EB-2012-0064

Ontario Energy Board

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, (Schedule B);

AND IN THE MATTER OF an application by Toronto Hydro-Electric System Limited for an order approving just and reasonable rates and other charges for electricity distribution to be effective June 1, 2012, May 1, 2013 and May 1, 2014.

INTERROGATORIES OF
ENERGY PROBE RESEARCH FOUNDATION
("ENERGY PROBE")

September 14, 2012

TORONTO HYDRO ELECTRIC SYSTEM LIMITED

2012, 2013 and 2014 IRM RATE ADJUSTMENTS and ICM RATE ADDERS

ENERGY PROBE RESEARCH FOUNDATION
INTERROGATORIES

1. INCENTIVE REGULATORY MECHANISM ("IRM") SCHEDULES AND MODELS

Issue 1.1 Are the IRM Model filings by THESL, including the tax sharing proposal for 2012, in accordance with the Board's requirements and, if not, are any proposed departures adequately justified?

1.1 Energy Probe # 1

Ref: Application – Disclaimer

a) Is the Disclaimer authorized by Mr. J.S. Coulliard and THESL Counsel?

b) If so, why is it not signed by those parties?

c) Please provide a copy of the similar Disclaimer from the previous Rates Case before the Board (EB-2010-0142).

1.1 Energy Probe # 2

Ref: EB-2010-0142 Settlement Agreement

a) What was the Framework for the 2011 Settlement Agreement?
- **That 2011 was a "normal" Cost of service Year, or**
- **That 2011 was a rebasing year?**

b) Please discuss the implications of your answers for this application.

1.1 Energy Probe # 3

Ref: EB-2010-0142 Exhibit B1, Tab 14, Schedule 1

a) Please provide the last 5 years (2007-2011) Service Quality Indicators and also please add 2012 YTD and 2012E values.

b) Please provide the Incidence/frequency of Momentary Interruptions 2007-2011 and add 2012 YTD and 2012E values.

c) Please discuss changes/trends in SQIs going forward into the IRM period.

d) Will the ICM/CAPEX program have a positive impact on SQIs? Please discuss.

Issue 1.3 Is THESL's proposal that the Board recognize in rates THESL's approved 2011 year-end rate base appropriate?

1.3 Energy Probe # 4

Ref: Manager's Summary Tab 2, Page 3

a) Please provide a schedule that shows the continuity of Rate Base for 2011-2014, including approved Opening 2011 Rate Base and 2011 Closing Rate Base.

b) Please include a breakdown of the major RB components including Gross and Net fixed Assets, CAPEX, Depreciation and Working Capital.

c) Please reconcile the 2011 Rate base to the EB-2010-0142 Settlement Agreement and Board Order and to the Amount shown in the Managers Summary Appendix 2 Line 1

1.3 Energy Probe # 5

Ref: Manager's Summary Tab 2, Page 3

a) Please provide the Rate Base Continuity Schedule filed in EB-2010-0142.

b) What did the Settlement Agreement in EB-2010-0142 contemplate with regard to Opening/Closing and Average Rate Base? Provide the figures and words from the Settlement related to 2011 CAPEX and Total Rate Base.

c) Please provide the relevant extracts from the Board's Decision and Rate Order in EB-2010-0142 regarding THESL's 2011 approved Rate Base and CAPEX

1.3 Energy Probe # 6

Ref: Managers Summary Tab 2, Page 4

a) **Please provide a continuity schedule for 2011A, 2012 YTD and 2012 E and 2013-2015 F showing CAPEX and Rate Base.**

b) **Please reconcile to Gross and Net fixed assets in the Spreadsheet "Incremental Capital Proj. Wksheet 20120510".**

1.3 Energy Probe # 7

Ref: Managers Summary Tab 2, Appendix 1, Page 1

a) **Please provide the ICM DRR Calculations in Active Excel Spreadsheet format. Please list all input assumptions and sources of data for each line as needed (e.g. cost of capital, interest).**

b) **Confirm the calculated ICM distribution revenue requirements are based on the 2011 <u>average</u> Rate Base and OEB rules regarding ICM threshold and dead band. If not, also provide a version that does and discuss the differences.**

1.3 Energy Probe # 8

Ref: Managers Summary Tab 2, Page 23, Table 3 and Appendix 1, Page 1 and Tab 4, Schedule A, Appendix 1, Page 1

Please provide a Schedule that shows the calculations starting from the threshold amounts to the CAPEX amounts in Table 3 and the second reference -448.74 m 534.48m 439.47m; total 1,422.70 m.

1.3 Energy Probe # 9

Ref: Managers Summary Tab 2, Appendix 1, Pages 2 and 3

a) **Please provide the 2011 Rate Rider Calculations in Active Excel Spreadsheet format.**

b) **Please confirm that the total 2012 rate rider amount of 12,934,857.07 (N) is based on the proposed closing 2011 Rate Base, not the average 2011 Rate Base.**

1.3 Energy Probe # 10

Ref: Managers Summary Tab 2, Page 8 &
EB-2010-0142 Exhibit B1, Tab 7, Schedule 1, Appendix A Corrected: 2010 Nov 8-Proforma statement of cash Flows

THESL indicates that "The only source of funds available to THESL to cover the cost of the investment is revenue through distribution rates".

Please provide a proforma Statement of Cash Flows 2011-2014 in the same format as the second reference.

2. INCREMENTAL CAPITAL MODULE ("ICM")

Issue 2.2 Has THESL provided sufficient evidence including consultant reports, business cases and consideration of alternatives, for the proposed capital projects to adequately justify them?

2.2 Energy Probe # 11

Ref: Manager's Summary Tab 2, Page 8, Lines 6-17

Please explain the distinction between the financing of capital projects (through depreciation, retained earnings and borrowing) and the cost of the investment referred to on line 12, i.e. If the interest cost of borrowing, depreciation expense and return on equity are all in the rates, what remains to be recovered?

2.2 Energy Probe # 12

Ref: Manager's Summary Tab 2, Page 9, Lines 16-20

a) Has THESL started notice and consultation activities with residents in areas proposed for replacement of underground cable and for rebuilding of back lot overhead lines with front lot underground cables?

b) If yes, please provide copies of typical notice and consultation materials sent to residents for these two types of projects.

2.2 Energy Probe # 13

Ref: Manager's Summary Tab 2, Page 9, Lines 29-30 and Page 10, Lines 1-4

a) Please provide a copy of contracts that THESL uses for replacement of underground residential cables and for rebuilding rear lot overhead with front lot underground.

b) If these are not firm price contracts, please explain why a different type of contract is used and the safeguards THESL has in place to ensure that it is not overcharged for a project.

c) Please describe the fixed costs of labour and other resources referred to in line 2.

2.2 Energy Probe # 14

Ref: Manager's Summary Tab 2, Page 10, Lines 6-13

a) Please explain the distinction between "stable volume of work" and "level of work".

b) Please provide examples of specific work that has been refused by contractors having existing contracts with THESL, the reasons why it was refused and what THESL did to get the work done.

d) Why does THESL have contracts that give the contractor the option of refusing the work offered?

e) Please provide examples of short term contracts for specific jobs that entailed significantly higher prices.

2.2 Energy Probe # 15

Ref: Manager's Summary Tab 2, Page 20, Lines 25-29

For each major category of distribution assets please estimate the percentage of assets that either have already or will soon reach end of life.

2.2 Energy Probe # 16

Ref: Managers Summary Tab 2, Page 15, Table 2

a) Please describe how the procurement process will work to ensure that most competitive prices will be obtained. For example, will each category of project be bid, or contractors allowed to bid across project categories?

b) Will existing programs be rebid or given to existing contractors such as PowerLine? Please discuss.

2.2 Energy Probe # 17

Ref: Managers Summary Tab 2, Appendix4- FIM calculations

a) Please provide sample calculations for an actual project using the FIM for comparing Back Lot feeder replacement vs. front lot undergrounding:
   i. 2012
   ii. 2015.

b) Please provide complete notes on all input assumptions, including customer cost impacts and calculation steps

c) Please provide graphical output to assist in visual understanding of the results

2.2 Energy Probe # 18

Ref: Tab 4 Sch. B1 – ICM Project – Underground Infrastructure and Cable & Tab 4 Sch. D1 Kinetrics Asset Condition Assessment Audit

Page 5 of the first reference describes the increasing failure rate of air-insulated padmounted switches. Page 62 of the second reference describes the health index for padmounted switches noting in figure 19-2 that about 85% of switches have a good or very good health index.

a) Please explain why more of these switches are failing when the great majority appear to be in good or very good condition.

b) Is the health index a good predictor of failure rate in this category of assets?

2.2 Energy Probe # 19

Ref: Tab 4, Sch. B1 – ICM Project – Underground Infrastructure and Cable

Page 9, Lines 18-21, state that CI and CHI data exclude loss of supply, major event days and planned outages to more accurately reflect the reliability of the distribution assets.

Please explain what constitutes a loss of supply condition in this context and what the definition of a major event day is in this context.

2.2 Energy Probe # 20

Ref: Tab 4, Sch. B1

Figure 44 on page 117 compares CI of Direct Buried cable with CI of all other UG assets.

a) How much of the underground system is direct buried cable?

b) How are the other UG assets protected?

2.2 Energy Probe # 21

Ref: Tab 4, Sch. B1

Page 118 lines 1-4 state that in 2011 57% of CI and 43% of CHI for U/G asset failure were attributable to DB cables. This would mean that 43% of CI and 57% of CHI were attributable to all other U/G assets and suggests that DB failures take less time to repair than other non DB failures. Page 155 though suggests the opposite. Lines 27 to 31 state that "it takes significantly longer time, work effort and cost to repair faulted cables installed in direct buried configurations". Lines 30-31 and line 1 on page 156 say "when faults occur on cables installed in ducts, the faulted cables can be replaced more conveniently and the power restored with greater speed and lower cost.

a) Please explain the apparent contradiction.

b) If the explanation is that non DB assets feed more customers than DB assets and therefore cause more CHI when a fault does occur, please explain what significance the comparison in Figure 45 page 117 between CHI for DB and non DB assets has.

2.2 Energy Probe # 22

Ref: Tab 4, Sch. B1

Page 126 sets out four options for correcting the problems with direct buried cables.

a) Why wasn't the option of replacing U/G with O/H considered?

b) What is cost difference between:
1. Direct buried U/G and O/H, and
2. Concrete encased duct U/G and O/H.

2.2 Energy Probe # 23

Ref: Tab 2, D3 and Tab 4, B1

The Navigant report in the first reference notes at Page 12 that directional boring combined with a flexible conduit is the preferred method used by survey participants for replacing single phase U/G lines.

a) Please provide a description of the construction steps needed for the directional boring method of replacing DB cables and for THESL's preferred alternative of concrete encased ducts.

b) Please compare the physical disruption to a neighbourhood for the directional boring method vs. the concrete encased duct method of replacing DB cables.

c) Please explain why THESL prefers the concrete encased duct method over the directional boring with flexible duct method.

2.2 Energy Probe # 24

Ref: Tab 4, Sch. B1

a) Please provide an expanded Table 2 on Page 133 showing advantages and disadvantages for two additional options:

1. **Directional boring U/G with flexible conduit for primary, and**
2. **Overhead primary with U/G secondaries.**

b) Please provide an expanded Table 3 on Page 134 showing comparable costs for two additional options:

1. **Directional boring with flexible duct to house cable, and**
2. **O/H primary with pole mounted transformers and U/G secondaries. (Please update the installation costs in Option 4 of existing Table 3 to include submersible transformers, transformer vaults and cable chambers and secondaries.)**

2.2 Energy Probe # 25

Ref: Tab 4, Sch. B1

Please provide typical cross section and plan view drawings of a residential subdivision road allowance showing right of way width, location and depth of burial of DB cables, cable TV, telephone cables and natural gas pipes. Please also show where the proposed concrete encased ducts and submersible transformer vaults would be located overlaid on the same drawings.

2.2 Energy Probe # 26

Ref: Tab 4, Sch. B1

Please provide a Business Case Evaluation comparing the following three options to address the problems of direct buried cable in residential subdivisions:

1. **Directional boring with flexible ducts for primary cables, submersible transformers and vaults, SF6 switchgear.**
2. **Concrete encased ducts for primary cables, submersible transformers and vaults, SF6 switchgear.**
3. **Overhead primary, pole mounted transformers, current THESL standard for fused disconnect, sectionalizing and feeder tie switches.**

2.2 Energy Probe # 27

Ref: Tab 4, Sch. B3 Handwell replacements

Page 1 Lines 26-28 refer to City Moratoriums on excavating sidewalks and pavement thereby preventing THESL from replacing handwells.

a) **Please provide a map showing where these moratoriums are in effect.**

b) **How long does THESL expect the moratoriums to last?**

c) **Is the Electrical Safety Authority aware that THESL cannot address a potential public safety issue? If yes, what was the ESA's response and/or advice to THESL. If not, shouldn't THESL make the ESA aware?**

d) **What measures can THESL take to mitigate the risks of contact voltage in areas where the handwells cannot be replaced?**

2.2 Energy Probe # 28

Ref: Tab 4, Sch. B6 Rear Lot Construction

Page 5 Lines 9-17 discuss outages of rear lot overhead lines. Lines 12-13 state that "Typical outage restoration times for rear lot plant outages are more than twice those of front lot outages".

Does this statement assume overhead in both rear lot and front lot? If not, please explain what is being compared.

2.2 Energy Probe # 29

Ref: Tab 4, Sch. B6 Rear Lot Construction

Line 15 on Page 5 states that "the likelihood of an outage is significantly higher" with rear lot construction and refers to Figure 1 on Page 6. This figure shows Typical outages of overhead construction versus underground construction.

a) **What does the Percent of System axis measure?**

b) Are the outages in terms of frequency, duration or both?

c) What is the average frequency and duration of outages for residential overhead distribution in THESL's system?

d) What is the average frequency and duration of outages for residential U/G distribution in THESL's system? Does this include or exclude the effect of an O/H main feeder outage that supplies the U/G system?

2.2 Energy Probe # 30

Ref: Tab 4, Sch. B6 Rear Lot Construction

Lines 11-16 on Page 6 and 1-22 on Page 7 describe the specific reasons for undertaking rear lot conversion. The first category is Operational Constraints on Page 6.

a) Has THESL investigated the use of sectional fibre glass or composite poles that can be more easily carried into backyards and assembled in place? Would this mitigate the safety issue of field crews carrying heavier full length wood poles into backyards and the issue of limited manoevering room for full length poles in backyards?

b) Has THESL considered using compact backhoes capable of accessing rear lots and digging pole holes in confined areas to set poles? If not why not?

c) Has THESL attempted to develop compact equipment capable of transporting heavy assets such as transformers into backyards? If not why not?

2.2 Energy Probe # 31

Ref: Tab 4, Sch. B6 Rear Lot Construction

Lines 11-16 on Page 6 and 1-22 on Page 7 describe the specific reasons for undertaking rear lot conversion. The second category is asset condition on Page 7.

a) Do THESL's easements give it the right to access backyards to maintain plant and control vegetation that might grow into equipment? If yes, has THESL regularly done this kind of maintenance? If not, why not?

b) Please provide a copy of the typical easement agreement THESL has with rear lot fed customers (with appropriate redactions to eliminate personal information where necessary).

2.2 Energy Probe # 32

Ref: Tab 4, Sch. B6 Rear Lot Construction

Lines 11-16 on Page 6 and 1-22 on Page 7 describe the specific reasons for undertaking rear lot conversion. The third category is Crew Safety Risks.

a) What is the typical size and class of poles used in rear lot construction?

b) Does THESL perform periodic inspections to identify and treat base rot in poles?

c) Would replacement of wood poles with sectional fibreglass or composite poles eliminate the problem of rot and its attendant safety risks?

2.2 Energy Probe # 33

Ref: Tab 4, Sch. B6 Rear Lot Construction

Lines 11-16 on Page 6 and 1-22 on Page 7 describe the specific reasons for undertaking rear lot conversion. The fourth category is Public Safety Risks.

a) How does the risk of proximity to energized equipment and conductors in backlot construction compare to the risks of proximity in front lot O/H systems?

b) How much (on a % basis) of the THESL residential supply system is O/H (both front and rear lot) and how much is U/G?

c) Please provide a chart showing public electrical contact incidents in the last ten years for rear lot residential systems, for front lot residential systems and for front lot underground systems (including contractor dig ins and overhead contacts).

2.2 Energy Probe # 34

Ref: Tab 4, Sch. B6 Rear Lot Construction

Lines 11-16 on Page 6 and 1-22 on Page 7 describe the specific reasons for undertaking rear lot conversion. The fifth category is Power Restoration Times.

a) Is the restoration comparison citing two and one half times restoration time for rear lot service compared to front lot derived from the CAIDI averages in lines 18-19? If not, please explain how it was arrived at?

b) How was the sample of rear lot outages selected?

c) Please provide a chart comparing the durations of all outages on rear lot residential construction to all outages on front lot O/H and on front lot U/G for the past five years.

2.2 Energy Probe # 35

Ref: Tab 4, Sch. B6 Rear Lot Construction

Starting at Line 24 on Page 7 and continuing through Pages 8 and 9 is as discussion of the options considered in addressing rear lot risks.

a) Option 2 is to rebuild rear lot in kind and is dismissed as infeasible. Please provide the full study that concludes that rebuilding of rear lot systems is infeasible. If such a study was not done, please explain how the option can be dismissed without a full study.

b) Page 12 of the Navigant survey at Tab 4, Schedule D3, notes that few other participants in the survey are relocating rear lot lines. Has THESL contacted these other utilities to determine how they are dealing with the issues that make rebuilding rear lot infeasible to THESL? If yes, please provide the responses. If not, why not?

c) What is average pole spacing in rear lot construction? What is the range of backyard widths in those areas that have backlot service?

d) Page 8 Line 18-19 refers to the need for large amounts of work to be undertaken by hand. Please describe the type of work that this would involve and explain why it is not feasible to do the work by hand.

e) Option 3 is to rebuild as front lot O/H. Has THESL surveyed residential customers on their views about converting backlot overhead to frontlot overhead or are the statements in lines 25-27 based on experience with the Whitebirch job referred to in line 28?

f) If the former, please provide a copy of the survey and feedback received. If the latter, please describe any other conversions similar to Whitebirch in which THESL experienced strong opposition to conversion to front lot overhead.

g) Has THESL ever converted backlot overhead to front lot overhead? If yes, please provide details of the projects undertaken including street names so that they can be viewed.

h) What was the ultimate resolution of the Whitebirch conversion dispute?

2.2 Energy Probe # 36

Ref: Tab 4, Sch. B6 Rear Lot Construction

Page 8 describes the involvement of City councillors in the opposition to the Whitebirch project.

a) Has THESL consulted with City councillors to determine what parts of front lot overhead construction they and residents object to? If yes, please describe the results of the consultation. If not, why not?

b) Does THESL require permits from the City to construct its plant on city road allowance? If yes, please describe the process for obtaining permits.

c) Has THESL been refused permits to construct overhead lines on City road allowance? If yes, please provide examples and explain why the City refused to issue the permits.

d) Has THESL approached the City to ask if it was willing to bear the extra cost of front lot underground construction? If yes, what was the response? If not, why not?

2.2 Energy Probe # 37

Ref: Tab 4, Sch. B6 Rear Lot Construction

In areas of the city that have always been front lot overhead construction, does THESL have any problems with residents objecting to trimming trees to avoid interference with lines? If yes, please describe how THESL has dealt with the objections?

2.2 Energy Probe # 38

Ref: Tab 4, Sch. B6 Rear Lot Construction

Page 9 Lines 11-14 note that Option 3, rebuilding rear lot overhead as front lot overhead, was not evaluated in the business case because in THESL's view it "would ultimately be rejected as a project" If THESL has converted any rear lot overhead to front lot overhead in the past, please explain why it has concluded that such conversions would never be acceptable now?

2.2 Energy Probe # 39

Ref: Tab 4, Sch. B6 Rear Lot Construction

Notwithstanding THESL's opinion that Option 3 Front Lot Overhead could never be implemented, please prepare the business case evaluation for this option and include the results in Table 1 on Page 10 so that the Board and Intevenors have a complete record of all options for consideration.

2.2 Energy Probe # 40

Ref: Tab 4, Sch. B6 Rear Lot Construction

The bottom of Table 1 on Page 10 notes that Option 4 will result in "enhanced property values". This is repeated in Line 3 on Page 11 with the statement that "the property values of affected customers are likely to increase".

a) Please explain why increasing property values for a particular set of residential customers should be a consideration for THESL in evaluating its options for rear lot construction.

b) Please explain why residential ratepayers served by front lot overhead should pay higher rates resulting from more expensive U/G systems to improve the property values of customers who would benefit from those systems.

c) Please explain why residential customers benefiting from increased property values shouldn't pay for the additional costs of the U/G system that produced the increased value?

2.2 Energy Probe # 41

Ref: Tab 4, Sch. B6 Rear Lot Construction

Page 14 Figure 3 shows Customer Hours interrupted due to "rear lot impacts" (line 6-7).

a) Are these "impacts" just outages on rear lot lines or are they something more? If the latter, please explain.

b) What event(s) caused the O/H line to move up so abruptly in 2011?

c) Is the red line on this figure rear lot underground? If yes, please describe the extent of rear lot underground. If not, please explain what it is.

2.2 Energy Probe # 42

Ref: Tab 4, Sch. B6 Rear Lot Construction

Page 14 Line 16-18 refers to animal and tree contact as a frequent cause of outages on rear lot construction. The Navigant report on Page 9 notes that "Both tree wire and bundled conductor are viewed as a cost-effective reliability improvement measures, designed to improve reliability performance metrics".

a) Has THESL used these types of conductor for rear lot construction to mitigate tree and animal contacts? If yes, please describe the results. If not, why not?

b) In areas traditionally served by overhead front lot systems, how does THESL manage animal and tree contacts?

2.2 Energy Probe # 43

Ref: Tab 4, Sch. B6 Rear Lot Construction Appendix A - NPV Calculations and BCE Overview

Page 67, Section 5.2, describes the Non Asset Risk Procedure, Lines 22-27 describe the method of calculating the NAR for a specific area of study.

a) Lines 22-27 state that outage information used in the eventual NAR calculation is captured at the feeder level. Please confirm that this means that all non asset related outage information for the feeder from its connection at the MS or TS is included and not just that data applying to outages caused by problems on rear lot systems connected to the feeder. If this is not the correct interpretation, please clarify.

b) Please confirm that most U/G serviced subdivisions are actually supplied from feeders which typically run overhead along main roads before connecting to U/G cables at the subdivision entry point(s). If this is not the correct understanding, please clarify.

c) Assuming confirmation of b) above, please describe how the Non Asset Risk procedure in section 5.2 Lines 22-27 is applied to the underground part of the feeder considering that outages on the overhead part of the feeder would necessarily affect the underground part.

d) If the answer to c) is that the impact of outages on the overhead part of the feeder are normalized over the underground part of it, please explain why the Projected non-asset risk cost of underground front lot in table A3 on page 72 could be $0.

e) If the answer to c) is that the impact of outages on the overhead part of the feeder are not normalized over the underground part of it, please explain how the outage cost to customers due to loss of supply to the underground system are accounted for in the model.

f) Page 68 lines 2-3 state that "it is assumed that these non asset risks will continue to exist over the entire life cycle of the asset". Please explain how this assumption would account for the reduction in risk that could be achieved by trimming trees, using tree cable, placing animal barriers

around live transformer or switch parts, installing lightning arresters to limit lightning damage to equipment and any other mitigation strategies that would reduce non asset related risks.

g) Please explain why the NPV calculation in the model is done for a 100 year period rather than the expected life of the assets.

2.2 Energy Probe # 44

Ref: Tab 4, Sch. B6 Rear Lot Construction Appendix A - NPV Calculations and BCE Overview

Tables A1, A2 and A3 on Pages 71 and 72 show the results of the business case evaluation for the three options considered.

a) Please add a fourth table to show the results of the front lot overhead evaluation requested above.

b) For each option in the BCE, please provide the complete ICM model inputs and outputs used to arrive at the
1. **Projected asset risk cost,**
2. **Projected non asset risk cost, and**
3. **Maintenance cost.**

c) Please also include an explanation of the assumptions the inputs are based on, and show the calculations for
1. **how the input numbers were arrived at, and**
2. **how each of the output numbers in Tables A1, A2 and A3 and the expected A4 for overhead front lot construction are arrived at.**

2.2 Energy Probe # 45

Ref: Tab 4, Sch. B8 Scadamate R1 switches

Page 14 presents the cost of a Scadamate R2 Switch and concludes that retrofitting R1 versions of the switch with R2 components will not provide sufficient cost savings given the small difference in cost between the retrofit and a new R2 switch.

a) Does THESL consider the problem with the R1 version of the switch to be a design or manufacturing defect?

b) Does THESL accept the manufacturer's conclusion on Page 22 that pressure washing from the ground was responsible for moisture accumulation in the mechanism that ultimately causes corrosion and failure of the switch?

c) Why does THESL pressure wash from the ground rather from an aerial device?

d) Were all R1 switches in the system pressure washed from the ground at some point in their installed lifetime? If not, has THESL had any of those evaluated to determine if they have similar corrosion damage and may not need replacement?

e) Is the manufacturer contributing to the cost of replacing the R1 switches? If yes, please quantify the contribution. If not, please explain why there will be no contribution.

2.2 Energy Probe # 46

Ref: Tab 4, Sch. B8 Scadamate R1 switches

Table 1 on Page 30 shows the avoided estimated risk cost for the project as $45.86 M. Please provide the complete ICM model inputs and outputs used to arrive at this conclusion including the assumptions the inputs are based on and an explanation of how the model calculates the avoided estimated risk cost.

2.2 Energy Probe # 47

Ref 1: Tab 4, Sch. B11 Automatic Transfer Switches and Reverse Power Breakers
Ref 2: Tab 4, Sch. D1 Kinetrics Asset Condition Assessment Audit

Figure 2 on Page 10 of the first reference shows asset condition for ATS units.

a) 5% of units are in poor condition in 2010 and none are in very poor condition. By 2011, 10% of units are in very poor condition. This would appear to mean that at least 5% of the Fair condition units in 2010 moved to the very poor condition by 2011. Please confirm that this is the proper interpretation of the graph.

b) Is this kind of rapid deterioration typical of ATS units? If so, why were there none identified as very poor in 2010?

c) Figure 13-2 on Page 49 of the second reference shows 2012 Very Good, Good and Fair ATS units greater than those for 2011. Please explain how an asset can climb back up the asset condition chart.

d) If the answer to c) above is that maintenance can restore a unit to better condition, does THESL plan to increase maintenance to reverse the deteriorating trend for ATS units?

2.2 Energy Probe # 48

Ref: Tab 4, Sch. B15 Stations Control and Communications Segment

Page 2 discusses the SONET fibre optic communication system. Lines 15-20 describe consequences for HONI 115 kV transmission feeders and HONI 230 kV transmission in Scarborough if the SONET system fails.

a) It appears that HONI relies on THESL's SONET system for control of some of its transmission assets. Please explain.

b) Does HONI contribute to the cost of owning and operating THESL's SONET system? If yes, please describe the cost sharing. If not, please explain why HONI should not contribute if it derives benefits from the system.

2.2 Energy Probe # 49

Ref: Tab 4, Sch. D3 Navigant Independent Survey and Review of Distribution Design Standards

Page 4 states City of Toronto is "fifth largest metropolitan area in terms of population in North America".

a) Please describe the boundaries of the "metropolitan area" considered.

b) What is the population of that metropolitan area?

c) Please identify the four larger metropolitan areas referred to along with their population numbers and total load.

d) How was "total load" measured?

2.2 Energy Probe # 50

Ref: Tab 4, Sch. D3 Navigant Independent Survey and Review of Distribution Design Standards

Page 10 states that "for example, concrete poles should be located on main travelled roadways where guying rights are more difficult to obtain. THESL also generally uses concrete poles on its distribution for similar reasons". Please explain how concrete poles alleviate the need for guying rights?

2.2 Energy Probe # 51

Ref: Tab 4, Sch. D3 Navigant Independent Survey and Review of Distribution Design Standards

Page 11 states that "THESL continues to install many submersible transformers to comply with City requirements; whereas other utilities are seeking to minimize or eliminate their use due to maintenance and harsh operating environments".

a) Please describe City requirements pertaining to submersible transformers and provide documentation for the requirements.

b) What is THESL's experience for the cost difference between maintaining submersible vs. padmounted transformers expressed in dollar terms per unit maintained?

2.2 Energy Probe # 52

Ref: Tab 4, Sch. D3 Navigant Independent Survey and Review of Distribution Design Standards

Page 30 references THESL standard design practices. Please provide copies of the following:

1. **SDP#002 Rev 3 Overhead Distribution**
2. **SDP#002Rev2 New Underground Residential Subdivisions**
3. **SDP#003Rev1 New Underground Services**
4. **SDP#005 Underground Cable Installations**
5. **SDP#006Rev 2 Underground Residential Rebuilds**
6. **SDP#007Rev1 Underground Rebuilds Industrial/Commercial Areas**
7. **SDP#008 Rear Lot Conversions**

Issue 2.3 Is THESL's proposal that the Board consider ICM projects for a three-year period, severable into three successive one-year rate periods, each with its own ICM rate adder appropriate?

2.3 Energy Probe #53

Ref: Managers Summary Tab 2, Page 7 and Page 22, Figure 1

a) Under THESL's proposal, how will over/under/ CAPEX be handled e.g. rate base closed each year or rolled over with a final accounting/disposition in 2015? Please explain in detail and cite references to Board Guidelines and/or other Board Decisions in your answer.

b) Is there a series (2012, 2013, 2014) of successive CAPEX/Rate Base Deferral/Variance Accounts proposed? (Not in evidence). If not, please explain why this would not work.

c) How will Ratepayers be protected from over/under CAPEX spending during the IRM/ICM period?

d) How will ratepayers avoid a major true-up in 2015?

e) Please explain why an alternative treatment based on three separate CAPEX/ Rate base years with *no carryover* would not work and is not appropriate.

Issue 2.4 Is THESL's proposal for an alternative to the standard treatment of the calculation of the ICM threshold together with the Board's practice of exempting certain ICM-approved capital expenditures from the application of the half year rule appropriate?

2.4 Energy Probe # 54

Ref: Managers Summary Tab 2, Appendix 3, pages 2& 3

a) Please provide an Active Excel spreadsheet corresponding to calculations in Appendix 3.

b) Please list all input assumptions and data sources for each line of calculation (e.g. cost of capital, DRR and Depreciation).

2.4 Energy Probe # 55

Ref: Tab 3, Appendix 3, Schedule C1.2, Sheet 19 and equivalent Sheets for 2013 and 2014

a) Please provide sheet 19 and similar <u>Residential</u> schedules in Active Excel Spreadsheet format and consolidate the base and 3 IRM years into one schedule and spreadsheet.

b) Confirm that Sheet 19 is based on the Board Approved <u>Average</u> 2011 Rate base.

c) If not, also provide a spreadsheet version with the average 2011 rate base. Please list all assumptions and sources of data for each line.

4. IMPLEMENTATION

Issue 4.2 Are THESL's proposals relating to rate implementation appropriate for each of the years 2012, 2013 and 2014?

4.2 Energy Probe # 56

Ref: Managers Summary Tab 2, Page 27

Please provide a Summary Schedule that shows by rate class the following Components of rates for 2011 base rates through to 2014 (prefer Excel Spreadsheet):

1. **2012 price cap adjustment**
2. **adjusted Retail Transmission Service Rates**
3. **rate rider to refund shared tax savings**
4. **rate rider for disposition of account balances in accounts 1521 Special Purpose Charge and account 1562 PILS Deferral Account**
5. **rate adder for incremental capital projects**

4.2 Energy Probe # 57

Ref. EB-2010-0142 Settlement Agreement Appendix B, Table 1

a) Please Provide a version of the Referenced Table that projects the data from 2011-2014. (prefer Excel Spreadsheet)

b) Please provide any necessary explanatory notes

4.2 Energy Probe # 58

Ref. Managers Summary Tab 2, Page 21

a) **Why does THESL meet the Board's criteria for Interim Rates effective June 1, 2012 when it did not withdraw its legal challenge until the end of August 2012?**

b) **Why does THESL meet the Board's criteria for a Rate Order with rates effective at an earlier date, for example September 1, 2012 when the delays in hearing the Application were as a result of THESL's legal actions?**