January 2018, submitted to Hydro One on February 2, 2018, and was reflected on the Hydro One bill received later in February 2018. If this is not the case, please describe how RPP-related GA for December 2017 was claimed by Ottawa River Power.

Ottawa River Power Corporation confirms that this is correct.

- b. If the above circumstance is confirmed, please indicate the posting date reflected in the general ledger of the RPP-related GA claim.

The RPP-related GA claim will be posted on the end of the billing period date on the Hydro One bill. In the above circumstance, the claim would be posted to the general ledger on January 31, 2018 as the Hydro One bill would be for the period of January 1, 2018 to January 31, 2018.

- c. When Ottawa River Power retrieves consumption information for a particular month for the purposes of settling GA attributable to RPP customers, OEB staff is of the understanding that the non-RPP consumption is subtracted from total consumption figures. How does Ottawa River Power account for those non-RPP customers that are not on calendar month billing cycles to ensure that the statistics it is using in settlement represent a full calendar month of RPP-related consumption?

As detailed in the response to OEB Staff IR 9, Ottawa River Power Corporation is currently in the process to converting to calendar month billing which is expected to be fully completed by March 1, 2019. This conversion is necessary to ensure complete accuracy and eliminate time-consuming procedures to gather actual consumption in a given month. Before the conversion, the billed amounts in a given month represented consumption from up to 3 different months. Under the old process, the billed amounts in January 2018 would have represented consumption from November 2017, December 2017 and January 2018 due to the various

billing periods of the cycles. Settlement in regards to dividing the consumption amongst the 3 different rates could not be performed in a timely manner and annual true-ups were required when more time permitted for a review. The majority of the Non-RPP customers subject to global adjustment charges had however already been converted to calendar month billing by the end of 2017 as Ottawa River Power Corporation was revising its processes in accordance with the May 23, 2017 letter from the OEB entitled 'Guidance on Accounts 1588 and 1589'. However, ORPC performed an adjustment to true-up 2016. The consumption for any non-RPP customer who is charged on a non-calendar month billing is true-up based on daily settlement consumption values in each month.

- d. Are the books for the 2017 fiscal year kept open long enough so that the RPP-related GA claim associated with December 2017 consumption can be journalized in the 2017 fiscal year?

The books for the 2017 fiscal year were kept open until the year-end audit was finalized in April 2018.

- e. If the RPP-related GA claim associated with December 2017 consumption is reflected in the general ledger in 2018, please explain i) why a reconciling item in the GA Analysis Workform is not required, and similarly, ii) why a principal adjustment in the 2017 continuity schedule is not required, so that all activity associated with 2017 is reflected in the balances being requested for disposition?

Although the GA claim associated with December 2017 consumption would be posted on January 31, 2018, the difference would be captured through reconciling items 2a and 2b in the GA Analysis Workform for unbilled revenues. Unbilled revenues captures the consumption and GA charges in December 2017 and adjusts accordingly. Ottawa River Power Corporation analyzed Account 1589 through its response to OEB Staff IR 2 which identified principal adjustments required on the DVA continuity schedule for 2017 which included unbilled revenues. ORPC has submitted a revised IRM to reflect these adjustments.

- f. Please update the GA Analysis Workform and IRM Rate Generator Model, as appropriate, in response to this interrogatory.

The GA Analysis Workform and IRM Rate Generator Model have been revised. Please see re-submitted versions.

Staff-9

Ref: "Questions on Accounts 1588 and 1589" document, paragraph 2 under "Global Adjustment – Account 1589", page 2 of 3, filed November 16, 2018 (re: unbilled non-RPP GA revenue true-up)

Pre-amble

In the “Questions on Accounts 1588 and 1589” document submitted by Ottawa River Power, the following statement is made with respect to Account 1589:

“The consumption used for settlement purposes is true-up as required on an annual basis in Account 1589 compared to actual usage in each month by calculating unbilled non-RPP GA consumption.”

Questions

- a. Why is there a need to true-up consumption if, for example, consumption in December 2017 is obtained by retrieving billed amounts in January 2018 and submitting that to Hydro One on February 2nd, 2018? Does the billed amount in January 2018 represent total consumption in December 2017 or only a portion of December 2017?

Ottawa River Power Corporation is currently in the process to converting to calendar month billing which is expected to be fully completed by March 1, 2019. This conversion is necessary to ensure complete accuracy and eliminate time-consuming procedures to gather actual consumption in a given month. Before the conversion, the billed amounts in a given month represented consumption from up to 3 different months. Using the example above, under the old process the billed amounts in January 2018 would have represented consumption from November 2017, December 2017 and January 2018 due to the various billing periods of the cycles. Settlement in regards to dividing the consumption amongst the 3 different rates could not be performed in a timely manner and annual true-ups were required when more time permitted for a review. The majority of the Non-RPP customers subject to global adjustment charges had however already been converted to calendar month billing by the end of 2017 as Ottawa River Power Corporation was revising its processes in accordance with the May 23, 2017 letter from the OEB entitled ‘Guidance on Accounts 1588 and 1589’.

- b. Why is there a need to calculate the unbilled non-RPP GA consumption if the statement in part a) above is confirmed and the billed amounts in one month represents the entire consumption from the prior month?

See explanation above – the billed amounts in one month did not represent the entire consumption from the prior month. However, due to Ottawa River Power Corporation’s process review, as of March 1, 2019, the billed amounts amount in, for example, April 2019 will represent the entire consumption from March 2019.

- c. With respect to the statement made in the pre-amble above, are these true-ups journalized in the respective fiscal year that they relate to? If not, please explain why a principal adjustment is not required on the DVA continuity schedule, or why a reconciling item is not required in the GA Analysis Workform.

Past true-ups, as required, have not always been journalized in the fiscal year they relate to as the fiscal year had been audited by the time the true-up calculation was finalized. As a result of its variance account review, Ottawa River Power Corporation had identified that a revised DVA continuity schedule is required and will be submitting a revised IRM along with these responses. This revised IRM will reflect the adjustments up to December 31, 2017. These adjustments have been reflected in the revised GA Analysis Workform which was also re-submitted along with these responses.

- d. For each year of 2015, 2016 and 2017, please quantify the true-ups referred to in the pre-amble above, describe in detail what is being trueed up, and indicate on which date in Ottawa River Power's general ledger the journal entry for the true-up is reflected on.

True-ups are only performed as required. The only identified true-up was for 2016 in the amount of \$174,549. This true-up was journalized in 2017 as reflected by the GA Analysis Workform. The true-up was required due to differences in consumption used for each month in the settlement period. For example, the billed amounts in May 2016 reflected consumption from March, April and May 2016. The consumption billed needs to be divided by month to use the actual GA rate in the consumption month. Since this calculation could be done in a timely manner (process revisions have since permitted for more accuracy – see response to OEB Staff IR 2), the consumption used in each month was estimated based on calendar days in each cycle, whereas the actual consumption should have been calculated based on daily consumption values. To determine the required adjustments, Ottawa River Power Corporation compared the daily consumption values and global adjustment charges against what was settled with Hydro One and identified the above true-up required.

- e. Please reconcile the statement in the pre-amble above with the statement "In regards to the 2018 proceeding, there were no true-ups in 2018 for months from 2017".

As the statement in the pre-amble indicates, true-ups are only performed as required. For 2017, Ottawa River Power Corporation had begun its process review and converted the majority of Non-RPP customers subject to global

adjustment charges to calendar month billing by year end. Ottawa River Power Corporation had also analyzed the 2017 balances in the variance account during the 2017 proceeding to ensure true-ups could be performed in a timelier manner and true-up and journalized in the fiscal year to which the adjustment pertained. As a result, no true-ups for 2017 were required in the global adjustment workflow.

- f. Please update the GA Analysis Workform and IRM Rate Generator Model, as appropriate, in response to this interrogatory.

The GA Analysis Workform and IRM Rate Generator Model have been revised. Please see re-submitted versions.

Staff-10

Ref: GA Analysis Workform; IRM Rate Generator Model (Tab 3); “Questions on Accounts 1588 and 1589” document, paragraph 3 under “Global Adjustment – Account 1589”, page 2 of 3, filed November 16, 2018 (re: recording of GA credit received on the generator payment)

Pre-amble

In the “Questions on Accounts 1588 and 1589” document submitted by Ottawa River Power, the following statement is made with respect to Account 1589:

“ORPC also receives a monthly generator payment from Hydro One for all electricity, if any, that was over-generated by embedded generators directly into the grid. The GA credit received on the generator payment is recorded into Account 1589. The value of the RPP GA to be settled with Hydro One is then reduced by the GA credit received on the generator payment.”

Questions

- a. Does Hydro One charge Ottawa River Power for this excess generation in one month, but then provide Ottawa River Power with a credit for the same amount in a subsequent month?

Hydro One will issue its bill to Ottawa River Power Corporation approximately 3 weeks after the month end to which the invoice pertains. This bill will include charges on all generation, including excess generation. Hydro One will also issue a credit invoice around the same time as the aforementioned invoice for any excess generation directly into the grid. Hydro One will issue a payment back to Ottawa River Power Corporation to reimburse this credit. Both invoices are back dated to the month end to which they pertain.

- b. Does Ottawa River Power post the credit received from Hydro One into the same month in the general ledger as the associated charge from Hydro One?

As mentioned in the above response, Ottawa River Power Corporation will post the credit received from Hydro One into the same month in the general ledger as the associated charge from Hydro One.

- i. If this is not the case, please explain how a variance for the end of 2017 with respect to this charge (and credit) does not exist in the balances being requested for disposition, and that this variance should be adjusted for.

N/A

Staff-11

Ref: GA Analysis Workform (reconciling item 9, "2015 RPP true-up included in 2017" variance); "Questions on Accounts 1588 and 1589" document filed November 16, 2018

Pre-amble

In the 2017 tab of the GA Analysis Workform, Ottawa River Power included a reconciling adjustment of a debit of \$174,549 for RPP Settlement-related amounts of GA that pertained to 2015 in reconciling item 9. However, the credit entry of \$174,549 is shown in the 2016 tab of the GA Analysis Workform.

Questions

- a. Please confirm which period(s) this pertains to (2015 or 2016) and how this figure was calculated.

This adjustment pertains to 2016 and was journalized in 2017. The adjustment was calculated by comparing the daily consumption values and global adjustment charges against what was settled with Hydro One. Please refer to the detailed response in OEB Staff IR 9. A revised GA Analysis Workform has been submitted to reflect necessary revisions.

- b. Please explain why this timing difference only appears in one year of the GA Analysis Workform and how the circumstances related to this adjustment are not applicable to other years (for instance, amounts recorded in 2018 that related to 2017, or amounts recorded in 2016 that related to 2015)?

Please refer to the response in OEB Staff IR 9. True-ups are only performed as required. For 2017, Ottawa River Power Corporation had begun its process review and converted the majority of Non-RPP customers subject

to global adjustment charges to calendar month billing by year end. Ottawa River Power Corporation had also analyzed the 2017 balances in the variance account during the 2017 proceeding to ensure true-ups could be performed in a timelier manner and true-up and journalized in the fiscal year to which the adjustment pertained. As a result, no true-ups for 2017 were required in the GA Analysis Workform. ORPC's analysis of 2015 revealed that no true-ups were required as differences were negligible.

- c. Please explain why such an adjustment exists, as Ottawa River Power had indicated in its "Questions on Accounts 1588 and 1589" document that it settles GA on a one-month lag based on actual consumption.

Please refer to response in OEB Staff IR 9. Ottawa River Power Corporation is currently in the process to converting to calendar month billing which is expected to be fully completed by March 1, 2019. This conversion is necessary to ensure complete accuracy and eliminate time-consuming procedures to gather actual consumption in a given month. Before the conversion, the billed amounts in a given month represented consumption from up to 3 different months. Using the example above, under the old process the billed amounts in January 2018 would have represented consumption from November 2017, December 2017 and January 2018 due to the various billing periods of the cycles. Under this process, settlement in regards to dividing the consumption amongst the 3 different rates could not be performed in a timely manner and annual true-ups were required when more time permitted for a review. The majority of the Non-RPP customers subject to global adjustment charges had however already been converted to calendar month billing by the end of 2017 as Ottawa River Power Corporation was revising its processes in accordance with the May 23, 2017 letter from the OEB entitled 'Guidance on Accounts 1588 and 1589'.

Staff-12

Ref: GA Analysis Workform (re: reconciling adjustment items 2a/2b)

- a. Please provide the supporting calculations with respect to reconciling adjustments 2a/2b. For example, reconciling item 2b in 2017 is a credit of \$7,588.

Items 2a and 2b represent the differences between the actual unbilled Global Adjustment at the end of the year as compared to the estimated amount when unbilled global adjustment was initially established. Please review the detailed calculations in Appendix H, I, J and K. Revisions were

required and a revised GA Analysis Workform was submitted with the interrogatory responses.

- b. In table format, please provide the kWh and the GA rate used in recording the unbilled revenue accrual for the year end of 2017, as well as the kWh and the GA rate that should have been used, if the accrual was recorded on an actual basis rather than on an estimated basis. Please provide this information for each year ended 2014, 2015, 2016 and 2017.

Ottawa River Power Corporation's unbilled revenue accrual takes the billing journal summary from each cycle – which have various billing periods – and prorates the amounts based on the number of days in each fiscal year. As a result, this represents an estimate and no kWh or exact GA rate is used in the calculation.

Staff-13

Ref: GA Analysis Workform (re: short-term load transfer)

Pre-amble

In the 2016 tab of the GA Analysis Workform, Ottawa River Power has recorded a debit reconciling item of \$176,622 for a short-term load transfer.

Questions

- a. Please explain the nature of this adjustment and provide the supporting calculation behind the \$176,622.

Please refer to Appendix L. According to communications from Hydro One, between November 16 and December 18, 2015 Hydro One had performed some temporary switch changes which mistakenly transferred the load from Almonte to Arnprior. This transferred 1,653,039 kWh during that time frame that should have been included on Ottawa River Power Corporation's invoice. The correction for this was performed as a short-term load transfer invoice (Appendix L). The GA rate for November 2015 was 0.1132 and December 2015 was 0.09471. This averages to a rate of approximately 0.103115 assuming even consumption throughout day. Using this rate, the estimated additional GA charge would be \$170,453 which is fairly consistent with the additional charge of \$176,622 per the Hydro One invoice. The variance from the estimate is a result from the difference in consumption through each month as the GA rate would be weighted based on daily consumption in each period.

- b. Please explain how this adjustment is isolated only to 2016, and that 2015 or 2017 are not fiscal years that were affected by this item, or similar types of adjustments related to short-term load transfers.

Please refer to revised GA Analysis Workform. This adjustment was not isolated to 2016. The invoice for the short-term load transfer invoice was received and recorded in June 2016 as the 2015 year end had already been closed and audited. The additional GA was settled in 2017 and the revised version indicates a reversal of this adjustment in 2017 at the time the difference was settled. Ottawa River Power Corporation is filing a revised version of the GA Analysis Workform as staff were unaware that the GA on the load transfer was not settled with Hydro One in the same fiscal year as the initial adjustment and was also unaware that a large portion of the GA on embedded generation was actually remitted in the November 2017 filing.

- c. Please indicate the year that this adjustment was actually recorded in the general ledger of Ottawa River Power.

This adjustment was recorded in 2016 and the additional GA was settled with Hydro One in 2017. Please refer to answer above for the required revision.

Staff-14

Ref: GA Analysis Workform (re: 2017 embedded generation)

Pre-amble

In the 2017 tab of the GA Analysis Workform, Ottawa River Power has recorded a debit reconciling item of \$249,978 for GA on 2017 embedded generation remitted in 2018.

Questions

- a. Please explain the nature of this adjustment and provide the supporting calculation behind the \$249,978.

As described in the document entitled 'Ottawa River_2018_Accounts_1588_1589_20181116' submitted on November 16, 2018, ORPC receives a monthly generator payment from Hydro One for all electricity, if any, that was over-generated by embedded generators directly into the grid. The GA credit received on the generator payment is recorded into Account 1589. The value of the RPP GA to be settled with Hydro One is then reduced by the GA credit received on the generator payment. The adjustment was required as there was a timing between when the amounts were collected and remitted back to Hydro One. In conjunction with the

response above, an error in the GA Analysis Workform was uncovered and a revised version will be re-submitted. Staff were unaware upon original filing of the workform that \$224,234 on this GA on embedded generation had been remitted in November 2017 in the appropriate fiscal year. The revised version reflects the difference between of \$25,744 between what was collected and remitted in 2017. See Appendix G for the supporting calculation.

- b. Please explain how this adjustment is isolated only to 2017, and that 2015 or 2016 are not fiscal years that were affected by this item, or similar types of adjustments related to embedded generation remittances.

The error is isolated to 2017 as the reimbursement of the October, November and December generation was only settled after year end. In 2015 and 2016, there was little to no generation directly into the grid during these months and all amounts were settled in a timely manner and therefore no values were required to be settled.

- c. Please indicate in which month and year this adjustment is reflected in Ottawa River Power's general ledger.

This adjustment is reflected in March 2018 Ottawa River Power Corporation's general ledger.

- d. If Ottawa River Power understated its embedded generation in 2017, is there also a corresponding 2017 credit for the monthly generator payment from Hydro One for the GA on generation that was injected into the grid? If so, please quantify this GA credit, with supporting calculations, and adjust the GA Analysis Workform if necessary.

Ottawa River Power Corporation's embedded generation was not understated in 2017 and therefore no adjustment is necessary. All generation was correctly reported, however the GA credit received was not remitted in a timely manner.

Staff-15

Ref: IRM Rate Generator Model, Tab 3 (re: LV Variance Account 1550)

Pre-amble

OEB staff notes that the balance of Ottawa River Power's USoA account 1550 is significant. The balance being requested for disposition is \$891,187. This balance

represents the principal and interest transactions from 2015 to 2017 plus forecasted interest to April 30, 2019.

Questions

- a. Please provide an explanation for the large size of the account balance.
Account 1550 is composed of the amounts paid to Hydro One for LVDS-Low and Common ST Lines among other items and of amounts collected from customers from the Low Voltage Rate. This rate charged to customers was established on Ottawa River Power's last Cost of Service for Rates effective May 1, 2016. The data used to establish the rates in the COS was based on the low voltage charges from Hydro One for 2013 and 2014 which was estimated at \$205,000 per year going forward. The variance from the estimated cost of \$205,000 was caused by an increase in rates from Hydro One and an error in the allocation of the \$205,000 to the customer classes. The most significant charge is Common ST Lines which comprises roughly 90% of the total balance estimated cost of \$205,000. At the time the rates were established, the average rate for Common ST Lines from Hydro One was \$0.6820/kW in 2014 which increased each year eventually to \$1.2052/kW in 2017 which represents a 77% increase from 2014. This large increase in rates was not anticipated at the time the rates were established. The remaining difference was caused by an error in the allocation of the customer classes. Sentinel lighting was stated to have 260,653 kWh whereas the charge to customers was actually based on kW. The actual kW reached a peak of 629 in 2016 for estimated collected Low Voltage of \$158. In comparison, the expectation from the COS model was that \$57,336 would be collected from Sentinel Light customers creating a difference of approximately \$57,000 each year.
- b. Please provide a quantitative analysis for amounts paid and amounts collected through base distribution rates (or other means) that reconciles this large balance, if practicable.

See Appendix A.

Staff-16

Ref: 1595 Analysis Workform

Pre-amble

In the 1595 Analysis Workform, Ottawa River Power indicated that the Global Adjustment rate rider calculated for the General Service 50 to 4,999 kW service class

customers was based on a forecasted consumption of 99,086 kW, however, the actual amounts returned to customers were applied against 187,715 kW.

Likewise, Ottawa River Power indicated that the Global Adjustment rate rider calculated for the Residential service class customers was based on a forecasted consumption of 8,642,866 kWh, however, the actual amounts returned to customers were applied against 3,854,579 kWh.

Questions

- a. Are there any specific circumstances that Ottawa River Power can identify that explain the large variances between the consumption figures projected for these rate classes at the time the riders were approved and the billed consumption that the riders were applied against?

The variance in the forecasted consumption for the Global Adjustment rate rider for the General Service 50 to 4,999 kW service classification was caused by an error in the forecasted consumption. The historical data used to establish the denominators for rate rider included consumption for General Service over 50 kW customers but failed to account for interval customers which had consumption of 80,665 kW during the billing period that the rate rider was applied against. This consumption is consistent with the variance seen from the denominator.

The variance in the forecasted consumption for the Global Adjustment rate rider for the residential service class was caused by a decline in the number of residential customers who are enrolled with a retailer. The forecasted consumption was based on historical data and did not predict the decline that residential customer retailer enrollment has seen. The table below summarizes the number of residential customers enrolled with a retailer as at December 31 of each year:

Year	Residential Customers Enrolled with a Retailer (#)	Variance from Previous Year (#)	Variance from Previous Year (%)
2010	843		
2011	552	291	(35)%
2012	495	57	(10)%
2013	410	85	(17)%

Altogether, there was a decrease of 52% in the number of residential customers enrolled with a retailer from the historical data used to establish the rate rider to the time that the rate rider went into effect. This decrease is consistent with the variance of 55% between the projected consumption

over the recovery period for residential customers and the billed consumption that the rate rider was applied against.

- b. Please explain why Ottawa River Power has not populated Column L (Billed Consumption per RRR filings) under the Global Adjustment Rate Rider Table.

Ottawa River Power Corporation is submitting a revised 1595 Analysis Workform to populate data into Column L.

- c. Please update the 1595 Analysis Workform accordingly.

Please refer to revised 1595 Analysis Workform Submitted with response.

Staff-17

Ref: EB-2014-0105, Distribution System Plan (DSP), “2016 Misc. Small Projects”, p. 146

Pre-amble

Based on Ottawa River Power’s DSP submitted for the last rebasing application, the DSP included capital projects between 2015 and 2019. In that DSP, it included some expenditures for betterments to the Almonte MS-2 and MS-3 substations, but a need for a new substation in Almonte was not identified at that time.

Ottawa River Power notes in the application that the previous Substation Condition Assessment Study indicated that a new substation in Almonte could be built after 2020.

Questions

- a. Please confirm why building a new MS-4 substation in Almonte was not identified in the DSP submitted in EB-2014-0105.

Ottawa River Power has completed betterments to both Almonte MS-2 and MS-3 substations during 2016, 2017 and 2018. These included upgrading of the feeder cables to allow for increased load ampacity.

The OEB is correct in saying that the need for a new substation in Almonte prior to 2020 was not indicated in the DSP. In 2016 a new “Acting President” was appointed. At that time the services of Costello and Associates were hired to do a high level overview of the distribution system. Following that report, the corporation decided to complete an in-depth analysis of its aging substations. It was at this time that the need for a further substation in Almonte was identified due to capacity issues.

- b. Please discuss the key changes from the time the DSP was submitted in EB-2014-0105 and now, with respect to the condition of the substations in Almonte and the ability of the substations to meet projected load growth in its service area. Please provide supporting documentation, analysis and assumptions as required.

A change in Presidency at the Corporation is the most notable change from the time the DSP was submitted to now. With this change an in depth analysis of the substations was completed by Costello and Associates.

There are two concerns that we have with Almonte. First, this is a high growth area. Load is quickly being added to the Almonte 4 kV system at a rate substantially higher than previous years. Second, should there be a failure of one of the two 5000 kVA transformers at either MS-1 or MS-2, there is not enough capacity to supply the town. In all likelihood, prolonged outages and perhaps rolling blackouts would result. This is unacceptable.

- c. In table format, please itemize the types of expenditures incurred to date for the substations in Almonte.

Almonte Sub 2 Upgrades -new riser poles and feeder cables, painting of station, installation of barbed wire, changing of the porcelain lightning arrestors and the porcelain station insulators have been replaced.
MS 1 SCADA
Almonte Sub 3 Upgrades – new feeder cables, fence repair, installation of new vegetation cloth and new washed stone. The porcelain lightning arrestors were replaced as well as the porcelain station insulators.

The feeder cables were replaced and upgraded at both stations in order to increase ampacity prior to the final build of substation 4.

- d. Please explain the factors that influenced Ottawa River Power's decision to propose building a new substation in 2019, rather than after 2020.

Almonte has three 44-4.16 kV substations of typical designs for their age. 4 kV substations are typically 5 MVA or less, limited in capacity due to high short circuit currents (the higher the kVA, the higher the short circuit levels).

Some transformers are designed and equipped with cooling fans that increase their base rating. Typically for transformers of this size, a transformer designed for fan cooling has an increased rating of 133% of the base rating. It is important to note that you cannot simply add fans to any transformer and get this 33% rating increase. The transformer must be designed to accommodate fans.

The Almonte MS-1 station was refurbished in 2009, and has a single 5000 kVA transformer that has no provisions for fans. The MS-1 station is also the site of a hydraulic generator, which is owned by a third party and generates electricity onto the 44 kV system. The generation substation does not impact capacity of the existing MS-1 substation whatsoever. It should be ignored for the purpose of substation capacity in Almonte.

The Almonte MS-2 station has a 1975 vintage 5000 kVA transformer that does have provisions for fans, but none are installed. The addition of fans would provide an additional 1650 kVA of capacity to the Almonte 4 kV system. This transformer is 43 years old.

The Almonte MS-3 station has a 1965 vintage 3000 kVA transformer that has no provision of fans. This transformer is 53 years old.

Staff-18

Ref: Application, p. 19 (re: analysis of forecasted peak load growth vs. existing substation capacity)
Attachment IR 18 i) – excel spreadsheet (attachment)

Pre-amble

In this application, Ottawa River Power made an ICM request to build a new substation (Almonte MS-4) by June 2019. Ottawa River Power indicates that this new substation was intended to provide relief to Almonte MS-3. Ottawa River Power also indicated plans to eventually replace Almonte MS-3.

In order to establish a need to build a new substation, forecasted peak loads should be compared with the existing substations capacity, while taking into account the condition of the existing equipment.

OEB staff created a table (Attachment IR 18 – excel spreadsheet) to request data on actual and forecasted peak loads in MW for the Almonte service area and at each individual Almonte substation.

Questions

- a. Please complete Attachment IR 18 – excel spreadsheet, and file a completed table in response to this interrogatory.

Please see Appendix M

- b. Please provide the analysis and assumptions that Ottawa River Power used to determine why the new substation in Almonte North is needed to meet forecasted load growth in Almonte.

The winter peak loading for the Almonte stations was approximately 10,755 kVA. There are two concerns that we have with Almonte. First, this is a high growth area. Load is quickly being added to the Almonte 4 kV system at a rate substantially higher than previous years. Secondly, there is 13,000 kVA of transformer capacity installed for a load of 10,755 kVA. There is very little capacity remaining for new load growth. More importantly, there is no contingency allowed for the failure of any major component (transformer, switchgear, damage to single poles outside substations). Any major failure of this sort would result in a prolonged loss of the station, and prolonged customer outages. Worst case, with the loss of a single 5000 kVA transformer at MS-1 or MS-2, there would be only 8000 kVA of available capacity. This would result in the prolonged loss of about 45% of Almonte's 4 kV load at a minimum.

Ottawa River Power chose the north where the growth is. This particular lot was chosen as the 44 KV from Hydro One is less than 100 ft. away.

Staff-19

Ref: Application, p. 22 (re: capacity of transformers)
Appendix D – part 1, MS-1 single line diagram, p. 9 of appendix a
Appendix D – part 2, station photographs, drawings DSC_2412 (MS-1),
DSC_2477 (MS-2) and DSC_2546 (MS-3)

Pre-amble

For the Almonte MS-1 transformer refurbished in 2009, there is inconsistent information on the capacity of this transformer based on the single-line diagram, nameplate capacity on station photographs and the application. Because of the conflicting information, it is unclear how much of capacity is still available at Almonte MS-1. Specifically, based on the nameplate rating in the station photograph, it appears as though this transformer's peak is less than 10% of its capacity of 18.7 MVA, with both sets of cooling fans on for a 10 MVA transformer.

In addition, the nameplate pictures indicate that the transformers at Almonte MS-2 (built in 1975) and Almonte MS-3 (built in 1965) could be fitted with a set of cooling fans. If this were the case, the rating for each of the MSs could be increased by 33% to 6.667 MVA and 4 MVA, for MS-2 and MS-3 respectively.

Questions

- a. Please provide the number and size of MS-1 transformer(s) with and without cooling fans.

Ottawa River Power's MS-1 station has a single 5000 kVA transformer without provisions for fans. There is also a third party generator on the same site that has its own 5000 kVA transformer that connects to the 44 kV system. This generator does not supply any direct 4 kV capacity. This was only shown on an older station sketch as at one time, both of these facilities were owned by the former Almonte Hydro.

- b. Please confirm the percentage of loading for MS-1 and show calculations.

The 2018 winter peak loading was 5067 kVA, which includes about 950 kVA of embedded generation capacity. The station was actually loaded to about 4800 kVA. If that generating station was not operating, the entire load would have been placed on MS-1. Some of this load would have been transferred to an adjacent station.

- c. Have cooling fans been installed at MS-2 and MS-3 transformers? If yes, when were the fans installed?

No cooling fans have been installed. The MS-2 transformer has provisions for fans, the MS-3 transformer does not.

Staff-20

Ref: Application, p. 23 (re: discussion of alternatives)

Pre-amble

Ottawa River Power's application did not include any discussion of the alternatives that were considered before deciding to build the Almonte MS-4 substation in 2019.

Questions

- a. Please discuss whether any of these alternatives, or combination of these alternatives, listed below were considered:
 - i. Purchasing a mobile transformer unit capable of backing up any of the 3 Almonte stations in times of emergencies and/or to facilitate planned maintenance activities.

The purchase of a mobile substation was considered but it was deemed not to be the best alternative for several reasons. First, from a reliability perspective, the time to install a mobile substation in response to a failure would be in the order of 1-2 days minimum. Secondly, the cost of the mobile substation plus the cost of modifications to the three existing substations to accommodate the mobile would exceed the cost of the proposed MS-4 substation. Thirdly, there is limited space at two of the three substations to accommodate a mobile substation. It would not be possible to install a mobile sub at MS-1 and MS-2. Finally, the MS-1 station is adjacent to a river, and without secondary oil spill containment, there would be an unacceptable risk of an oil spill into the waterway.

- ii. Transferring some of the load from Almonte MS-2 and Almonte MS-3 to Almonte MS-1 permanently or when needed (during peak hours) particularly since Almonte MS-1 appears to have more than 90% of capacity available and is located much closer to Almonte MS-3 than the proposed Almonte MS-4.

Almonte MS-1 is at full capacity. The capacity from the hydraulic generator is independent of the 4 kV distribution system capacity and is not relevant to this discussion. The actual useful capacity of the 4 kV system is the sum of the two smallest substations, when allowing for the failure of one of the largest transformers. This useful capacity is 5000 kVA plus 3000 kVA, for a total of 8000 kVA. The actual 4kV present day peak load is approximately 10,775 kVA, which means that there is presently a substantial capacity shortfall.

The existing 4 kV system has been configured to distribute load amongst the existing three stations, but also has to respect technical and reliability factors such as protection and coordination, voltage regulation, conductor ampacity, and switching contingencies.

- iii. If not yet done, installing cooling fans at Almonte MS-2 and Almonte MS-3 to increase their rating by 33%

As stated above MS-2 has provisions for fans, but MS-3 does not. Please note that there are two concerns with capacity – there are presently three substations, and it is good practice to have capacity to tolerate any single failure without prolonged outages. In this case, ORPC requires to supply the existing ~10,000 kVA of load with only

two out of three transformers. If one of the existing 5000 kVA unit fails, or any critical device inside that station (switchgear, cables, batteries), there would only be 5000 + 3000 kVA of remaining capacity. Currently this is not enough capacity for meeting 2018 requirements, let alone new load being added in Almonte. Only one of the three stations could have fan cooling added, for an increase of 1650 kVA. The MS-2 transformer could be equipped with fans. It is already 43 years old, and this could very well be the unit that fails. In our opinion, adding fans will not provide adequate reliability for present loading, new load, and unplanned outages.

- iv. Renting a mobile transformer unit

It would take time (days) to locate a spare transformer or to attempt to source a mobile substation. A few Ontario LDC's have mobile substations, but only a few of them support 44 kV. HONI has some mobile substations, but there is no assurance that one would be available if needed by ORPC. It would not be considered reasonable in our opinion to use a mobile substation as an alternative to having enough base capacity to tolerate a single mode failure. Further, failures other than a transformer failure could take a station out of service.

- v. Replacing switchgear at Almonte MS-3

Replacing the switchgear at MS-3 does not impact the 4 kV system capacity in Almonte. This question does however reinforce the point that the failure of one of the substations could be due to a switchgear failure and have nothing to do with the station transformer. In some respects, the time to repair metalclad switchgear can be longer than the time to replace the transformer with a spare unit or arrange for a mobile sub.

- vi. Installing monitoring equipment at Almonte MS-2 and Almonte MS-3 to ensure their loading does not exceed dynamic ratings

ORPC plans to eventually install SCADA monitoring at these stations as part of our capital planning. MS-1 was connected to the SCADA system in 2017, and the remaining stations will be added over the next few years. The SCADA monitoring would not alleviate the 4 kV

loading issues during the failure of one substation. Prolonged outages would still result. The new load coming onto the system also requires new capacity.

- vii. Any other alternatives not listed above

There is presently a shortfall in the substation capacity of Almonte's 4 kV distribution system. This exists today even without the addition of the new load growth that is coming onto the local system each year. New capacity is required. The following alternatives were considered:

- a) **Expand existing stations:** as discussed, alternatives for expanding existing stations include the addition of fan cooling on power transformers, replacing the power transformers with larger units, the addition of new feeder positions, and uprating overhead and underground circuits in proximity to the stations. All of these alternatives have been considered.
- b) **The purchase of a spare transformer:** having a spare transformer on-hand to allow a quick replacement if an existing unit should fail. This option was discounted because a substation could be lost due to a failure other than the transformer. The failure of the metalclad switchgear could also cause prolonged outages. Also, the three substations have different physical arrangements and it would be challenging to have one unit that would work in all three locations. This was deemed not to be a reasonable alternative from a reliability perspective.

- b. Please provide the estimated cost of the alternatives that were considered by Ottawa River Power.

For the construction of a new substation, several design alternatives were considered. The range of costs were between \$1.45M for a basic fuse-protection station without any SCADA or smart grid capability, to an advanced design station arrangement with a cost of up to \$2.75M for indoor metalclad switchgear, stand-alone P&C racks, and an aesthetically-pleasing switchgear building. ORPC elected to build a modern design that has current protection, control, SCADA, and smart grid technology, but is cost effective. The selected design is the same basic design that has been used in approximately 25 other LDC substations over the past 5-7 years.

- c. Please advise whether cost-benefit analysis was conducted, prior to concluding that building MS-4 was the most strategic or cost-effective option. If yes, please discuss the results.

Once it was determined that new station capacity was required both for a solution to the existing capacity shortfall during a failure scenario, and to provide future capacity for new loads, cost benefit analysis was performed to determine the lowest possible cost to provide the minimum safety and performance requirements.

Further to Item b. above, the lowest cost alternative employed only fuses for feeder protection. This was common in the 1950-1960 era, but this technology has seen very limited use in distribution utility substations after that time. Fuses are the lowest cost form of overcurrent protection, and do not provide adequate overload and ground fault protection. This station design also precludes the use of SCADA remote control, control for any embedded distribution generation, or smart grid alternatives.

The highest cost alternative provides essentially the same type of protection, control, SCADA, distributed generation, and smart grid technology, but employs a switchgear and control building and indoor metalclad switchgear. This is sometimes used in sensitive urban areas where it is necessary to provide visual and/or physical buffering from the station. The addition of a full building and the use of arc resistant metalclad switchgear adds about \$1M to the design.

The selected design is an outdoor station with padmount reclosers. It is a low profile design that is reasonably appealing from an aesthetic perspective. It uses modern digital protection and control equipment that provides for good overload, phase and ground fault protection, SCADA interoperability, distributed generation protection, and is completely ready for distribution smart grid technology. The selected station design has been used in about 25 similar projects. There are substantial savings in the design costs as the design has been reused from one project to another.

Staff-21

Ref: Appendix D – part 1, sections 2.2, 3.8, 3.9 and 3.10 (re: condition of substations)

Pre-amble

In the 2017 Substation Condition Assessment Study, the criteria used by Costello Utility Associates to assess the condition of the station included the following:

- Public safety
- Worker safety
- Risk of major equipment failure

The deficiencies found by Costello Utility Associates in the 2017 Substation Condition Assessment Study were primarily related to safety risks.

The 2017 Substation Condition Assessment Study, however, did not include information on the tests conducted and inspection records of the substation transformers at any of the Almonte substations. It is not immediately clear whether there was a proper assessment of the actual condition of the substation transformers.

Questions

a. Transformer test results:

- i. Please indicate what transformer tests (such as DGA, oil quality, Doble testing, etc.) were performed for substation transformers at Almonte area substations.

ORPC performs annual diagnostic oil testing that includes ASTM-877, DGA, and water content. In addition, period inspections and diagnostic electrical tests are performed (typically insulation resistance, winding resistance, and AC hipot/capacitance).

- ii. Who performed the test, and when the results were available to Ottawa River Power?

ORPC staff perform oil sampling, and the diagnostic testing is performed by an external qualified laboratory. Results are interpreted as part of the service, and typically provided to ORPC within 2 weeks. Electrical testing is performed during planned outages every three to four years, performed by qualified field service testing firms. Reports are typically provided within three weeks of the outage.

- iii. Please explain how the results were used in determining the condition of the substation transformers.

With specific reference to the condition assessment report completed by Costello, any diagnostic information available was reviewed and any specific concerns were addressed in the report. With respect to the transformers in Almonte, we were not made aware of any specific issues or concerns other than the age of the MS-2 and MS-3 transformers.

- iv. What specific transformer test results indicated that the transformers at the Almonte MS-2 and MS-3 substations were in poor condition?

The Costello condition assessment report did not list specific concerns with any test results. It did express concern that both transformers are operating past the typical end of useful life.

b. Visual inspections:

- i. Please indicate what visual inspections were performed for substation assets in Almonte.

Visual inspections include all aspects of the station from the incoming 44 kV circuit to each 4kV riser circuit. We are generally looking for four main categories: public safety, worker safety, environmental risk, and equipment reliability.

- ii. Who did the inspection, and when the inspection results were available to Ottawa River Power?

The inspections were completed by Stephen Costello and Ashley Rist of Costello Associates Inc., along with management and trade staff of ORPC. The final report was provided in September 2017.

- iii. Please explain how the results were used in determining the condition of substation assets.

The overall purpose of completing this assessment in 2017 was to determine a baseline of the existing station assets and identification of any immediate safety or reliability issues. There was a recent change in senior management and a review was requested to identify any significant concerns. The need for additional capacity in Almonte was being discussed at least three years earlier with the previous management.

The review completed by Costello was actually a high-level condition assessment and an overall review of substation construction, maintenance, and operations. It was used in the short term by ORPC to identify and repair several potential public and worker safety concerns.

The condition of the substation equipment itself was assessed on a combination of age, performance, diagnostic testing data, and visual inspection. One of the outcomes of the project was to reinforce the station maintenance program and ensure that maintenance activities are performed and scheduled in accordance with good utility practice.

This first pass study of the station condition assessment was primarily based on age, visual inspections, and anecdotal information provided by staff as to previous outages or failures experienced. Other than transformer oil testing, there was not a lot of diagnostic electrical testing data available. Our final report identified the need to perform more diagnostic testing that would provide more tangible information to improve the accuracy of the equipment condition.

- iv. What specific inspection findings indicated that the substation assets were in poor condition?

The study did not state that the assets were in poor general condition. A number of safety and reliability issues were identified, but they could mostly be corrected with maintenance. The prime concern we had with MS-2 and MS-3 was the age of the station, and the fact that the switchgear, transformers, and P&C equipment are operating past their typical useful life. It was not intended that these assets be replaced simply due to their age. However ORPC should be considering a plan for life extension or replacement of these assets at some point.

- c. Other than obsolescence of the Almonte MS-3 switchgear, please discuss whether there were any additional problems identified with MS-3, via testing or inspections, that indicates the switchgear was in poor condition.

Costello has not performed any additional testing of the MS-3 switchgear or any other station equipment.

- d. Please confirm whether Ottawa River Power has addressed all the concerns identified in the 2017 Substation Condition Assessment. If no, please discuss how Ottawa River Power plans on addressing the issues. If yes, please discuss what has been done.

Ottawa River Power has completed the following:

MS 1 Pembroke:

- **Barbed wire has been put on the fence**
- **Obstructions were removed from the room which house the low voltage switchgear**

- MS 1 is planned for decommissioning in 2019

MS 3/7 Pembroke

- Barbed wire has been installed on the fence
- MS 3 is planned for decommissioning in 2019

MS 4 Pembroke

- The fence is now properly bonded and fixed to remediate public safety concerns.

MS 5 Pembroke

- Barbed wire has been placed along the open roof line to guard against a member of the public coming in contact with the 44 KV supply

MS 6 Pembroke

- The station fence has been repaired.
- New ground grid has been installed

MS 8 Pembroke

- Barbed wire has been added to the station fence. Additionally ORPC has fixed the back of the fence so that no one from the adjoining restaurant could jump into the station from the fire escape. Ottawa River Power has adjusted the number of attempts at automatic reclose.

MS 1 Almonte

- The locks on this substation have been changed. All qualified personnel wear PPE when entering the building.

MS 2 Almonte

- The fence has been repaired and barbed wire has been installed on the wall. The neighbour's materials stacked against the wall have been removed.
- The porcelain lightning arrestors have been replaced.
- Porcelain station insulations have been replaced.

MS 3 Almonte

- The station yard work has been completed.
 - The porcelain lightning arrestors have been replaced.
 - Porcelain station insulations have been replaced.
- e. Please discuss how building a new substation in Almonte can mitigate the concerns identified in Almonte in the 2017 Substation Condition Assessment Study.

The condition of the existing three stations has no direct bearing on the need for additional capacity in Almonte. Typical utility planning in Ontario LDC's is to design our distribution systems to be tolerant of a single major failure without prolonged customer outages. Considering the failure of one of the existing 5000 kVA stations, there would only be 8000 kVA of capacity remaining in the system for a present day peak load of about 10,000 kVA. Even if all of the existing substations were brand new, the same planning standard would apply, and a new station would be required. In addition, as a suburb of Ottawa, Almonte is seeing unprecedented growth as Ottawa commuters are buying houses in Almonte. There are numerous subdivisions under construction or planned in Almonte, and there is insufficient useful capacity to service them.

Staff-22

Ref: Application, p. 21 (re: maintenance program activities)

Pre-amble

Ottawa River Power indicates that it can only perform maintenance activities during off-season.

Questions

- a. Please discuss the type of planned maintenance activities performed during off-season, requiring the Almonte MSs to be offline.

Ottawa River Power performs a complete detailed substation maintenance every four years, depending on the age and general condition of the equipment. Activities that require outages include physical inspections, mechanical checks, cleaning, lubrication, diagnostic electrical testing, and calibration. These activities are performed on cables, transformers, switchgear, circuit breakers, reclosers, fuses, switches, and battery systems.

b. What is the duration of its planned maintenance activities, and who does this?

A complete maintenance turn-around typically requires a one week outage, plus any switching time to provide work protection. Work may be done by internal staff and/or qualified high voltage field service firms.

c. Please discuss what preventative maintenance activities have been performed in the last scheduled maintenance.

The following activities were performed:

- **Physically inspected equipment**
- **Cleaned bushings, retorqued connections, inspected cooling rads on transformer, tested oil, checked for leakage**
- **Replaced 9 out of 18 insulators, replaced all porcelain lightning arrestors**
- **Removed 6" of old gravel and installed new vegetation cloth in entire station and installed washed stone**
- **Did complete circuit breaker checks – cleaned, lubricated and adjusted as needed**
- **Tested all cables**
- **Checked transformer fuse**
- **Completed infrared temperature checks**

Staff-23

Ref: Application, executive summary and pp. 18, 19, 23 (re: project cost)
Appendix D – part 1, page 3 (executive summary) and section 3.10

Pre-amble

Ottawa River Power provided a cost breakdown of MS-4. The projected cost of \$1,785,850 for building a new substation comprised of the following elements:

1. Property costs: \$87,000
2. Engineering and design: \$180,000
3. Equipment: \$798,000
4. Civic construction: \$388,000
5. Electrical: \$115,500
6. Miscellaneous: \$55,000
7. Contingency: \$162,350

In the executive summary of the 2017 Substation Condition Assessment Study, Costellos Utility Consultants recommend that “a new station was required for growth”. Further, the application indicates that Costellos Utility Consultants was retained to do the electrical engineering and project management work. Ottawa River Power indicates that the total estimate was verified for reasonableness by Costellos Utility Consultants.

Questions

- a. If the single source approach was used in this case, please explain why this approach was taken.

Costello Utility Consultants was chosen for two reasons. The first was that they completed station design for Pembroke Substation 2 rebuild in 2014. While this design was not fully implemented in that station, a large part of the design will be used at Almonte Substation 4, saving costs. Additionally Ottawa River Power was in talks with another 3rd party vendor who verbally estimated the costs to be higher. This vendor wanted to provide a turnkey solution, however Ottawa River Power will be utilizing different vendors and will be purchasing most major equipment ourselves, again saving costs.

- b. Were any other vendors besides Costellos Utility Consultants asked to provide an estimate? If yes, how many were considered? Please provide the detailed estimates by cost component for the new substation. If no, please confirm whether Costellos Utility Consultants provided the estimate for the overall cost of \$1,785,850 and the breakdown of the costs.

As stated above, informal talks were held with another vendor but no written estimate was provided. Ottawa River Power produced the estimate itself and asked Costello to review for reasonableness, knowing that a True-Up will be completed at the next Cost of Service. This was done by looking at costs of substation builds similar to our proposal from other utilities in Ontario.

- c. Please discuss the process that was undertaken by Costellos Utility Consultants to validate the reasonableness of the total cost estimate of MS-4. Please provide any supporting documentation prepared by Costellos Utility Consultants.

Costello Utility Consultants has assisted in the design and construction of about 25 similar substations over the past 5-7 years. We routinely provide LDC's with budgets for these projects, and then compare actual spent costs versus the budget. We are confident that the cost estimate for the

MS-4 project is reasonable based on our experience on recent similar projects.

Staff-24

Ref: Application, p. 20 (re: other project details such as location and project timelines)

Pre-amble

Ottawa River Power states that Almonte MS-4 is proposed to be located in the northern portion of Almonte, while Almonte MS-3 is located in the southern portion of Almonte. Almonte MS-1 is located in the middle of Almonte between MS-2 and MS-3.

However, the specific location of MS-4 was not included on the maps, and the MS-4 station single-line diagram was not provided in the application.

Questions

- a. Please confirm the exact location of the proposed Almonte MS-4. If this is known, please show the proposed location of MS-4 on the map that was provided in the application.

Please refer to Appendix N.

- b. Please provide the Almonte MS-4 single-line diagram. If a single-line diagram is not available at this time, please provide a substantive piece of documentation that shows the components of this proposed substation.

Please refer to Appendix O.

- c. Given earlier plans to begin tendering in September this year, please provide a detailed breakdown of the timelines to plan and construct MS-4. Specifically, how long would it take to build the MS-4 substation from the time that approvals were to be granted by the OEB?

Please refer to Appendix P.

- d. Please discuss your plans, if the ICM project is not approved by the OEB.

Should the OEB not approve the ICM project, Ottawa River Power will likely be faced with a significant negative cash flow in the short term and financial hardship during the IR term.