Ontario Energy Board
P.O. Box 2319
27th. Floor
2300 Yonge Street
Toronto ON M4P 1E4
Telephone: 416- 481-1967
Facsimile: 416- 440-7656
Toll free: 1-888-632-6273

Commission de l'Énergie de l'Ontario
C.P. 2319
27e étage
2300, rue Yonge
Toronto ON M4P 1E4
Téléphone; 416- 481-1967
Télécopieur: 416- 440-7656
Numéro sans frais: 1-888-632-6273

Ontario

BY E-MAIL

December 22, 2011

Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge St. 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Board Staff Submission
Toronto Hydro-Electric System Limited
Phase II – Suite Metering Issues
Board File Number EB-2010-0142

Please find the attached Board staff submission in the above proceeding. Please forward the following to Toronto Hydro-Electric System Limited and all other parties to this proceeding.

Sincerely,

Original Signed By

Martin Davies
Project Advisor, Applications & Regulatory Audit

Attachment

ONTARIO ENERGY BOARD

STAFF SUBMISSION

PHASE II – SUITE METERING ISSUES

Toronto Hydro-Electric System Limited

EB-2010-0142

December 22, 2011

INTRODUCTION

On August 23, 2010 Toronto Hydro-Electric System Limited ("Toronto Hydro" or the "Applicant") filed an application (the "Application") with the Ontario Energy Board (the "Board") requesting an order or orders of the Board approving or fixing just and reasonable distribution rates and other charges, effective May 1, 2011.

On March 25, 2011, a Settlement Agreement was filed with the Board which incorporated settlement of most outstanding issues in this proceeding. On March 29, 2011, the Board announced its acceptance of the Settlement Agreement. Unsettled issues remained in five areas, one of which was the appropriateness of Toronto Hydro's suite metering cost allocation and whether or not Toronto Hydro should establish a separate rate class for multi-unit residential customers that are served directly by Toronto Hydro through its suite metering provision.

On July 7, 2011, the Board issued its Partial Decision and Order (the "Partial Decision") in this proceeding. Among other things, the Partial Decision found that while all findings in the Partial Decision were final and would result in a final rate order for 2011 rates, the Board would require supplementary evidence to be filed on the suite metering issues as outlined in the Partial Decision (the "supplementary evidence").

Toronto Hydro filed the supplementary evidence on September 30, 2011. This evidence was subsequently corrected on November 4, 2011.

Intervenors active in the second phase of the proceeding included the Consumers Council of Canada ("CCC"), the School Energy Coalition ("SEC"), the Smart Sub-metering Working Group ("SSMWG") and the Vulnerable Energy Consumers' Coalition ("VECC").

Staff's submission reflects observations and concerns which arise from staff's review of the case record related to the suite metering issue and is intended to assist the Board in evaluating Toronto Hydro's application and in setting just and reasonable rates. A portion of the evidence related to a proposal by Toronto Hydro for a transitional meter-only rate for converting buildings was ruled out of the scope of this proceeding by the Board and, accordingly, staff will make no submissions on that segment of the evidence.

TORONTO HYDRO'S EVIDENCE

Background

Toronto Hydro stated that its proposed suite meter rates were based on establishing a revenue-to-cost ratio equal to 1 for the new suite meter residential class. Where rate design was concerned, Toronto Hydro proposed the same design of rates for the new class that is applied for the existing residential class.

(i) Revenue-to-Cost Ratio:

Toronto Hydro noted that the Board had stated in its Partial Decision that:

> The Board finds that due to the existence of a competitive market for the provision of unit sub-metering it is appropriate to ensure that procurement choices, as between licensed distributors (suite metering) and licensed unit sub-meter providers (unit sub-metering) are made on a comparable economic basis both within the competitive unit sub-metering marketplace and between this competitive market place and the monopoly service.[1]

Toronto Hydro stated that it had interpreted this finding to imply that the revenue-to-cost ratio for the new class was to be set at unity, the point at which the revenues collected from the class are set equal to the costs incurred to serve the class, to ensure that suite meter customers are neither receiving nor paying any subsidies from/to consumers in other rate classes.

Toronto Hydro further stated that its running of the cost allocation model had indicated that for 2012, the revenue-to-cost ratio, before any reallocations, would be 100.5% for the suite meter class. Accordingly, Toronto Hydro stated that for the purposes of designing an initial tariff, it had reduced the revenue responsibility to the class to make the revenue-to-cost ratio equal to 1, with an offsetting increase in the revenue-to-cost ratio for the remaining residential class being the result.

Toronto Hydro argued that it was appropriate that only the remaining residential class had been adjusted since the suite meter class was previously part of the (existing)

---

[1] Toronto Hydro-Electric System Limited, *Suite Metering Supplementary Evidence,* ("THESL Evidence") p.7

Residential class, and therefore it was proper that any impacts due to the split of this class would be affected only on that class and not on other rate classes.

(ii) Rate Design:

Toronto Hydro proposed the same design of rates, including fixed and variable charge components, for the new class as was applied for the existing residential class. Toronto Hydro stated that in developing the level of these charges, it had maintained the same proportion of revenue recovered from the fixed and variable charges for the new classes (the suite meter class as well as the new remaining residential class) as applies to the existing residential class.

Toronto Hydro's evidence contained a table which provided sensitivities of the revenue-to-cost ratios to alternative assumptions. This table is reproduced below[2]:

Table 3: Sensitivity of R/C Ratios to Alternative Assumptions

Alternative Assumption	Impact on R/C Ratio for Suite Meter class	Resulting Suite Meter R/C range
Average Monthly load - +/- 1 Std Deviation based on sample	+/- 4-5%	104.4-95.1%
Estimated per Meter Cost +/- $100	+/- 6%	106.5-94.5%
Directly Allocated Meter Costs	- 5.6%	95.0%
Percentage of Secondary allocated +/- 8%	+/- 3.4%	103.9-97.1%

Discussion and Submission

Staff would first note that the issues that are to be determined by the Board in this phase of the proceeding are clearly specified in the Partial Decision, in which it was stated that: "The objective of the subsequent phase of the proceeding is to establish both the cost allocation protocols for the new customer class and to establish the initial

[2] THESL Evidence, p.7

tariff that THESL will charge for this service."[3] As such, staff is of the view that the purpose of this phase of the proceeding is relatively limited. It does not include whether or not a separate class should be established, or whether more than two classes should be established. It also does not include revisiting issues that were dealt with in developing the Board's cost allocation model, or proposed revisions to that model. Staff has accordingly confined its comments to the areas specifically mandated by the Partial Decision.

Staff notes that Toronto Hydro has stated that it used the Board's cost allocation model to determine the costs that should be allocated to the new residential suite metering class. Staff does not believe that there is any evidence on the record in this proceeding to suggest that Toronto Hydro has used the model in either an incorrect or inappropriate manner.

Staff is of the view that the real issues and debate in this proceeding have related to the assumptions that have been made in using the Board's cost allocation model. The significance of these assumptions is evident from the table reproduced above from THESL's evidence. These assumptions were also the subject of much debate during the proceeding. In its Argument-in-Chief, Toronto Hydro stated that "under differing input assumptions, the resulting revenue-to-cost ratio for the Quadlogic class can vary from a low of 90.2% to a high of 122.6%."[4]

Staff will now review each of these assumptions in turn in addition to Toronto Hydro's approach to rate design and provide its comments on issues relating to them.

(1) Average Monthly Load

Background

Toronto Hydro noted that the BDR study filed at Exhibit L1, Tab 4, Schedule 1 (the "Updated BDR Study") had identified 9,149 suite meter customers served by Quadlogic technology at the end of 2009 and that for the current analysis this number had been

[3] Toronto Hydro-Electric System Limited, EB-2010-0142, *Partial Decision & Order,* July 7, 2011, p.36
[4] Toronto Hydro-Electric System Limited, *Argument-in-Chief of Toronto Hydro-Electric System Limited,* December 14, 2011, p. 8.

updated with 24,898 suite meter customers forecast to be served by Quadlogic meters in 2012. Toronto Hydro stated that this number represented the mid-year forecast which was the standard method of applying customer numbers in the cost allocation model and that all other classes were forecast on the same basis.

Toronto Hydro stated that in the Updated BDR Study, based on the 2009 sample of Quadlogic customers, the average monthly load was estimated to be 361 kWh on a normalized basis (or 355 kWh non-normalized). Toronto Hydro noted that it had updated its information on loads for this class using the most recent hourly load information and that, as in the Updated BDR Study, some of the raw load data contains periods with zero use due to unoccupied units.

Toronto Hydro further stated that it had used the same methodology employed in the Updated BDR Study to obtain an updated estimate of average monthly load. This updated estimate was 334 kWh per month. Toronto Hydro stated that due to time constraints associated with the filing of its evidence, it had not done a detailed investigation as to why the most recent sample produces a lower monthly average load than the Updated BDR Study, but that statistical analysis of the current data showed a standard deviation across the sample of 192 kWh per month, placing the current estimate well within one standard deviation of the previous estimate. During the oral hearing, Toronto Hydro reaffirmed its confidence in this estimate.[5]

Discussion and Submission

Staff notes that the shift in the average monthly load between the two studies is 29 kWh per month. Toronto Hydro states that a standard deviation across the sample is 192 kWh. Given that one standard deviation would impact the revenue-to-cost ratio by about 4.5%, this would mean that the impact on the revenue-to-cost ratio of the load variability between the two studies would be about 0.6%. Staff considers this differential to be reasonable and accepts the assumptions made by Toronto Hydro related to the average monthly load in deriving the new suite metered residential class.

(2) Estimated per Meter Cost

[5] Transcript, Vol. 4, p. 86 L24 to p. 87 L25

Background

Toronto Hydro noted that the Board had in the Partial Decision indicated that the new suite meter class was to be defined presently by the meter type serving the customers in this class and more specifically Quadlogic meters. Toronto Hydro stated that the use of this technology for serving suite metered customers had been based on a number of factors including physical characteristics, cost and Measurement Canada approval and that while currently this is the brand of meter being installed by it, the contract with the vendor for these meters will expire at the end of 2011 and there is no guarantee that this same technology will be used by Toronto Hydro going forward.

Toronto Hydro estimated its 2012 installed per meter cost as being $550, which was higher than the $440 value used in the Updated BDR Study which was based on 2009 costs[6]. Toronto Hydro stated that it had estimated this number based on the number and types of meters in service in 2012 and that factors driving the increased per meter cost estimate compared to the previous value included costs related to inspections, network meters and larger 3-phase meters which are more costly.

Toronto Hydro further noted that where meter reading costs were concerned, these costs were expected to be reduced as the reading of meters is moved in-house. Toronto Hydro observed that in the Updated BDR Study, meter reading for the Quadlogic customers was assigned a weighting factor of 7 compared to 1 for a smart meter residential customer. Toronto Hydro stated that based on 2012 data, the weighting factor compared to other residential meters applicable to this evidence has been lowered to an estimated factor of 3.6, which is reflective of lower costs.

Toronto Hydro stated that this reduction was offset by a change in the assumption related to meter reads. In the BDR study, meter reads had been assumed to happen every two months, while in the current study they have been assumed to occur monthly. This is because suite meters are being read and billed at the same time as the bulk meters, used to bill building common area load, thereby increasing the costs allocated to the suite meter class.

[6] Transcript, Vol. 3, p. 17, L 4 - L22

Toronto Hydro further noted that in the Updated BDR Study, a direct allocation of marketing costs associated with the suite meter program had been included in the amount of $90,000, but in 2012 there were no marketing costs included in the budget for suite meter activity and hence no expenses had been directly allocated to the suite meter class. Mr. O'Leary took Mr. Marchant through a detailed review of the components of these costs during cross examination.[7]

Toronto Hydro did state however that its overall marketing expenses had been allocated to this class based on the cost allocation model logic, which allocated marketing costs to all customer classes based on the OM&A allocator.

Discussion and Submission

Staff notes that Toronto Hydro provided the costs underlying its assumptions and that there was considerable discussion related to these costs. Staff notes that the issue of the marketing costs was the subject of considerable scrutiny and that while it was not entirely clear as a result that all of these costs had necessarily been eliminated, it was also not clear that any remaining amounts would be significant. Staff also notes that Mr. Marchant stated during cross examination that the sales function will be undertaken by the third party vendor who will be providing the meters and that these costs are therefore included in the $550 meter cost estimate.[8] Staff is satisfied that these cost estimates are reasonable based on the evidence on the record in this proceeding.

(3) Directly Allocated Meter Costs

Background

Toronto Hydro's evidence showed that the direct allocation of meter costs would reduce the revenue-to-cost ratio for the suite meter class by 5.6%. A Board staff interrogatory[9] asked Toronto Hydro to state why it had used the model's meter cost weighting factors rather than direct allocation for these costs and which approach Toronto Hydro would view as the most accurate.

---

[7] Transcript, Vol. 3, p. 62 L13 to p.69 L10.
[8] Ibid, p.69 L11 to L20.
[9] Exhibit R4, Tab 1 Schedule 10.

Toronto Hydro responded that the Board's cost allocation model incorporated detailed information on costs by meter type for each rate class and allocated these weighted meter costs using sound allocation logic to all rate classes. Toronto Hydro expressed its belief that this was a reasonable methodology for all rate classes.

Toronto Hydro stated that under the direct allocation methodology, while the Quadlogic meter costs (as well as associated depreciation and meter expenses) are allocated directly to the Quadlogic class, the remaining meter costs are allocated to all classes – including the Quadlogic class – using the weighted meter logic. Toronto Hydro further stated that this shortcoming could be overcome by assigning zero costs to the Quadlogic class in Tab I7.1 of the cost allocation model, which Toronto Hydro noted is the part of the model that determines the class allocations for the meter capital costs account.

Toronto Hydro concluded that the direct allocation of the estimated Quadlogic meter costs to the Quadlogic class in the sensitivity analysis was performed to transparently demonstrate the results using a second method of allocation and did not adjust for the shortcoming noted above. Toronto Hydro stated that both methods likely provide a reasonable estimate for the allocation of meter costs and the relatively narrow range of the result (especially considering the relatively small size of the Quadlogic class) demonstrates this.

Discussion and Submission

Board staff submits that Toronto Hydro has provided adequate justification for its approach to the direct allocation issue given the relatively small size of the Quadlogic class and the desirability of a uniform application of the cost allocation model to all customer classes.

(4) Percentage of Secondary Costs Allocated

Background

Toronto Hydro noted that in the Original BDR Study a weighting factor of 30% had been applied to its secondary costs to adjust the amount of these costs being allocated to the entire individually metered multi-residential customer class. This estimate had been based on engineering estimates of the proportion of Toronto Hydro's secondary system

which had been used to service individually metered multi-residential customers (which included Quadlogic metered customers).

Toronto Hydro stated however that in the Updated BDR study, this weighting factor had been reduced to 8% for the customers served using Quadlogic meters to reflect the fact that very few of the buildings with Quadlogic installations are served by secondary assets. This 8% weighting factor has been maintained in Toronto Hydro's present evidence.

In response to an undertaking, Toronto Hydro provided support for this 8% assumption, noting that for the 2009 total number of customers in the Quadlogic class of 9,149, 696 or 7.6% were served by secondary circuits, while for the 2012 total Quadlogic customer estimate of 24,898 customers, the total number served by Quadlogic meters is 1,710 customers, or 6.9%.[10]

Toronto Hydro stated that it believed that a number lower than 8% is more likely than a number greater than 8% as most of the additional Quadlogic customers since 2009 have been added to the primary system.

Discussion and Submission

Staff notes that the 8% assumption made by Toronto Hydro has remained relatively constant in the 2009 to 2012 period and that there has been no other evidence provided that would suggest an alternative assumption. Board staff accepts Toronto Hydro's estimate.

Staff further notes that the cost allocation study submitted by Toronto Hydro is based on the assumption that all Residential customers are served from the secondary system, which implicitly assumes that all suite-metered customers other than those in the Quadlogic class are also served from this system.[11] Toronto Hydro's study does not include information on how many of these suite-metered customers should not be allocated a share of the cost of secondary assets in the secondary assets sub-

[10] Exhibit T1 Tab 1 Schedule 1

[11] This is shown on Sheet I6.2 of the Cost Allocation Model where for the Residential class the number of residential customers is identical to the secondary customer base.

accounts.[12] According to the break-down of assets in Toronto Hydro's study, secondary assets and services make up approximately one-third of the net book value of its distribution assets.[13] Staff notes that the effect of this assumption is that an overly-large share of cost is allocated to the new Residential class, relative to the other classes served at the lowest voltage levels. Staff submits that while this assumption likely does not have any material effect on the revenue to cost ratios of any of the classes because the suite-metered customers are a relatively small portion of the Residential class in the study, as constituted, it would have a larger effect if in the future any further sub-division of remaining suite-metered customers out of the new Residential class was to take place.

Rate Design

Background

Toronto Hydro is proposing a service charge of $16.29 per customer (per 30 days) and a volumetric rate of 2.701 cents per kWh for the Quadlogic class, as compared to $20.16 per customer and 1.646 cents per kWh for Residential customers other than those in the Quadlogic class. The rates for the Quadlogic class would yield a revenue-to-cost ratio of 100.0%, whereas those for the Residential class would yield a ratio in the 89% range.

Discussion and Submission

Staff submits that the rates proposed for the Quadlogic class are reasonable as they produce a revenue-to-cost ratio of 100% and the ratio for the Residential class would be comparable to those in previous applications and Decisions.

Staff's concern with Toronto Hydro's proposal is the approach to rate design that has been taken. The respective fixed and volumetric rates are derived by Toronto Hydro in such a way that there will be an identical proportion of revenue yielded by the fixed rates and the variable rates in the two classes, despite the fact that the monthly

[12] These would include sub accounts 1830-5, 1835-5, 1840-5, 1845-5 and 1855 Services.
[13] From Worksheet I4, Column K taking the grand total of net assets in cell K86 of roughly $2.3 billion, relative to the total of secondary sub accounts referenced above.

consumption per customer in the Quadlogic class is much lower than in the Residential class.

Staff notes that the range of customer-related costs produced by the cost allocation study is from $12.71 to $23.76 for the Quadlogic class, compared to a range of $4.52 to $20.35 for the Residential class. Staff submits that it is useful in this context to compare these ranges with the mid-points of the ranges as derived from Worksheet O2's Scenario 2 and Scenario 3, which are respectively customer-related costs including directly-related cost burdens and the minimum system approach. The mid-points of these ranges are $13.49 for the Residential class and $20.65 for the Quadlogic class.

Staff notes the much lower level of monthly consumption in the Quadlogic class relative to the Residential class which, as has been discussed earlier, is estimated as 361 kWh per month. Staff submits that because of this differential it would be more appropriate to have a higher monthly service charge for the Quadlogic class such as the $20.65 midpoint noted above, rather than the proposed $16.29 per month with the variable charge component then recalculated based on this higher level of fixed charge. Staff considers this approach to be more appropriate than that proposed by Toronto Hydro since the proposal to have identical proportions of revenue from fixed versus variable charges is arbitrary, and runs contrary to the proportion of costs that are derived as customer-related versus demand-related in the cost allocation study.

Conclusion

Board staff submits that Toronto Hydro has provided significant details in support of its proposed rates for the new residential suite metering class. While Board staff accepts that there are a range of assumptions that can be made in running the cost allocation model, staff would note that: (1) No evidence has been provided in this proceeding to suggest that Toronto Hydro has improperly used the cost allocation model; (2) while some parties may have differing views on some of the approaches incorporated into the cost allocation model that have impacted the rates proposed by Toronto Hydro, these are matters that are out-of-scope for this proceeding, and (3) No evidence has been provided by other parties that contradicted Toronto Hydro's assumptions. Accordingly, subject to the exception identified above related to rate design, staff submits that the Board should accept Toronto Hydro's proposed suite metering rates as just and reasonable based on the information that is available at the present time. In this context,

staff further submits that the Board should require Toronto Hydro to review each of its assumptions when it refreshes its cost allocation study for its next cost of service application, as by such time there should be better data about the Quadlogic class. Toronto Hydro should also note any of the assumptions that would require revision and provide explanations for any such revisions at that time.

- All of which is respectfully submitted –