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Page 3 of the PDF file lines 9-24

1B-hann-23 THESL uses the term "extreme weather" throughout the evidence. What is THESL definition of Extreme Weather?

1B-hann-24 If it is based on wind speed, accumulated glace ice, amount of water on the ground, etc. what are the values?

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Page 10 of the PDF file line 14-16

1B-hann-131 What is impact on SAIDI and SAIFI if the feeders and interruptions for the "densely populated downtown core are removed from 2009-2017?

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Page 11 of the PDF file lines 3-6

1B-hann-25 What are the criteria for useful life?

1B-hann-26 How much of the asset base is beyond Maximum Useful life?

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Page 13 and 14 of the PDF file lines 3-9 and 1 Table 1 Months of Extreme Weather (January 1 2017 through June 2018)

1B-hann-27 What are the design loads for wind in KPH and/or ice in mm including overload factors?
1B-hann-28 Provide evidence including dates of events where the actual loads of wind and/or glace ice exceeded the design loads.

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1B-hann-29 Why does the system not withstand the design loads including overload factor?

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1B-hann-30 Why does the system not withstand the design loads including overload factor?

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1B-hann-31 Please refer to the evidence to support the statement "The risk to the utility's deteriorating is compounded by increases in the 2 frequency and magnitude of extreme weather."?

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Page 15 of the PDF file line 1-3

1B-hann-32 Did the extreme weather events in 2017 or the aging of the urban forest and in particular invasive species such as the Norway Maple with a life span of 20-40 years, result "in a 72 percent increase 1 in the number of customer interruptions attributed to tree contacts compared to the average of the previous five years."

1B-hann-33 Is the aging urban forest the issue, since trees that were planted in "fields" in the 1960's in Etobicoke, Scarborough and North York are now 50 years older, taller and in some cases weaker due to age, disease and infestations? If not, please explain why.

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Page 15 of the PDF file line 13-15

1B-hann-34 How many underground vaults and cable chambers are vulnerable to flooding? What has been done to;

a) Improve the design of new vaults and cable chambers?
b) Protect existing vaults and cable chambers?

1B-hann-35 Is there a predominate area in the service territory where flooding of the underground vaults and cable chambers is a chronic problem? Please identify on a map the areas where flooding is a chronic problem in underground vaults and cable chambers.

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Page 33 of the PDF file lines 11-19

1B-hann-132 What design criteria changes are being or have been made “to extract the full value out of distribution 12 equipment through programs that perform preventative, predictive, and corrective 13 maintenance on the deteriorating infrastructure” from 2008-2017 related to pole design, pole hardware and underground vaults?

1B-hann-36 Please provide a list of fuse coordination studies, the feeder and station studied, when they were implemented, number of interruptions at the feeder switch in the station before and after the fuses were recoordinated?

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Page 744 and 746 in pdf file – no line numbers reference below

1B-hann-37 Please provide segregated SAIFI, SAIDI with and without MED data for the downtown congested and horseshoe.

1B-hann-38 Please compare the horseshoe segregated SAIFI, SAIDI with and without MED data with appropriate Ontario LDC’s.

Reference We emphasize the importance of including U.S. distributors into any benchmark evaluation involving Toronto Hydro (or any other extreme outlier in the Ontario dataset). While an Ontario only dataset is appropriate for the clear majority of Ontario distributors, an Ontario-only dataset will not produce reliable results for Toronto Hydro, due to its outlier status within that dataset. This outlier status is shown by the fact that Toronto Hydro has over double the number of customers than the next largest distributor (prior to Alectra Utilities being formed), except for the extremely rural Hydro One Networks. Additionally, Toronto Hydro’s “congested urban” variable is over three times as large as the next closest Ontario peer.

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1B-hann-39 The service territories and environments are very different in the list provide. Why are Ameren UE, Detroit Edison, Pacific Gas and Electric, Saskpowerm Southern California Edison and Xcel Energy comparable utilities?

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Page 168, 169 lines 14-17, lines 1-5

1B-hann-40 Where are the remotely operated switches located on the system?

1B-hann-41 Are the new remotely operated switches located on the feeders or at the stations?

Toronto Hydro-Electric System Limited EB-2018-0165 Exhibit 1B Tab 2 Schedule 4 ORIGINAL
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Page 171 Figure 12: SAIDI Cause Code 1 Breakdown (Excluding MEDs)

1B-hann-42 Since THESL "tracks the cost code as a measure of continuous improvement 5 in the execution of its capital expenditure and maintenance plans ".

a) How many defective equipment interruptions occurred,
b) How many fuse links were replaced during unplanned interruptions?
c) How many fused switches were replaced during unplanned interruptions?
d) How many poles were replaced during unplanned interruption?
From 2013-2017.

1B-hann-43 What is the definition of Defective Equipment cause used by the reporting staff, was it a blown fuse or a switch operating as it should have due to a fault on the line that was attributed to defective equipment?

1B-hann-44 Is it a Defective Equipment failure because the insulator wasn't washed?
1B-hann-45 If the cause is actual defective equipment, what is the main defect that caused the majority of the interruptions and the impact on SAIFI?

1B-hann-46 What is the mode of failure exhibited to for poles, switches, conductor and insulators

a) due to deterioration from age,
b) incorrect maintenance, or
c) imminent failures detected by maintenance?

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Page 172 lines 1-9

1B-hann-47 What was the performance of the section of the lines/feeders before and after the capital improvements? Please provide the dates, Number of interruption, number of customer interruptions, duration of interruption by line/feeder and year.

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1B-hann-48 What is the correlation between the weather data and the associated interruptions?

a) For example, did the wind speed exceed the design standard with overload?
b) Did the accumulated glace ice exceed the design standard with overload?

1B-hann-49 Since there have been improvements in distribution automation, why has the time an average customer is interrupted under weather impacts not improved except for 2014?

1B-hann-50 Does line 8/9 **"**improvements in 2014 can be 9 attributed to relatively favorable weather conditions that year." mean that system improvements had no impact on these indices and that SAIFI SAIDI improvement only occurs when all the days are "non storm days"?

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1B-hann-51 "This is mainly due to the 5 magnitude of these types of failures, which often disable large numbers of feeders.", implies that it is an interruption, or number of interruptions that have occurred at the protective devises at the station.

a) What is being done to prevent the protective device operating at the station and have them operate near the actual fault on the line?
b) Were the poles actually replaced due to them being defective, were they replaced at all or was the switch operated? What was the defects in the poles?
c) Was the failure due to external forces being applied (e.g. a tree or tree branch)?
d) What is the failure mode of the insulators? Mechanical (e.g. breaking) or Electrical (e.g. flash over due to contamination)?

1B-hann-52 What are the actual dates, numbers of interruptions, numbers of customer interruptions and durations of the interruptions caused by equipment in the conversion areas, before and after the conversions? Please provide a table with this information. Do not include interruptions outside of the conversion area that impacted the area.

Toronto Hydro-Electric System Limited EB-2018-0165 Exhibit 1B Tab 2 Schedule 5 ORIGINAL
Page 1 of 1 OEB Appendix 2-G Service Reliability Indicators 2013 - 2017

1B-hann-53 THESl uses SAIFI as a measure of aging and deteriorating assets, please explain why SAIFI including MEDs is showing a downward trend (excluding 2013) in an environment of increasing storms and aging assets?

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(469 pages) page 19 of APPENDIX 1.1 Low-Volume Customer Focus Groups
Page 243 in PDF

1B-hann-54 What are the components that make up the delivery charge?

1B-hann-55 Please provide the charges of each of these components from 2008-2017 for all 4 customer groupings.

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(469 pages)
Pg 31 of Toronto Hydro 2018 Customer Engagement Customer Feedback Portal Report Segmentation and Demographics
Pg 355 in pdf

1B-hann-56 Why are Defective Equipment (36% of interruptions and Aging Equipment (36% of interruptions) the same values?
1B-hann-57 Does THESL not have any defective equipment and every interruption involving equipment is due to age?
1B-hann-58 What are the actual number of interruptions, and customer interruptions 2008-2017 for defective equipment

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(469 pages)
Pg 48 in Appendix 2.1 Toronto Hydro 2018 Customer Engagement Customer Feedback Portal Report
Pg 372 in pdf

1B-hann-59 In multiple locations in the evidence photos show “storms” with “trees”. How does capital replacement storm hardening eliminate these interruptions due to tree contact?

Toronto Hydro-Electric System Limited EB-2018-0165 Exhibit 1B Tab 4 Schedule 1 ORIGINAL
Page 10 of 14
Page 688 of pdf Table 3: Revenue Requirement Components for Determining Scap

1B-hann-60 What is the ROE if assets are run to the end of life, instead of remaining useful life 2021 – 2024?

Toronto Hydro-Electric System Limited EB-2018-0165 Exhibit 1B Tab 4 Schedule 2 ORIGINAL
(145 pages)
Pg 10, Figure 2 Toronto Hydro’s SAIFI Performance 2005-2024 13 of report point 3
Page 706, 709 pdf

1B-hann-61 Customer interruptions in SAIFI are dependent on a number of factors, what is the comparison of actual number of interruptions that have occurred on the assets from 2005 projected to 2024, segregated by 1-50, 51-500. 501 to 1000, 1001 to 5000 and greater than 5000 customers interrupted by a device? Please provide in table and chart format.

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Page 31

1B-hann-62 How many pole top transformers fail each year listed by year of manufacture from 2008 to 2017?
1B-hann-63 What is the difference in SAIFI by allowing to run to failure compared to a renewal approach?