MANITOBA HYDRO

FISCAL 2026-2028 GENERAL RATE APPLICATION

CONSUMERS COALITION

INFORMATION REQUESTS TO THE MANITOBA INDUSTRIAL POWER USERS GROUP (MIPUG)

October 1, 2025

Room 400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4
www.pubmanitoba.ca

330, avenue Portage, pièce 400
Winnipeg (Manitoba) Canada R3C 0C4
www.pubmanitoba.ca

COALITION/MIPUG I-1

Part and Chapter:	Mr. Bowman's Evidence, Section 2.4	**Page #:**	23
Topic:			
Subtopic:			

Preamble (if any):

In providing a recommendation with respect to the overall rate increases for the 2026 to 2028 Test Period, Mr. Bowman indicates that the alternative rate scenario in the response to Coalition/MH I-27(U), which uses a 2.5% rate path (Coalition Rate Scenario #3) in the GRA Test Years most closely reflects a combination of (i) revisions to MH's depreciation expense, (ii) his proposed changes to the MH corporate allocation, and (iii) a material downward revision in MH's operating costs.

The independent evidence of Mr. Darren Rainkie, filed on the record as Exhibit CC-23, characterizes PUB Order 101/23 as having placed "more emphasis on the test years than on [Manitoba Hydro's] long-term rate path…" (p 6).

Question:

a. In recommending 2.5% rate increases for each year of the Test Period (based on Coalition Rate Scenario #3), please explain if Mr. Bowman is placing (i) primary emphasis on the Test Years, (ii) primary emphasis on the 20-year long-term forecast, or (iii) primary emphasis on some period between the Test Period and the 20-year long-term forecast period.

b. Please explain the reasons related to Mr. Bowman's selection of a time period to place primary emphasis on related to his 2.5% rate increase recommendation.

Rationale for Question:

To obtain clarification on the period of time upon which Mr. Bowman is placing primary emphasis related to his recommendations with respect to the overall rate increases in the Test Period.

Response:

While none of the timeframes strictly represent the time frame of focus in the Bowman evidence, the most reasonable interpretation is that Mr. Bowman has focused on a time period somewhat between the Test Years and the full 20 year horizon. The timeframe of interest is to 2035 (10 years) and also to 2042 (17 years), which overlaps with the previous long-term forecasts available at the last 2 full GRAs. This horizon also allows the majority of years in the forecast to be the largely status quo infrastructure complement, before an excessive focus on the precise timing and cost of the major HVDC project, and the proxy capital resources, which remain speculative.

The full extremes have also been considered, with Mr. Bowman reviewing both the full 20 year forecast and consideration limited to the Test Years.

COALITION/MIPUG I-2

Part and Chapter:	Exhibit MIPUG-08, Section 4.3.1 Manitoba Hydro Response to COALITION/MH I-41(b)	Page #:	Pages 41-42 Page 4 of 4
Topic:	Wind Generation – Classification		
Subtopic	Wind Classification Principles		

Preamble (if any):

In Exhibit MIPUG-08, Mr. Bowman states:

"These conclusions are no longer consistent with the factual basis facing Manitoba Hydro.

First, Manitoba Hydro has specifically stated that wind generation yields capacity value All the energy produced by wind will be delivered to the Manitoba Hydro system and its output will vary between 0% and 100% of its installed capacity, depending primarily on the wind speed. Manitoba Hydro will count on 20% of the installed wind capacity as accredited capacity to meet its firm capacity (resource adequacy) requirements.

…

In short, the facts today are clearly no longer consistent with the Board's findings that wind is an energy only resource that does not contribute to winter peak capacity, and that future development was speculative. With the pursuit of 600 MW of indigenous-led wind resource, Manitoba Hydro indicates material added capacity contributions are anticipated, and sooner than previously estimated."

Manitoba Hydro states in response to COALITION/MH I-41(b), p. 4 of 4:

"The wind generation shows more variability, both above and below the 20% assumed wind accredited capacity for wind generation. The assumed accredited capacity value for wind generation is not a guarantee of output under peak load conditions, but rather a value of the additional load that could be carried in consideration of the rest of the power system and over many years of cold weather events."

Question:

a) At what percentage of accredited capacity as a ratio of nameplate capacity should wind be considered a non-energy only resource? In responding, please:

i. discuss the materiality threshold that must be crossed for wind to be considered a dependable capacity resource, (i.e., a resource that can be depended upon to produce a specified percentage of its nameplate rating at system peak); and

ii. quantify, or if that is not possible, describe directionally the impact on the dependable capacity of existing Manitoba wind resources resulting from the lack of meteorological diversity due to the constrained geographic footprint of the existing wind resource sites.

b) If industrial customers believe wind should be reclassified as a dependable capacity resource, please indicate whether they would be willing to shed an equivalent proportion of their load during peak demand periods when wind produces less than 20% of nameplate capacity. Please explain the incremental risk industrial customers would bear in this scenario if their position is that wind provides dependable capacity at 20% of nameplate rating.

c) Please discuss whether Mr. Bowman's critique of the Board's finding that *"wind is an energy only resource that does not contribute to wind peak capacity"* is primarily based on the MH statement that *"Manitoba Hydro will count on 20% of the installed wind capacity as accredited capacity"*. In doing so, please provide your understanding of what the actual wind generation data shows in terms of the variability of wind generation both above and below the 20% assumed wind accredited capacity for wind generation during peak periods.

d) Does Mr. Bowman consider that it is appropriate to classify wind resources as effectively 20% capacity resources when wind generation may fall significantly below 20% of installed nameplate capacity during peak load conditions? If yes, please explain the reasons.

e) Please provide examples of other generation resources which have accredited capacities that are above their dependable capacity during peak load conditions.

Rationale for Question:

To clarify the evidence pertaining to wind capacity.

Response:

a)

There is no specific percentage of accredited capacity at which wind should be considered as a non-energy-only resource. This is because no resource on the system operates independently. Wind is a part of a combined generating system, with various parts devoted to different roles, some more for capacity and some more for energy (and some exclusively for one or the other). For example, Appendix 6.4 (section

1.3.1.2.1) notes that Hydro may pursue additional units at Pointe du Bois to increase the capacity resources but not add energy resources.

Newfoundland Hydro has similar resources such as Bay D'Espoir Unit 8 which provides capacity but no additional energy (page 30 of the following document):

http://www.pub.nf.ca/applications/NLH2018ReliabilityAdequacy/correspondence/From%20NLH%20-%20Presentation%20-%20Technical%20Conference%202%20-%20Issue%204%20%20-%20Resource%20Supply%20Options%20-%202024-10-02.PDF

Similarly, BC Hydro is exploring developing a capacity-only 6th Unit at Revelstoke with limited if any energy benefits:

https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/projects/revelstoke-unit-6/revelstoke-generating-station-unit-6-project-fact-sheet.pdf

Other resources on the generating system provide primarily energy benefits. But the premise behind a COS System Load Factor classification is that the focus is on the load that must be served, not the individual resources themselves. The hydro system, plus thermal generation and wind work together to meet, in the lowest cost way, the relative capacity and energy needs of the end load, which is represented by the System Load Factor.

This principle was recognized by the Board as of Order 164-16, as follows (page 48):

> *The principal reason for classifying Generation costs as both Demand and Energy is that Manitoba Hydro plans for and invests in assets to satisfy both a winter peak capacity criterion and a dependable energy criterion. Meeting winter peak capacity is a critical requirement in Manitoba Hydro's operations and it drives certain investments. Peak capacity is not a by-product of meeting the dependable energy criterion. For example, hydroelectric facilities can have additional turbines installed in a given generating station that will increase capacity but not increase dependable energy. The additional capacity from these turbines, used in concert with other thermal and contracted resources, help satisfy the winter peak planning criterion. Classifying hydraulic generation, thermal generation, and import purchases as both Demand and Energy reflects the integrated nature of Manitoba Hydro's system and that these resources contribute both capacity and dependable energy and thus have cost causation traced to peak demand and energy consumption.*

As such, the specific accredited capacity, or similarly the specific dependable energy of a given resource is not determinative nor relevant to generation classification under a System Load Factor methodology.

This is also the same reason Nova Scotia Power has adopted the System Load Factor approach to classification of all generation resources as noted (Nova Scotia Energy Board proceeding M12451, Section 5.1):

> *Classifying generation assets to energy and demand using SLF is an approach that is used and has been tested by other utilities throughout Canada, which was a factor in NS Power's selection of the SLF method. The primary justification for using this method, as described in more detail in the Elenchus Report, is that SLF provides an allocator of both the demand and energy requirements to be served by the entire generation fleet. By applying this method consistently across the generation fleet, cost effects will average out across the fleet and result in an appropriate split of demand and energy costs, without becoming unnecessarily granular in analysis of generation and approach to generation resources. This proposed update recognizes that generation assets are designed and managed as part of an integrated system. Initial modelling also demonstrates that this approach will produce a similar cost effect to NS Power's current, disaggregated approach.*

As noted in the cited Elenchus study (pdf page 1617 of 1738 in the referenced document from M12451) Manitoba is the only cited jurisdiction in Canada that classifies utility-owned wind as 100% energy.

b)

No.

Further, there is no assertion that wind provides any specific dependable capacity in relation to nameplate capacity at any given hour.

c)

See (a)

d)

Yes. See (a).

e)

See (a).

COALITION/MIPUG I-3

Part and Chapter:	Exhibit MIPUG-09, Section 1.1	Page #:	Page 1-2
Topic:	Reliability Metric Recommendations		
Subtopic	Major Event Days and Asset Management		

Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen states:

"RECOMMENDATION 4.1: Specify minimum filing requirements for comprehensive reliability information, including metrics that report transparently on reliability performance across the Manitoba Hydro system, including sub-transmission independently of distribution and transmission."

Question:

Please clarify whether Recommendation 4.1 includes the requirement to report reliability metrics for SAIDI and SAIFI metrics both with and without Major Event Days. If not, please explain why not.

Rationale for Question:

To clarify Mr. Friesen's Recommendation 4.1.

Response:

Recommendation 4.1 does not specifically reference SAIDI and SAIFI indices with or without Major Event Days.

Recommendation 4.1 requests that core reliability information pertaining to the transmission and distribution system, also be provided for the sub-transmission system (as defined by Tariff No. 61). The categorization of information related to voltage levels within these respective transmission, sub-transmission, and distribution systems has not always been transparently referenced without additional inquiries through information requests.

Mr. Friesen does not object to the inclusion of additional information indicating SAIDI and SAIFI reliability performance without Major Event Days.

COALITION/MIPUG I-4

Part and Chapter:	Exhibit MIPUG-09, Section 3.1	Page #:	Page 3-1
Topic:	Sub-transmission Classification		
Subtopic			

Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen states:

"This evidence considers whether changes to the Definition of Billing Demand, approved in Board Order 101/23, and coming into effect on April 1, 2024, influenced consumption behavior among industrial customers in the GSL 30 – 100 kV (sub-transmission) and GSL >100 kV (transmission) subclasses."

Question:

a) Please confirm whether the 30 – 100 kV sub-transmission classification is a Manitoba Hydro classification or a MIPUG classification.

i. If a MIPUG classification, please explain why MIPUG uses this classification rather than Manitoba Hydro's classification.

Rationale for Question:

To clarify the sub-transmission voltage boundaries.

Response:

a)

The classifications used in evidence describe the voltage subclasses or voltage levels within the General Service Large rate category of which there are three(3):

- 750 V – 30 kV (sometimes referred to as <30 kV or "distribution")
- 30 – 100 kV (sometimes referred to as "sub-transmission")
- >100 kV (sometimes referred to as "transmission")

The above noted definitions reasonably reflect the interconnections of General Service Large customers as they related to the design and construct of the

Manitoba Hydro system. These references, or similar references, are used throughout the proceeding by participants.

i. As noted above, Appendix 7.3 refers to the GSL 750 V – 30 kV subclass, which does not strictly adhere to the terms used in Appendices 7.4, 7.5, and 7.6, which refer to General Service Large rates, applicable to:

- Large 750 V to not exceeding 30 kV – Tariff No. 2026-60
- Large 30 kV to Not Exceeding 100 kV – Tariff No. 2026-61
- Large Exceeding 100 kV – Tariff No. 2026-62

COALITION/MIPUG I-5

Part and Chapter:	Exhibit MIPUG-09, Section 4.1 & Section 4.4	Page #:	Page 4-1
Topic:	Reliability		
Subtopic	Industrial vs. Residential Reliability Requirements		

Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen states:

“This section addresses concerns about the reliability of Manitoba Hydro’s electricity system - particularly for large industrial customers who rely on a stable and uninterrupted power supply for continuous operations.”

and:

“MIPUG’s final argument in the 2023/24 GRA raised concerns that current SAIDI and SAIFI metrics are inadequate for evaluating the reliability performance of the system. Current metrics used by Manitoba Hydro do not address the duration and frequency of momentary outages (i.e. less than one minute) that directly impact industrial operations.”

and:

“Momentary interruptions with a duration of less than one minute are not typically included in SAIDI and SAIFI indices. Customer presentations during the 2023/24 GRA highlighted the high frequency and operational impact of these short duration interruptions. The conclusions drawn by these customers indicate that SAIDI and SAIFI metrics are inadequate for determining the full impact and cost of momentary reliability events. These events often occur more frequently than longer outages and can cause greater cumulative disruption to industrial operations.”

Question:

a) Please confirm that large industrial customers have more stringent reliability requirements with regards to SAIDI, SAIFI, and momentary outages (i.e., less than one minute) than do typical residential customers.

    i. If confirmed, please discuss why the reliability requirements of each rate class, expressed in terms of SAIDI, SAIFI, and momentary outages (i.e., less than one minute) are different.

ii. If not confirmed, please discuss why the reliability requirements of each rate class, expressed for SAIDI, SAIFI, and momentary outages (i.e., less than one minute) are identical.

b) Please confirm that the "customer presentations" referred to in Mr. Friesen's report are presentations by MIPUG members and not presentations by residential customers or members of other non-industrial customer classes.

Rationale for Question:

Different ratepayer groups have different reliability requirements and desires, and each class should be prepared to bear the differential costs involved in delivering the performance they demand.

Response:

a)

In Mr. Friesen's experience, SAIDI and SAIFI indices are not generally specified as requirements, but rather as representative indicators of reliability performance.

As noted in response to GSS-GSM/MIPUG I-12, consumers within different rate classes may have differing sensitivities and outcomes from varying levels of reliability. The same statement could also be used to characterize sensitivity to and impacts arising from reliability events within each rate class.

As an example, it would be incorrect to characterize all residential customers as having the same sensitivity to reliability events with the same implications for safety, health, and cost. A dialysis machine is very sensitive to power interruptions. Given the critical nature of the treatment it provides, those doing dialysis at home often have elaborate backup power systems to deal with electric supply reliability concerns.

The referenced statements from Exhibit MIPUG-09 do not suggest that reliability is a lesser or greater concern for residential customers. The statements indicate that reliability is a priority for large industrial customers who rely on a stable and uninterrupted supply of power for continuous operations. A statement about priority for one rate class does not by default imply that such a priority does not exist for other classes.

In response to i) and ii), the referenced statements do not draw a comparison of different requirements between rate classes. SAIDI, SAIFI, and MAIFI are three indices that may be used to report on the reliability performance of the system, irrespective of rate classification and voltage level.

b)

Confirmed. The customer presentations noted in Mr. Friesen’s evidence refer to presentations by MIPUG members.

COALITION/MIPUG I-6

Part and Chapter:	**Exhibit MIPUG-09, Section 4.3.1.1** **Manitoba Hydro Response to COALITION/MH I-74(b)**	**Page #:**	**Page 4-3** **Page 4 of 5**
Topic:	**Reliability Metrics**		
Subtopic	**Transmission System Indices**		

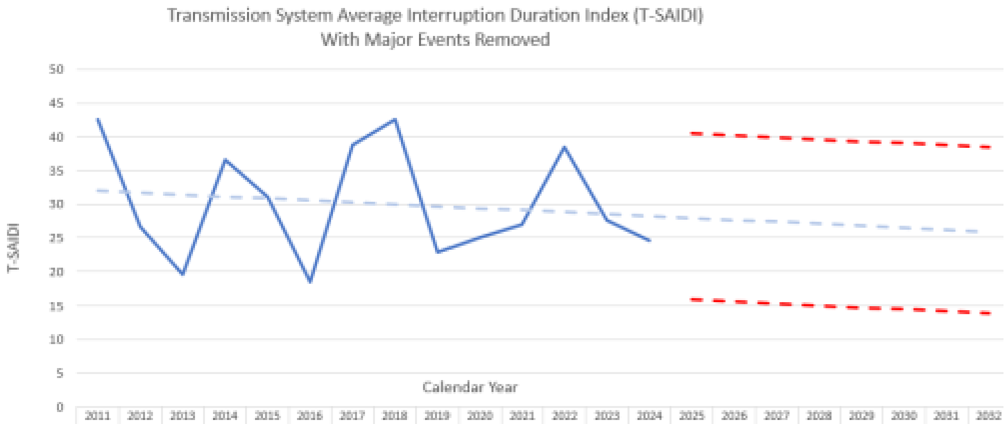
Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen states:

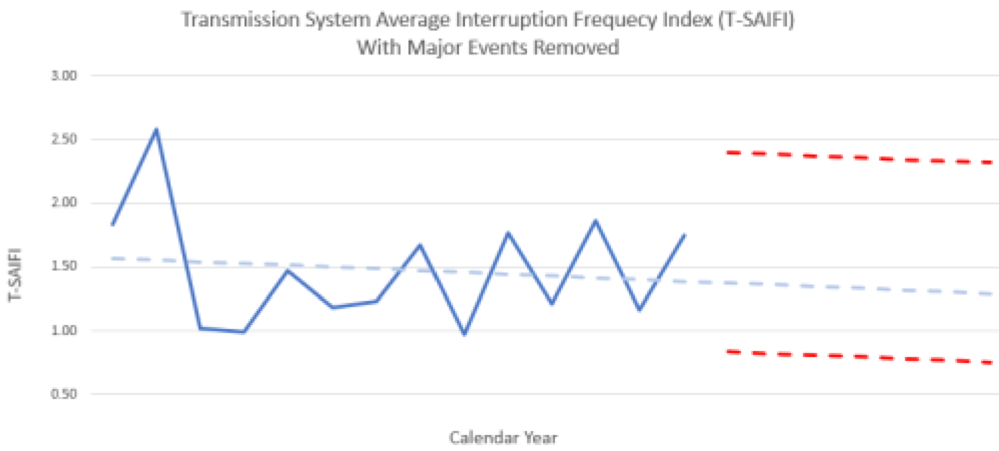
“The average performance trend in Figure 6.6 shows an increasing trend in the average duration of transmission outages, while Figure 6.7 indicates that the frequency of transmission outages (as measured at the delivery point) is decreasing. Together, these figures suggest that while outages are happening less often, they are taking longer to restore, which reflects a decline in overall reliability.”

In response to COALITION/MH I-74(b), Manitoba Hydro presents the following figures:[1]

[1] Manitoba Hydro Response to COALITION/MH I-74(b), p. 4 of 5.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
MH Historical Performance	42.6	27	19.5	36.5	31	18.5	38.8	42.5	22.9	25.1	26.9	38.5	27.6	24.6								
Average Performance Trend	32.0	31.7	31.4	31.1	30.8	30.6	30.3	30.0	29.7	29.4	29.1	28.8	28.5	28.2	28.0	27.7	27.4	27.1	26.8	26.5	26.2	25.9
Maximum Performance Trend															40.5	40.2	39.9	39.6	39.3	39.0	38.8	38.5
Minimum Performance Trend															15.9	15.6	15.3	15.0	14.7	14.4	14.2	13.9



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
MH Historical Performance	1.83	2.58	1.02	0.99	1.47	1.19	1.23	1.67	0.97	1.76	1.21	1.86	1.16	1.75							
Average Performance Trend	1.57	1.55	1.54	1.53	1.51	1.50	1.48	1.47	1.46	1.44	1.43	1.42	1.40	1.39	1.37	1.36	1.35	1.33	1.32	1.30	1.29
Maximum Performance Trend															2.40	2.39	2.37	2.36	2.34	2.33	2.32
Minimum Performance Trend															0.84	0.82	0.81	0.79	0.78	0.77	0.75

Question:

a) Please provide your evaluation of T-SAIDI and T-SAIFI excluding Major Event Days.

    i. If no evaluation excluding Major Event Days was conducted, please explain why not.

b) Please discuss the impact, if any, of excluding Major Event Days data from T-SAIDI and T-SAIFI results upon your analysis and conclusion in Section 4.3.1.1 that "*Together, these figures suggest that while outages are happening less often, they are taking longer to restore, which reflects a decline in overall reliability*".

Rationale for Question:

To facilitate a more detailed assessment of Transmission reliability metrics.

Response:

a)

No specific evaluation was made of T-SAIDI and T-SAIFI results excluding Major Event Days. Resilience and restoration response, in the face of major events related to severe weather, forest fires, critical equipment failures, are within Manitoba Hydro's control and involve considerations for design and resourcing that ensure a stable and reliable supply of power for customers across all rate classes. Inclusion of Major Event Days in T-SAIDI and T-SAIFI indices gives importance to factors associated with resilience and restoration that are within Manitoba Hydro's control.

b)

It is not unexpected that major events have a prominent impact on T-SAIDI results. Manitoba Hydro's response to Coalition/MH I-74 c) highlights the impact that major events had on total T-SAIDI in 2012 and 2015. Theses observations highlight the importance of considerations for resilience and restoration response in ensuring the overall reliability of the transmission system, which impacts customers in all rate classes.

The response to Coalition/MH I-74b) indicates a downward trend in T-SAIDI when major events are excluded. There appears to be minimal change in the downward trend for T-SAIFI when major events are excluded.

T-SAIDI results inclusive of Major Event Days may serve as an indication of an aging system becoming less resilient or a lack of restoration capacity in the face of severe weather or other major events. Excluding Major Event Days may give the appearance that major event outages cannot be mitigated, while also suggesting that resilience and restoration response are of lesser importance to customers facing a changing climate.

COALITION/MIPUG I-7

Part and Chapter:	Exhibit MIPUG-09, Section 4.3.1.3	Page #:	Page 4-5 & 4-6
Topic:	Reliability Metrics		
Subtopic	Sub Transmission Indices		

Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen presents Figure 4.5 and Figure 4.6 based on responses to information requests.

Question:

a) Please explain why MIPUG did not ask for Sub-Transmission Duration of Outages and Frequency of Outages with and without Major Event Days.

Rationale for Question:

The analysis appears to ignore the impact of events (i.e., Major Event Days) that are outside MH's direct control.

Response:

a) Please note the response to Coalition/MIPUG I-6.

COALITION/MIPUG I-8

Part and Chapter:	Exhibit MIPUG-09, Section 4.3.1.2 Manitoba Hydro Response to MIPUG/MH I-20	Page #:	Page 4-4 to 4-5 Page 1 of 1
Topic:	Distribution System Reliability		
Subtopic	Distribution System Indices		

Preamble (if any):

In Exhibit MIPUG-09, Mr. Friesen states:

"The upward trends in both duration and frequency are concerning as they indicate that the distribution system is experiencing a greater rate of degradation than the transmission system. SAIDI and SAIFI indices for the distribution system show nearly twice the frequency and duration of outages when compared to the transmission system."

In response to MIPUG/MH I-20, Manitoba Hydro states:

"Figures 6.8 (SAIFI) and 6.9 (SAIDI) refer to distribution infrastructure of less than 100kV. Specifically, they include the following voltages:

- 2.4/4.16 kV
- 4.8/8.32 kV
- 7.2/12.47 kV
- 13.8/24 kV
- 33 kV
- 66 kV"

Question:

a) Please estimate the percentage of MIPUG customers that are connected to the different distribution line voltages provided in response to MIPUG/MH I-20.

b) Please confirm that the results shown in Table 1 for conductor configurations commonly used for the specified voltage classes align with your understanding of representative load carrying capacity for lines in these voltage classes.

   i. If these do not align, please provide alternative capacities, along with the most common conductor sizes, bundling types (e.g., single, twin), and any key assumptions.

Table 1: Load Carrying Capacity Calculations[2]

Voltage (kV)	ACSR Conductor	Allowable Ampacity	Load Carrying Capacity		
			MVA	**PF**	**MW**
230	2-Bundle Hawk	1318	525	1.00	525
115	Hawk	659	131	1.00	131
66	Linnet	529	60	1.00	60
33	Penguin	357	20	1.00	20
24	Quail	256	11	1.00	11

c) Assuming that the load carrying capacity of transmission and distribution lines can be used as a proxy for the consequence of failure of that line, please confirm that *"SAIDI and SAIFI indices for the distribution system show nearly twice the frequency and duration of outages when compared to the transmission system"* indicates that the risk associated with failure of an individual distribution line is potentially significantly less than the risk associated with failure of an individual transmission line (e.g., the consequence of a 230 kV transmission line failure using the load carrying capacity proxy may be 50 times greater than the consequence of a 24 kV distribution line failure).[3,4] You may segment your answer into the relative risk associated with the different distribution line voltages.

   i. If not confirmed, please provide the risk analysis showing that the risk associated with distribution line failures is greater than the risk associated with transmission line failures.

Rationale for Question:

To clarify the relative risk analyses of failures of transmission and distribution lines.

Response:

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[2] Load carrying capacity calculations can be provided upon request. Data sourced from: https://assets.southwire.com/ImConvServlet/imconv/6e40b948ad8bbb2c69490138659678cbf373c912/origin?hybrisId=otmmHybrisPRD&assetDescr=ACSR-Dec-2020

[3] Risk is the product of probability of failure and consequence of failure.

[4] This is a simplified example which assumes that both the transmission and distribution lines are radial facilities.

a)

The distribution and sub-transmission voltages at which MIPUG members connect to the system are not tracked in detail. Sub-transmission interconnections typically occur at the 66 kV level with several MIPUG members having multiple facilities with connections at either the sub-transmission or transmission level. Several members have operations with interconnections at different voltage levels within the distribution system (estimated at multiples greater than the total number of MIPUG members). These distribution connections include the entirety of voltage levels indicated in MIPUG/MH I-20, some of which are also served in rate classes other than the three GSL subclasses.

b)

Mr. Friesen does not profess to maintain an understanding of the load carrying capacity for lines of specific construction within the noted voltage classes. It is reasonable to suggest that a typical transmission line has a higher load carrying capacity than a typical distribution line.

c)

The nature of the question in c) appears to suggest that the relative exposure to risk factors associated with interruptions and consequences of failure are similar at all levels within the electric system. The consideration specified in Reference 4, related to radial line configurations, places an additional criterion on the comparison that is not universally applicable to the SAIDI and SAIFI results provided in the Application.

Considerations for risk factors and related load impacts are typically included in the criteria used for design and operation of the system at each voltage level. Decisions made based on these considerations impact the relative SAIDI and SAIFI performance at each level within the electric system.

The consequences of a reliability event involve many factors beyond the load carrying capacity of a distribution, sub-transmission, and/or transmission line, extending to the duration of the outage, nature and type of load impacted, etc. These consequences will impact decisions made by the utility regarding design, configuration, and operation of the system at each level.

The noted reference is an observation, based on the information provided by Manitoba Hydro, that the durations and frequency of outages on the distribution system are higher than the transmission system. It is not a statement about the associated consequences of risk, which is a by-product of the risk exposure, design, operation, and loads served by two separate but interconnected sub-systems of the electric grid.