MIPUG/COALITION I-1

Part and Chapter:	Exhibit CC-13, Midgard Evidence	**Page #:**	
Topic:	Reliability Performance		
Subtopic:	Sub-Transmission System		

Preamble (if any):

Refer to:

- MIPUG/MH I-19(c-d) – Sub-Transmission System Reliability
- MIPUG/MH I-20 – Distribution System Reliability
- MIPUG/MH I-21 – Long-Term Risk Trends

Question:

a) In its analysis of reliability performance, did Midgard consider reliability on Manitoba Hydro's 33 kV and 66 kV sub-transmission system separately from the less than 30 kV distribution system or greater than 100 kV transmission system?

b) If yes to a), in what manner did Midgard consider reliability performance on the sub-transmission system?

Rationale for Question:

Consideration for reliability performance on the sub-transmission system as a distinct subsystem on the transmission/distribution network, serving separate rate classes.

Response:

a) No, Midgard did not consider the reliability of MH's 33 kV and 66 kV distribution system (which MIPUG labels "sub-transmission system")[1] separately from the <30 kV distribution system and >100 kV transmission system. From a residential customer perspective, the cumulative reliability impact of circuit performance at 66 kV, 33 kV, and <33 kV is reflected in MH's System Average Interruption Duration Index ("SAIDI") and System Average Interruption Frequency Index ("SAIFI") metrics (with and without Major Event Days). Midgard understands some industrial customers have a direct interest in the performance of the specific 33 kV and 66 kV circuits to which they are connected and therefore regard 33 kV and 66 kV circuits as part of the transmission system rather than the distribution system. This is evidenced by MIPUG labeling such circuits as "sub-transmission" rather than, for example, "super-distribution."[2] However, it was not within Midgard's mandate

[1] **Exhibit MIPUG-09, Section 3.1, p. 3-1.**
[2] **"Super" is considered the opposite of "sub".**

to evaluate the unique reliability needs of industrial customers and Midgard has not undertaken such analysis.[3]

b) Not applicable, please refer to Midgard's response to part (a).

[3] Throughout Midgard's evidence, Midgard made efforts to ensure that it was clear that its reliability related evidence pertained to residential ratepayers rather than industrial ratepayers.

MIPUG/COALITION I-2

Part and Chapter:	Exhibit CC-13 – Midgard Evidence	**Page #:**	
Topic:	System Reliability		
Subtopic:	Monitoring and Analysis		

Preamble (if any):

Monitoring and analysis for reliability assessment and remediation.

Question:

a) In its evaluation of distribution and transmission system reliability performance, did Midgard consider Manitoba Hydro's capabilities to monitor reliability, including outage duration and frequency, and use that data to identify problematic locations suffering from above average outage duration and frequency?

b) If yes to a), did Midgard consider how Manitoba Hydro prioritizes these locations for remedial action with available operating and capital resources?

c) Did Midgard consider Manitoba Hydro's capabilities for monitoring momentary outages and power quality events, such as voltage sags, with shorter durations than those typically captured in reporting for industry-standard SAIDI and SAIFI indices?

Rationale for Question:

Consideration for monitoring and analysis capabilities for identification and remediation of priority reliability concerns.

Response:

a) Midgard considered MH's capabilities to monitor reliability parameters such as outage duration and frequency as they pertain to the service received by residential ratepayers, but did not separately evaluate the unique reliability requirements of industrial customers. Events that may cause concerns for industrial customers include momentary outages (e.g., less than one minute or one second), and power quality phenomena such as frequency excursions, voltage sags or surges, and excessive harmonic content. Given the nature of most residential loads, and especially considering the recent proliferation of switching power supplies that are relatively insensitive to voltage and frequency variations or brief outages, residential customers are not usually adversely affected by momentary outages and moderate power quality excursions – such events tend to be viewed as minor irritations rather than major disruptions by residential customers. Midgard's experience is that industrial customers may be more sensitive to such events, as they can cause process interruptions, which may lead to financial losses.

Similar to other jurisdictions in which Midgard has worked, Midgard expects MH has a "Worst Performing Feeder" program that identifies and sets out to remediate the poorest performing feeders in its distribution system. However, Midgard did not explicitly ask MH about the existence or performance of such a program, nor its applicability to the differing reliability needs of residential and industrial customers. MH's customer survey indicated residential ratepayers were generally satisfied with their existing power quality and reliability service levels.[4]

b) Not applicable, please refer to Midgard's response to part (a).

c) Please refer to Midgard's response to part (a).

[4] Exhibit CC-13, Section 4.1, p. 23, l. 22 to p. 24, l. 1.

MIPUG/COALITION I-3

Part and Chapter:	Exhibit CC-13 Midgard Evidence	**Page #:**	
Topic:	Reliability Performance		
Subtopic:	Value of Unserved Energy		

Preamble (if any):

Refer to Exhibit MIPUG-23 (2023/24 GRA) Recommendation 14 and Issue Topic #9 (PDF p. 140).

Question:

a) Please provide Midgard's perspective regarding the use of metrics related to the "value of unserved energy" for prioritizing the deployment of operating and capital resources to mitigate and correct reliability concerns on the distribution and transmission systems.

Rationale for Question:

Consideration for the value of energy that would have otherwise been delivered in the absence of reliability events.

Response:

a) Midgard's perspective is that Value of Lost Load ("VOLL") metrics can provide a useful economic framework for prioritizing operating and capital resources to address reliability concerns on distribution and transmission systems. These metrics estimate the economic cost of unserved energy and help quantify trade-offs between reliability investments and potential losses. However, their application has limitations and must be carefully tailored, particularly in the context of a hydroelectric-dominated utility such as MH.

   Midgard recently completed a study for the Ontario Independent Electric System Operator ("IESO") recommending that the IESO integrate Value of Lost Load ("VOLL") into its planning and procurement processes:[5]

   > *"Value of Lost Load: A comprehensive Value of Lost Load (VOLL) study should be undertaken to enable IESO to explicitly consider validated and quantified ratepayer valuation of system reliability, risk and resiliency when considering trade-offs between costs, benefits, opportunity costs, risks and uncertainty in planning and resource procurement activities."*[6]

[5] Midgard Consulting Inc., *Review of IESO's Planning and Procurement Processes*, Section 5.2, p. 41. Link.
[6] Midgard Consulting Inc., *Review of IESO's Planning and Procurement Processes*, Section 3.1, p. 33. Link.

In response, the IESO recognized that:

> *"VOLL is a metric that can be applied in estimating the benefit of investments aimed at improving reliability and is one of many ways to quantify the value of reliability.*
>
> *…*
>
> *IESO understands that VOLL can be complementary to analysis done for IESO Responses to Recommendations for established reliability standards and planning criteria"* [7]

VOLL studies determine the value that different customers place on lost load and helps match investments with the ratepayer classes that will be asked to pay for those investments. From Midgard's Ontario IESO study:

> *"Value of Lost Load or VOLL is an economic metric that quantifies the financial impact of electricity supply interruptions, representing the monetary value ratepayers place on reliable electricity. Understanding VOLL helps utilities, regulators, policymakers and ratepayers make informed decisions regarding infrastructure investment, pricing and outage management. VOLL helps prioritize investments in infrastructure to cost effectively improve grid reliability by focusing investments in those areas where the investment cost is less than the value received by different ratepayer classes. VOLL provides a quantifiable means to weigh the cost of improving reliability against the cost of potential outages for different ratepayer classes. For example, industrial ratepayers are typically more sensitive to transitory outages than are residential ratepayers and therefore these customer classes have different willingness to pay for investments to address these types of outages.*
>
> *VOLL allows utilities to balance the expenses investments such as system upgrades, changing maintenance practices, energy storage & backup generation with the economic impact of the types of risks they address, matched with the ratepayer classes that will be asked to pay for those investments. Understanding VOLL helps utilities and system operators develop electrical system plans and procurements that better align with customer values. As a result, VOLL can also inform demand response programs, peak pricing and other non-wires solutions that encourage ratepayers to shift or reduce load during high-risk periods.*
>
> *In summary, VOLL assists all parties – utilities, regulators, policymakers and ratepayers – to better understand and support justifications for policies around reliability standards, grid modernization, backup generation and energy storage. Better aligning electrical system plans and procurement*

[7] IESO, *IESO Responses to Recommendations for IESO's Planning and Procurement Processes,* p. 1. Link.

activities with the value they bring to ratepayers ensures that grid reliability meets societal expectations and economic needs."[8] [footnotes omitted]

[8] Midgard Consulting Inc., *Review of IESO's Planning and Procurement Processes*, Section 5, p. 40. Link.

MIPUG/COALITION I-4

Part and Chapter:	Exhibit CC-13 Midgard Evidence	**Page #:**	
Topic:	Long Term Risk Trends		
Subtopic:			

Preamble (if any):

Refer to:

- Application, Section 6.2, Figure 6.11 (PDF p. 19)
- MIPUG/MH I-21 – Long-Term Risk Trends

Question:

a) Please provide Midgard's view on how the development of long-term risk trends - specific to generation, AC and DC transmission, sub-transmission, and distribution components of the electric system - may be useful for planning and prioritization of operational and capital spending related to reliability performance.

Rationale for Question:

Components of an effective asset management plan specific to planning for reliability performance across the electric system.

Response:

a) The development of long-term risk trends is part of asset management and capital planning for the entire electric system and for asset sub-groups. Midgard's primary concern is that the tools MH uses to justify its proposed operational and capital spending are not fully developed, are implemented inconsistently across the organization, and often rely on poor quality inputs. As a result, while developing long-term risk trends is important, MH's current asset management maturity is insufficient to produce these trends in a robust, quantifiable, granular and objective manner.[9]

   As stated in Midgard's evidence:

   > *"Although MH is making measurable progress maturing its asset management practices, MH's current asset management practices do not yet support consistent and objective prioritization of capital and Operations and Maintenance ("O&M") spending across or within business lines. MH's efforts at maturing its asset management practices have to date been focused on developing high level asset management strategy and processes, such as the*

[9] Manitoba Hydro Response to MIPUG/MH I-21, p. 1 of 1.

> *Strategic Asset Management Plan ("SAMP"), but the field level asset management data, processes and culture have not yet matured adequately to achieve the intended outcomes of the SAMP.*
>
> …
>
> *In short, MH does not appear to believe its AMP outputs, because if it did it would present an AMP that understood and respected its resource constraints and would provide an objective analysis of the spending trade-offs resulting from those constraints. Instead, MH has presented an AMP that calls for more spending than is proposed in rates, but asks for approval of rates based on BOC investments lower than the AMP recommendation. This disconnected approach to asset management implies that needed operational or risk mitigation projects will not occur, or that the AMP overstates need. Planning to fail is not a prudent way to deliver maximum value to ratepayers."* [footnotes omitted][10]

And:

> *"AMCL reporting highlights incomplete or non-standardized data, which undermines effective decision-making and perpetuates poor risk management practices. As AMCL notes:*
>
> > *"The information systems are not yet in place to allow the capture of actual capital maintenance (life extension, enhancement, lifecycle renewals) and actual operating costs (including fault and incident response costs) that would help identify and forecast the risk cost being carried." [11]*
>
> *This lack of high-quality data leads to subjective and impaired decision making. Decisions based on incomplete or non-standardized asset data lead to poorer quality decisions, as evidenced by MH's inability to accurately assess risks and allocate resources."* [12]

Consequently, although long-term risk trends such as those in Figure 6.11 may eventually inform the planning and prioritization of operational and capital spending related to reliability performance, MH has not yet reached an asset management maturity level that supports its claimed long-term risk trends, the timing of those risks, or a sufficiently granular breakdown of trends across its existing asset groupings (e.g., Generation, HVDC Transmission, AC Transmission, and Distribution).[13]

---

[10] Exhibit CC-13, Section 1, p. 9, l. 2-7 & l. 13-19.
[11] Exhibit MH-1, Appendix 6.3, Section 3.2.2, p. 21.
[12] Exhibit CC-13, Section 6.2, p. 46, l. 27 to p. 47, l. 6.
[13] Manitoba Hydro Response to MIPUG/MH I-21, p. 1 of 1.

MIPUG/COALITION I-5

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	4
Topic:	Distribution Net Income.		
Subtopic:			

Preamble (if any):

Ms. Derksen submits:

> *"Because distribution level customer classes – Residential and GSS - contribute to greater levels of Net Income based on current functional rate base composition, compared to GSL classes, it is anticipated there will be a negative cost impact on distribution intensive classes."*

Question:

(a) Please confirm that, per PCOSS26 Table B1, the COS includes $226 million in Net Income.

(b) Please confirm that, per PCOSS26 Table C2, 85.4% of the Net Income is collected as part of the Generation, Transmission and Subtransmission functions (based on total Interest and Reserve cost of $1,180.7 million, Generation share of $871.6 million, Transmission share of $101.3 million and Subtransmission of $35.1 million).

(c) Please confirm that this means the total net income collected from the Distribution Services, Distribution Plant, Ancillary Services, Diesel and Lighting functions totals only 14.6% of the Net Income, or $33.1 million.

(d) Please confirm that, per PCOSS26 Table A3, the total costs of the Distribution Services and Distribution Plant are $579.5 million. ($131.3 million plus $448.2 million).

(e) Please confirm that Net Income makes up less than 6% of the costs allocated to the distribution system ($33.1 million out of $579.5 million).

(f) Does Ms. Derksen contend that $33.1 million, or less than 6% of total costs, is an overallocation of net income to the distribution system?

(g) Please confirm that using the same methods as above for the Generation, Transmission and Subtransmission functions, the share of costs made up of Net Income is $193 million out of a total $1,483 million, or 13%.

Response:

Response to Questions a)-e) & g):

It is confirmed that PCOSS26, based on the 2025/26 Test Year reflects $226 million in Net Income, which MH projects will double over the course of the financial forecast.[14] Forecasted Net Income will continue to increase over the financial forecast period in order to support future generation and transmission investment but which will continue to be allocated on the current asset base until new generation and transmission infrastructure comes online (used and useful). This will have inter-class implications in the PCOSS that require either explicit consideration (through the modification of cost-of-service methodology) or qualitative consideration (through the interpretation of class RCCs in the translation of cost to rates).

While the degree of inter-class impact is unclear at this time, it is clear that the raw RCCs flowing from PCOSS26 are unreliable in of themselves for the establishment of rates, absence of any other qualitative cost considerations or ratemaking objectives beyond cost causation.

Response to Question f):

While the magnitude today is unclear, or potentially not significant today, it will materialize overtime, on the basis that some level of Net Income in the current Test Year is collecting for planned future generation and transmission investment. This is one reason of many, why the use of a Range of Reasonableness is important, that setting rates at unity is inappropriate, and is an important consideration in the translation of class RCCs to rates.

[14] MH/CC II-82; IFF, pg. 7 – to over $500 million by 2045

MIPUG/COALITION I-6

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	51
Topic:	RCC Ratios		
Subtopic:			

Preamble (if any):

Ms. Derksen indicates that, in future, net export revenues will decrease, and that:

> *"The reduction in NER will automatically push the GSL classes in or near the ZOR (i.e. naturally self correcting) and should be considered in the interpretation of RCCs."*

Question:

(a) Please provide a full list of the evidence and exhibit references for submissions in Manitoba that Ms. Derksen has filed (as expert), or has contributed to producing (as a Manitoba Hydro internal witness) over the past 20 years where Ms. Derksen has indicated RCC ratios will, in future, be "naturally self-correcting". Please identify each proceeding and specifically address testimony linked to the following events:

(i) The reduction in net exports associated with export price reductions and the 2008 financial crisis.

(ii) The initiation of service of Wuskwatim.

(iii) The initiation of service of Bipole III.

(iv) The initiation of service of Keeyask.

(v) The ending of high water conditions experienced in the last GRA.

(vi) Any additional events that Ms. Derksen concluded would cause the RCC ratios to naturally self-correct.

Response:

In the absence of significant time required to research the request over the last 25 years, Ms. Derksen is unable to respond. Ms. Derksen recalls leading testimony with respect to self correcting RCCs as part of the MH 2019/20 GRA and the MH 2023/24 GRA.

MIPUG/COALITION I-7

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	11
Topic:	Government Charge Relief		
Subtopic:			

Preamble (if any):

Ms. Derksen indicates that the reduction in water rental fees has harmed her clients in the Residential class and advocates reversing the reduction in charges. Ms. Derksen further states that Hydro has modelled the water rental reduction incorrectly, which harms the class of customers on whose behalf she files evidence.

The reduction in water rentals was addressed in the previous GRA, and no further reductions have occurred since that time. In that GRA Order (Order 101-23), the Board concluded (s.14.3):

> *"The Board is satisfied that PCOSS24 appropriately reflects the Board's previous rulings on Manitoba Hydro's cost of service methodology. This includes the allocation of the reduced water rental fee and debt guarantee fee, for which the cost of service treatment remains identical to prior cost of service studies."*

Hydro produced the following Table to show the water rental reduction benefits by class from 2018 to 2026 (Coalition/MH-II-55d), showing material dollar value of benefits for each class:

Table 5 – Water Rental by Class

CLASS	PCOSS26 ($ Million)	PCOSS24 ($ Million)	PCOSS21 ($ Million)	PCOSS18 ($ Million)
Residential	25.2	28.0	44.8	41.1
GSS Non Demand	5.6	6.7	9.4	8.5
GSS Demand	5.6	5.5	12.0	11.1
GSM	8.9	9.4	16.3	16.3
GSL 0-30 kV	5.2	5.8	10.0	8.7
GSL 30-100 kV	5.4	5.6	9.6	7.6
GSL >100 kV	9.0	9.3	20.0	21.2
A&R Lighting	0.2	0.2	0.3	0.4
Total Water Rentals	65.1	70.5	122.4	114.7

The Hydro table has been compared to the sales by class from each respective PCOSS in the Table below:

Water Rentals

$M	PCOSS26	PCOSS24	PCOSS21	PCOSS18
Residential	25.2	28	44.8	41.1
GSS ND	5.6	6.7	9.4	8.5
GSS D	5.6	5.5	12	11.1
GSM	8.9	9.4	16.3	16.3
GSL 0-30	5.2	5.8	10	8.7
GSL 30-100	5.4	5.6	9.6	7.6
GSL > 100	9	9.3	20	21.2
ARL	0.2	0.2	0.3	0.4
Total	65.1	70.5	122.4	114.9

sales at meter (GW.h)				
Residential	8487	8097	7694	7586
GSS ND	1972	2038	1683	1623
GSS D	1973	1711	2188	2146
GSM	3223	2957	3005	3204
GSL 0-30	1935	1876	1874	1745
GSL 30-100	2099	1932	1881	1578
GSL > 100	3553	3249	3997	4505
ARL	67	61	49	82
Total				

cents/kW.h					Change PCOSS18 to PCOSS26
Residential	0.30	0.35	0.58	0.54	0.24
GSS ND	0.28	0.33	0.56	0.52	0.24
GSS D	0.28	0.32	0.55	0.52	0.23
GSM	0.28	0.32	0.54	0.51	0.23
GSL 0-30	0.27	0.31	0.53	0.50	0.23
GSL 30-100	0.26	0.29	0.51	0.48	0.22
GSL > 100	0.25	0.29	0.50	0.47	0.22
ARL	0.30	0.33	0.61	0.49	0.19

Based on this comparison, the Residential class (and GSS-ND) is, in fact, the largest beneficiary of the water rental reduction, since it lowers its costs by 0.24 cents/kW.h, as compared to 0.19-0.23 cents/kW.h for the other classes.

Question:

(a) Please confirm that the water rental reduction brought material benefits to the Residential class's allocated costs, larger than any other class except GSS-ND (which also benefitted 0.24 cents/kW.h)

(i) If no, then please recalculate the table in the preamble to show the impact on the Residential allocated cost in cents/kW.h from the water rental reduction, including the source of any input values.

(b) Please confirm that Hydro continues to allocate water rentals in the same manner as PCOSS24, which the Board concluded was appropriate.

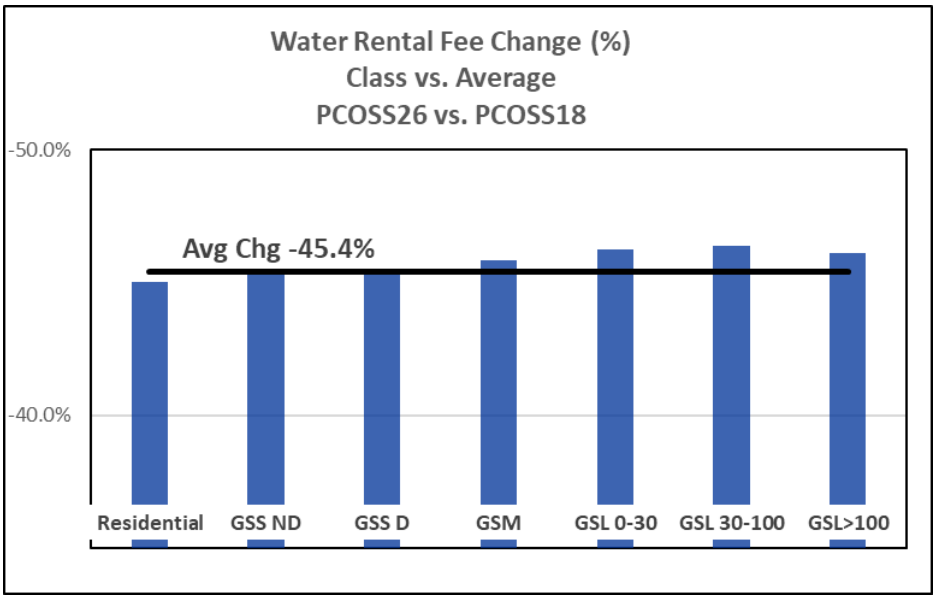
Response:

a) In absolute terms, of course its no surprise that the largest class benefits to the largest degree. However, the unit cost analysis presented above is not a fair representation, from a cost allocation perspective, for at least a couple of reasons.

First, the analysis prepared compares PCOSS26 to PCOSS18, which includes years prior to the change in Water Rental Fees which occurred in PCOSS24. This is an inappropriate comparison because it reflects not only changes in Water Rental Fees, but also volumetric changes in irrelevant periods prior to the change (that is, PCOSS18).

Secondly, it is not appropriate to look at the class unit cost change on an absolute basis because significant differences between classes will distort the conclusions. Instead, for purposes of cost allocation, the most important comparison is each class's change relative to the average change. This is because the PCOSS is much like a multi-variable accounting cost analysis with number of factors at play including i) the change in the cost of Water Rentals; ii) each class's isolated volumetric changes; and iii) each class's isolated volumetric changes vis a vie other classes; and iv) each class's Water Rental Fee allocation relative to all other classes. It is the interclass interplay that is critically important in the PCOSS.

Even if one could ignore the fact that PCOSS18 is well before any Water Rental Fee reduction, the more appropriate comparison is shown in the following chart:

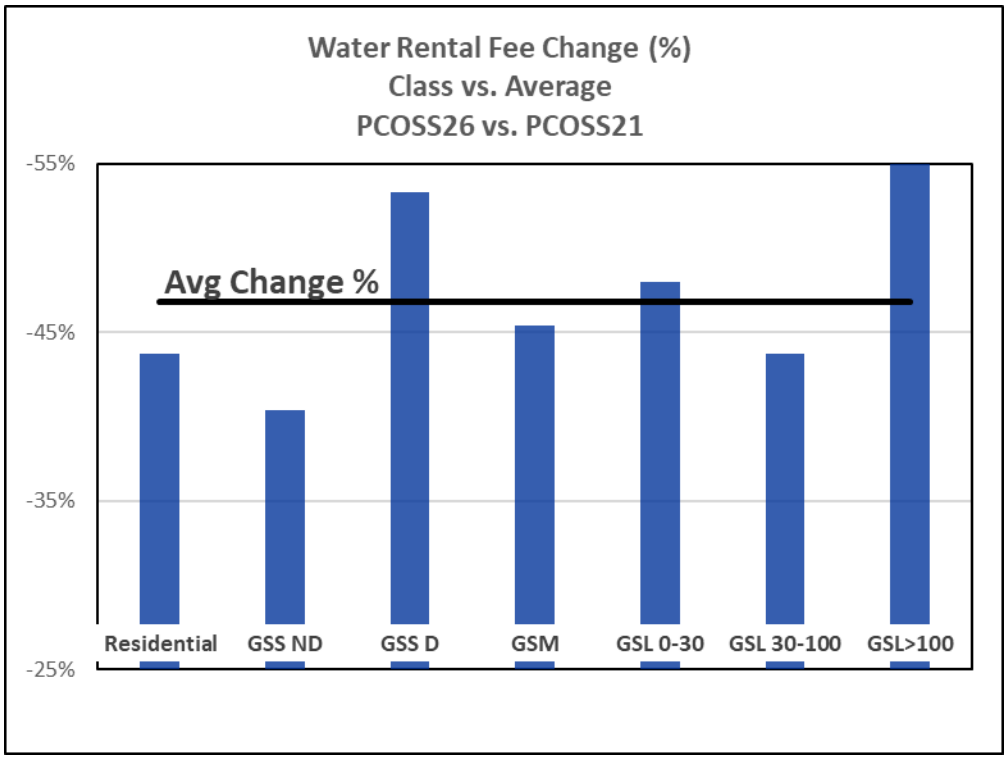


The data source for chart is provided below which was extracted from the preamble to this information request:

cents/kWh	PCOSS18	PCOSS26	Inc/(Dec)	% Change
Residential	0.54	0.30	(0.24)	-45.0%
GSS ND	0.52	0.28	(0.24)	-45.4%
GSS D	0.52	0.28	(0.24)	-45.4%
GSM	0.51	0.28	(0.23)	-45.9%
GSL 0-30	0.50	0.27	(0.23)	-46.3%
GSL 30-100	0.48	0.26	(0.22)	-46.4%
GSL>100	0.47	0.25	(0.22)	-46.1%
Total	0.51	0.28	(0.23)	-45.4%

This chart demonstrates that the only class with a below average benefit, which is the important comparator for purposes of the PCOSS, is the Residential class, despite on an absolute basis, one would conclude this class is the largest beneficiary.

That said, it is inappropriate to consider PCOSS18 because it was prepared well before the Water Rental Fee reduction which did not occur until PCOSS24. The chart below compares PCOSS26 to PCOSS21 (the most current PCOSS prior to the reduction in Water Rental Fees) to the average change which better depicts the class impact between these test years:



The data source for chart is provided below which was extracted from the preamble to this information request:

$M	PCOSS21	PCOSS26	Inc/(Dec)	% Change
Residential	44.8	25.2	(19.6)	-44%
GSS ND	9.4	5.6	(3.8)	-40%
GSS D	12.0	5.6	(6.4)	-53%
GSM	16.3	8.9	(7.4)	-45%
GSL 0-30	10.0	5.2	(4.8)	-48%
GSL 30-100	9.6	5.4	(4.2)	-44%
GSL>100	20.0	9.0	(11.0)	-55%
Total	**122.1**	**64.9**	**(57.2)**	**-47%**

As can be observed, there are several classes that benefit to a greater degree compared to average including the GSL>100kV, GSL 0-30kV and the GSS D classes.

Third, it should be noted that the benefits of lower Water Rental Fees will ebb and flow for each class between each PCOSS, depending on the overall level of Water Rental Fees forecasted as well as each class's volume forecast. While the above analysis demonstrates the higher benefits provided to the largest GSL>100 kV class, at the expense of other classes, and the Residential class in particular, based on the specific PCOSS assessed, more importantly, it is expected that over the long term, because of the current treatment of Water Rental Fees within the PCOSS, the largest GSL classes will benefit to a greater degree.

b) It is Ms. Derksen's understanding that MH continues to allocate Water Rental Fees in the same manner as prior PCOSS. The implications of the allocation of Water Rental Fees to class RCCs raised as part of the MH 2023/24 GRA may have been one factor considered by the PUB in its attenuated approach to rate differentiation flowing from the MH 2023/24 GRA.

MIPUG/COALITION I-8

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	21
Topic:	Government Charge Relief		
Subtopic:			

Preamble (if any):

Ms. Derksen produced Chart 5 as follows in her evidence:

Chart 5: Overall Class RCC & Net Cost Due to Government Payment Relief[22]:

CLASS	(1) PCOSS26 RCC With Higher Fees and Taxes	(2) PCOSS26 RCC	(3) (2 – 1) Differential Benefit due to Reduced Fees and Taxes	(4) Overall Direct Benefit due to Reduced Fee	(5) (3 + 4) Combined Benefit due to Reduced Fee
Residential	97.4%	96.9%	-0.5%	13.2%	12.7%
GSS Non Demand	108.4%	108.0%	-0.4%	13.2%	12.8%
GSS Demand	95.9%	96.0%	0.1%	13.2%	13.3%
GSM	97.4%	97.8%	0.4%	13.2%	13.6%
GSL 0-30 kV	99.9%	100.9%	1.0%	13.2%	14.2%
GSL 30-100 kV	108.1%	110.4%	2.3%	13.2%	15.5%
GSL >100 kV	108.0%	110.6%	2.6%	13.2%	15.8%
A&R Lighting	108.3%	104.2%	-4.1%	13.2%	9.1%

Ms. Derksen concludes that:

> *"While the reduction in Government payments provides a directional overall 13.2% reduction in revenue requirement, there are differential impacts between classes, with the Residential class benefiting the least (12.7% compared to the overall 13.2%) and the GSL>100 kV class benefitting most greatly by as much as almost 3.0% greater than average."*

And:

> *"Even if one were to accept at face value the analysis underpinning Chart 5 it at a minimum demonstrates that the Residential and GSSND classes will benefit less from the payment relief with all other classes benefitting to a greater degree and is of concern."*

It appears Ms. Derksen has failed to recognize that the percentages quoted are being applied to a different base in terms of rates. The following table adds the average rate revenue by class to show the net benefit from reducing the government charges, by class (in cents/kW.h):

CLASS	(1) PCOSS26 RCC With Higher Fees and Taxes	(2) PCOSS26 RCC	(3) Differential Benefit due to Reduced Fees and Taxes	(4) Overall Direct Benefit due to Reduced Fee	(5) Combined Benefit due to Reduced Fee	(6) Net Cost ($M) PCOSS26 Table A1	(7) Sales (GW.h) PCOSS26 Table A2	(8) Average Unit Cost cents/kW.h [(6)/(7)]	(9) Net Benefit cents/kW.h [(5)*(8)]
Residential	97.4%	96.9%	-0.5%	13.2%	12.7%	936.7	8487	11.04	1.40
GSS Non Demand	108.4%	108.0%	-0.4%	13.2%	12.8%	191.8	1972	9.73	1.24
GSS Demand	95.9%	96.0%	0.1%	13.2%	13.3%	185.4	1973	9.40	1.25
GSM	97.4%	97.8%	0.4%	13.2%	13.6%	269.2	3223	8.35	1.14
GSL 0-30 kV	99.9%	100.9%	1.0%	13.2%	14.2%	132.5	1935	6.85	0.97
GSL 30-100 kV	108.1%	110.4%	2.3%	13.2%	15.5%	108.2	2099	5.15	0.80
GSL >100 kV	108.0%	110.6%	2.6%	13.2%	15.8%	170.4	3553	4.80	0.76
A&R Lighting	108.3%	104.2%	-4.1%	13.2%	9.1%	26.1	67	38.96	3.54

Question:

(a) Please confirm that the government charge reductions Ms. Derksen referenced in her Chart 5, in fact, represent a much larger reduction for the class she advocates for (Residential) at 1.40 cents/kW.h than for any other class except Streetlighting.

(i) If no, then please recalculate the table in the preamble to show the impact on the residential allocated cost in cents/kW.h from the water rental reduction, including the source of any input values.

(b) If Ms. Derksen concludes that the classes should benefit equally, is it a reasonable proposal to instead allocate the government charge reduction as an equal cents/kW.h to each class (i.e., retain the fictional higher previous government charges in the PCOSS but apply the government charge reduction as an equal cents/kW.h to all classes)? Why or why not?

(c) Alternatively, is it more reasonable to simply model the new resulting government charges using established PCOSS methods, and avoid the need to track the old charge levels versus the revised charge levels?

Response:

a) No. As discussed in MIPUG/Coalition I-7, of course, the largest class will receive the overall largest benefit on an absolute basis, which goes without saying. However, this is an inappropriate representation of the inter-class impacts of the benefits for at least a couple of reasons. First, and most important, it is not appropriate to look at the class unit cost change on an absolute basis because the significant differences between classes will distort the conclusions. Instead, for purposes of cost allocation, the most important comparison is each class's change relative to the average change. Secondly, the analysis presented in this IR applies

the impact over each class's total Test Year volumes. This is incorrect because the PGF and Capital Taxes are allocated on the basis of Rate Base (in the current Test Year) which includes the demand-related components of all functions. While it is likely this was a simplification for demonstration purposes, the materiality associated with this oversimplification is unclear.

A more reasonable depiction of the interclass impacts is provided in the chart below[15]:

Net Cost ($ millions)	PCOSS26 As Filed	PCOSS26 Incr. Fees/Taxes	Inc/(Dec) $	Inc/(Dec) %
Residential	936.7	931.5	5.2	0.6%
GSS ND	191.8	191.1	0.7	0.4%
GSS D	185.4	185.5	(0.1)	-0.1%
GSM	269.2	270.1	(0.9)	-0.3%
GSL 0-30	132.5	133.8	(1.3)	-1.0%
GSL 30-100	108.2	110.5	(2.3)	-2.1%
GSL >100	170.4	174.6	(4.2)	-2.5%
ARL	26.1	25.1	1.0	3.8%

As can be observed, based on PCOSS26, the Residential class are allocated over $5 million more simply on account of the PCOSS treatment of lower fees and taxes which is largely a result of the shift of cost away from the GSL>100 kV class.

b) An interesting question. Ms. Derksen's initial response is that the suggestion is intriguing, and merits further review by MH. Ultimately, the appropriate treatment should stem from what is the intent of the payment relief, to the best it can be discerned. To the extent that the intent is to provide rate affordability relief broadly to all customers, then, yes, the suggestion appears reasonable but would require further analysis and assessment. If the intent of the payment relief is to provide both broad and targeted affordability relief (say to vulnerable customers), then the suggestion on its own may not be adequate.

c) The question is somewhat unclear. If the question is suggesting ignoring the COS impacts associated with the current treatment of Government Payment relief, the response is no, that is not an acceptable alternative from Ms. Derksen's perspective.

[15] Derksen Evidence, pg. 21

MIPUG/COALITION I-9

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	25
Topic:			
Subtopic:			

Preamble (if any):

Ms. Derksen notes at page 6 that Hydro is:

> *"prefunding of Reserves through higher levels of Net Income, largely attributable to planned significant generation and transmission capital expenditures"*

At page 25, Ms. Derksen notes:

> *"Additionally, there is a fourth option similar to the prefunding of Bipole III expenditures that occurred beginning in 2013. Order 43/13 directed MH to set aside 1.5% of its approved 3.5% rate increase in a deferral to assist in funding Bipole III. The PUB found that given significant costs would have to be recovered from ratepayers once the project was in-service, the deferral account would allow funds to be collected while Bipole III was being built (that is, before the asset is used and useful) and would help mitigate rate increases required once placed in-service. In order to avoid the potential inter-class impacts flowing from PCOSS, MH set aside revenue uniformly on an equal percentage by class basis and returned to each class on the same basis."*

It appears Ms. Derksen is contending that Hydro's net income is primarily for the purpose of prefunding reserves for major new capital projects, and that a good precedent for this is the Bipole III reserve.

Question:

(a) If Hydro's net income is effectively for prefunding future capital, similar to Bipole III, would it make more sense to entrench the Bipole III approach to funding reserves, allocating all net income in the PCOSS as an equal percentage adder to each class's otherwise allocated costs, absent net income?

Response:

a) To be clear, Ms. Derksen's evidence is not stating or implying that MH's entire Net Income is intended only for prefunding future capital. The Company has made it clear that some portion of its rate asks in this Application (and future rate proposals) is intended for this purpose.

Ms. Derksen would be supportive of further exploration of this suggestion by the Company, recognizing that net income that follows rate base is generally accepted

as the best allocator, at least when there is a close/reasonable connection between current net income and current rate base.

MIPUG/COALITION I-10

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	27
Topic:	O&M		
Subtopic:			

Preamble (if any):

Ms. Derksen produces the following table (copied from Hydro's response to Coalition II-53e) indicating what she considers an "exceedingly difficult to accept" conclusion - that the fair level of O&M for the GSL >100 kV class has grown by only 8.3% from PCOSS18 to PCOSS26, while other classes have grown by much larger percentages.

O&A	PCOSS18 ($ M)	PCOSS26 ($ M)	Inc/(Decr) ($M)	%
Residential	242.3	387.0	144.7	59.7%
GSS ND	44.9	79.8	34.9	77.7%
GSS D	48.9	71.1	22.2	45.4%
GSM	65.8	102.0	36.2	55.0%
GSL 0-30	30.2	48.5	18.3	60.6%
GSL 30-100	20.7	37.4	16.7	80.7%
GSL>100	53.9	58.4	4.5	8.3%
Total	515.2	795.7	280.5	54.4%

Ms. Derksen does not reference a table requested by Coalition in the same Information Request that immediately precedes the above table, in Coalition II-53d. The earlier table indicates that the largest driver of O&M growth is the distribution plant, of which the GSL class makes very little use. Ms. Derksen also does not appear to consider in this analysis the fact that the GSL >100 kV class received a large reduction in Customer Service allocation of O&M due to Board Order 164/16, which concluded various costs should not be allocated to industrials:

Table 7 – Allocation of Functionalized O&A by Class: % Change PCOSS26 vs PCOSS18

Customer Class	Generation (%)	Trans (%)	Subtran (%)	Dist Plant (%)	Cust Service (%)	Total (%)
Residential	39%	40%	33%	43%	26%	37%
GSS ND	44%	46%	39%	48%	38%	44%
GSS D	28%	32%	24%	39%	28%	31%
GSM	33%	34%	27%	40%	44%	36%
GSL 0-30 kV	37%	35%	28%	45%	33%	38%
GSL 30-100 kV	47%	45%	39%	75%	11%	45%
GSL >100 kV	11%	8%	0%	79%	-46%	8%
SEP	0%	0%	0%	65%	66%	66%
A&RL	17%	20%	11%	26%	39%	26%
Diesel	32%	0%	0%	40%	0%	33%
Total	35%	36%	32%	42%	28%	35%

Ms. Derksen's conclusion that the change is "exceedingly difficult to accept" dismisses the fact that Hydro indicates that loads have grown for most classes, but declined for GSL >100 kV since PCOSS18.

Once adjusted for these factors (i.e., excluding distribution and customer service) and turned into a unit value, the table cited by Ms. Derksen would appear as follows:

Generation, Transmission and Subtransmission O&M

$M	PCOSS26	PCOSS24	PCOSS21	PCOSS18
Residential	215.5	174.4	134.5	131.2
GSS ND	44.5	38.5	25.8	24.8
GSS D	44.3	31	32.3	31.6
GSM	66.5	51	42.3	44.8
GSL 0-30	36	31.9	25	22.8
GSL 30-100	35.5	28.3	22.9	19.1
GSL > 100	58.8	46.3	47.3	53.3
ARL	1.4	1.1	0.6	1.2

sales at meter (GW.h)				
Residential	8487	8097	7694	7586
GSS ND	1972	2038	1683	1623
GSS D	1973	1711	2188	2146
GSM	3223	2957	3005	3204
GSL 0-30	1935	1876	1874	1745
GSL 30-100	2099	1932	1881	1578
GSL > 100	3553	3249	3997	4505
ARL	67	61	49	82

cents/kW.h					Change PCOSS18 to PCOSS26
Residential	2.54	2.15	1.75	1.73	47%
GSS ND	2.26	1.89	1.53	1.53	48%
GSS D	2.25	1.81	1.48	1.47	52%
GSM	2.06	1.72	1.41	1.40	48%
GSL 0-30	1.86	1.70	1.33	1.31	42%
GSL 30-100	1.69	1.46	1.22	1.21	40%
GSL > 100	1.65	1.43	1.18	1.18	40%
ARL	2.09	1.80	1.22	1.46	43%

Question:

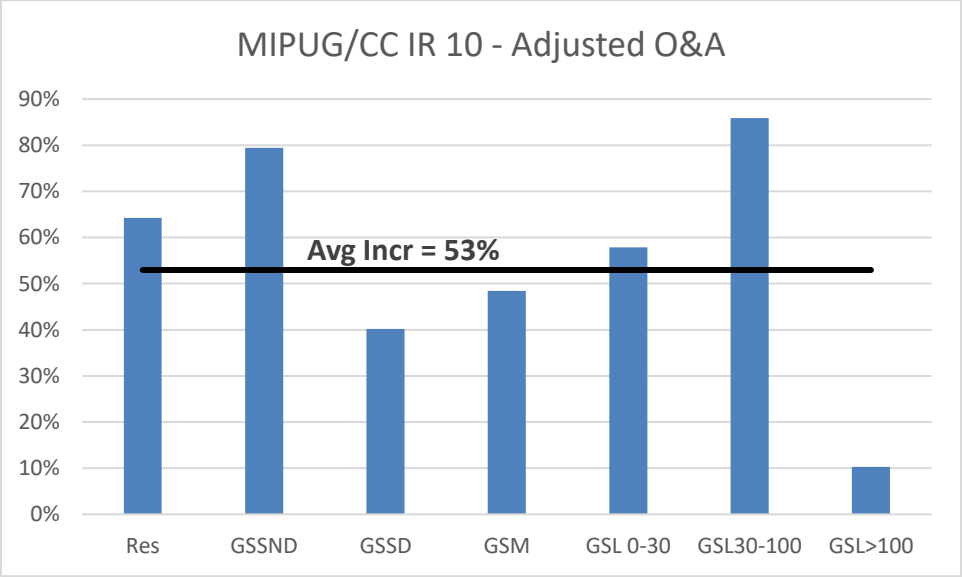
(a) Considering the information in the preamble, including the fact that for Generation, Transmission and Subtransmission O&M, the average cost per kW.h over an 8 year period (PCOSS18 to PCOSS26) has been within a narrow range for all classes (i.e., 40% to 52%), does Ms. Derksen still reach the same conclusion that the changes do "not appear to be reasonable or credible" (Derksen, page 28)?

Response:

a) Yes, Ms. Derksen continues to be of the view that the allocation of O&A to the largest GSL class does not appear to be reasonable as discussed below.

First, and most importantly, Ms. Derksen's argument is largely policy related rather than one focused on the technical workings of the PCOSS as it relates to O&A. From a policy perspective, Ms. Derksen is questioning the legitimacy of the PCOSS results which allocates less than 10% of the increase in O&A to the GSL class, a fraction of the increase in CPI over the period of analysis.

Secondly, for the reasons cited in response to MIPUG/Coalition I-7, the unit cost analysis provided in the preamble does not represent a reasonable interclass comparator. However, even if the cost adjustments provided in the preamble are accepted a face value, and representing each class's change as a function of the overall average, which is an appropriate comparator for purposes of class cost to serve, the result is still closely aligned with Chart 6 (pg. 26) of Ms. Derksen's evidence[16] demonstrating the minimal allocation of O&A costs since PCOSS18 as shown below:



[16] It is noted that the underlying adjustments made to exclude distribution and customer service costs were not provided and therefore cannot be validated.

The data source for this chart was extracted from the preamble in the table below:

MIPUG 10	**PCOSS26**	**PCOSS18**	**Inc**
	$M	$M	
Res	215.5	131.2	64%
GSSND	44.5	24.8	79%
GSSD	44.3	31.6	40%
GSM	66.5	44.8	48%
GSL 0-30	36.0	22.8	58%
GSL30-100	35.5	19.1	86%
GSL>100	58.8	53.3	10%
Avg	**501.1**	**327.6**	**53%**

MIPUG/COALITION I-11

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	Chart 10
Topic:	Undocumented Sources		
Subtopic:			

Preamble (if any):

Ms. Derksen provides a Chart 10, which is not sourced.

Question:

(a) Please provide the source and all calculations performed by Ms. Derksen (if any) to produce Chart 10.

Response:

The data underpinning Chart 10 was provided by response to MH/GSS I-6f, consolidated in the table below:

Potential Variance in RCCs Source: GSS I-6f	PCOSS26 As Filed	PCOSS26 Low	PCOSS26 High	Range
Residential	96.9%	94.2%	99.5%	5.3%
GSS ND	108.0%	101.9%	113.6%	11.7%
GSS D	96.0%	91.0%	100.6%	9.6%
GSM	97.8%	95.2%	100.7%	5.5%
GSL 0-30	100.9%	97.1%	104.3%	7.2%
GSL 30-100	110.4%	108.8%	112.3%	3.5%
GSL >100	110.6%	109.2%	112.3%	3.1%

MIPUG/COALITION I-12

Part and Chapter:	Evidence of Kelly Derksen	**Page #:**	48
Topic:	RCC and ZOR		
Subtopic:			

Preamble (if any):

Ms. Derksen provides RCCs showing various changes arising from her evidence, plus the impact of differential rates, in Chart 19, as follows:

Chart 19: Differentiated Rates & Some RCC Adjustments

	PCOSS26 Filed	PCOSS26 Diff Rates PUB/MH I-71	PCOSS26 Total RCC Adjustments	PCOSS26 Diff Rates & Inter-Class
Residential	96.9%	98.2%	1.6%	99.8%
GSS ND	108.0%	105.0%	1.4%	106.4%
GSS D	96.0%	97.3%	0.7%	98.0%
GSM	97.8%	99.2%	-0.2%	99.0%
GSL 0-30	100.9%	102.3%	-2.2%	100.1%
GSL 30-100	110.4%	105.0%	-7.8%	97.2%
GSL >100	110.6%	105.0%	-9.1%	95.9%

Question:

(a) Please provide all calculations (including Excel format) and sources for all inputs used to produce Chart 19.

Response:

a) The referenced Chart 19 begins with the RCC data as provided in PUB/MH I-71 and adds the Total RCC Adjustments, derived as shown in Chart 17, Derksen Evidence page 46.

MIPUG/COALITION I-13

Part and Chapter:	Evidence of Kelly Derksen, Section 5.4.2; GSS-GSM/MH II-5d; GSS-GSM/MH I-6f	**Page #:**	
Topic:	Overall PCOSS Impacts due to Load Research		
Subtopic:	Interpretation of Sampling Precision		

Preamble (if any):

Ms. Derksen states:

> *"Secondly, while MH states that the above level of impact on class RCCs represents the maximum potential variability that is unlikely to occur, it nevertheless can impact class RCCs from 3% to nearly 12%."* (Page 35)

Manitoba Hydro states:

> *"… Manitoba Hydro does not agree that each RCC ratio within the range are all equally likely to occur. The scenarios provided in the response to GSS-GSM/MH I-6 f) were designed to illustrate the absolute widest possible range in RCCs that could occur given the relative precision of the Load Research Study sample."* (GSS-GSM/MH II-5d)

Question:

(a) Does Ms. Derksen agree that values at the extreme ends of a sampling distribution are statistically less likely than values near the mean? If no, please explain.

(b) Does Ms. Derksen agree that the RCC ranges shown in GSS-GSM/MH I-6f represent theoretical extremes based on applying the full precision range to both CP and NCP load factors, and are not expected outcomes? If no, please explain.

(c) Please provide the sources and calculations supporting the statement:

> "*…it nevertheless can impact class RCCs from 3% to nearly 12%."*

Rationale for Question:

To clarify that the ±10% design accuracy relates to sampling precision for estimating the mean, not actual load factor or RCC variability.

Response:

a) Yes.

b) The question is difficult to answer because there appears to be a mixing of PCOSS/RCCs and the statistical validity of Load Research. The assessment of

RCCs flowing from a cost allocation study is not a statistical exercise because there are multiple legitimate methods of cost allocation, each of which would produce a different true value and outcome (i.e. class RCCs). This means there are multiple possible ways of defining class cost to serve and therefore a range of values that are the true value.

In a probabilistic analysis, however, like Load Research or a sample survey, there is a true value that is being estimated.

While a Range of Reasonableness is not likely to capture every possible difference in determining class cost to serve, it should be broad enough to most differences.

c) Please refer to the table GSS/MH I – 6f, page 4 of 4.