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INTERROGATORY 1:

Reference(s): none

Toronto Hydro-Electric System Limited filed an application, dated March 16, 2009, with the Ontario Energy Board for approval of a draft rate order that would give effect to new rates as of May 1, 2009. On June 8, 2009, the Board issued its Decision and Order on Cost Awards in that proceeding.

a) Is Toronto Hydro in compliance in respect of that Board Order?
b) If the answer to a) above is yes, please advise the date that your cheque for $2,314.56 was issued in payment and forwarded to Energy Probe Research Foundation.
c) If the answer to a) above is no, please advise the steps the Applicant will now take to achieve compliance.

RESPONSE:

a) Yes.

b) At the time of printing of this response, the date of that cheque cannot be confirmed. However, the cheque for Energy Probe will be included with the cheques to be mailed out to various suppliers on November 26, 2009.

c) Not applicable.

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INTERROGATORY 2:

Reference(s): Exhibit D1, Tab 5, Schedule 1 Distribution Fixed Assets

Pages 1-2 describe Transformer Station component ownership. At line 28 on page 1 the following statement appears:

> The level of THESL ownership of the low-voltage equipment varies from completely THESL-owned to completely HONI-owned.

a) Please explain how ownership of low voltage equipment is decided.
b) In the case of HONI owned LV equipment, who has operating control?
c) Does HONI own any LV circuits feeding THESL distribution stations? If yes, who is responsible for responding to trouble call on those circuits?
d) How is trouble call response coordinated between THESL and HONI for HONI owned LV station equipment?

RESPONSE:

a) The ownership of the low voltage equipment at Transformer Stations ("TSs") in the service territory of THESL varies due to the different legacy ownership demarcation agreements between Ontario Hydro and the former municipal electric utilities that amalgamated to form THESL.

   Generally, the former Toronto Hydro owned all low voltage switchgear (13.8 kV) at TSs within its boundaries. North York Hydro owned all low voltage circuit breakers (27.6 kV) and a limited number of bus components at TSs within its boundaries. Scarborough PUC owned Cavanagh TS entirely but did not own any other low

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voltage switchgear (27.6 kV) at TSs within its boundaries. Etobicoke Hydro, York Hydro, and East York Hydro did not own any low voltage switchgear (27.6 kV) at TSs within their respective boundaries. There have been no changes to that ownership structure since amalgamation and no new TSs have been constructed since then.

b) HONI retains operating control (i.e., circuit breaker open/close control) of its equipment. THESL does have the ability to enable and disable reclosing action for HONI circuit breakers serving THESL in Etobicoke, York and East York.

c) HONI does not own circuits feeding THESL municipal stations.

d) THESL will contact HONI for any trouble related to HONI-owned LV station equipment. HONI will dispatch a crew to investigate and correct any problems.

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INTERROGATORY 3:

Reference(s): Exhibit D1, Tab 8, Schedule 1 Sustaining Capital

Page 2 of this schedule refers to THESL's investigation of alternatives to replacement of direct buried cables. Lines 6-8 state that THESL explored alternatives but that the results were unsatisfactory. Please provide copies of any studies and/or reports on which the unsatisfactory assessment was based.

RESPONSE:

During 2008-2009, THESL explored alternatives to cable replacement, such as cable injection and directional boring as a means to reduce capital spending.

Cable Injection:

THESL injected 14,795 of the planned 18,227 metres of cable in the Braymore pilot project area in 2008 and 2009. There were many planned outages, some exceeding the tolerable outage duration. Additional planned outages were needed for inaccurate splice locations. Furthermore, the cable injection process cannot be applied to single-conductor and strand-blocked cable, which was introduced as a standard in the horse-shoe area of Toronto in the early 1990s. Since injecting the cable, THESL has already experienced three cable failures. The failures occurred 16, 204, and 467 days after injection. Cable failures are likely due to the presence of electrical trees which cannot be cured by cable injection.

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Directional Boring:

Results from THESL's pilot, referred to as John Tabor Phase 2, demonstrated directional boring can only be used along approximately 5% of the cable circuit due to tighter turning radii of bends, right-of-way congestion, and alignment conflicts with other underground utilities (reference EB-2009-0139, Exhibit D1, Tab 8, Schedule 1, page 14).

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INTERROGATORY 4:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Table 1 on page 1 of this schedule shows projects 10846 and 10847, both cable replacement projects for feeder NAH9M23. The project detail sheets on pages 3-6 do not make clear what the difference between the two projects is. Please explain.

RESPONSE:

The 100-150 Burrows NAH9M23 UG Rehab project is staged in two separate projects. Project 10846 is the first phase for the civil construction work and has been scheduled for the first quarter of 2010 followed by, Project 10847, the second phase for the electrical work.

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INTERROGATORY 5:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 17-18 of this schedule show project 12244 to replace cable on circuit NA502M24.

a) The estimated cost on page 17 is $4,520,000 while on page 18 it is $4,432,561. Please explain.

b) In the justification section on page 18, the avoided CMO is shown as 343. Why is the expected improvement in CMO so low?

RESPONSE:

a) The total estimated cost ($4,432,561) on page 18 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $4,520,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

b) The table used in the justification data on page 18 was incorrect. See the following pages for the correct data.

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PROJECT: E09181 Deerbrook NA502M24 UG Rehab

PORTFOLIO: 1-UG Direct Buried Cable

REFERENCE NO: 00012244 (Ellipse Number)

Project Description

The purpose of this project is to improve reliability and replace equipment that has experienced significant outages. I t is proposed to rebuild the area by replacing the underground cables.

Benefits, in terms of meeting Toronto Hydro's service objectives, include the following:

- Reduced likelihood of customer outages.
- Reduced expected customer-minutes lost.
- Minimization of life-cycle cost for the cables, considering all stakeholders.

District	Scarborough
Project Neighborhood	Deerbrook
Station	Cavanaugh
Feeder	NA502M24
Total Circuit Length	4,835m
Estimated Total Cost of Project	$4,520,000

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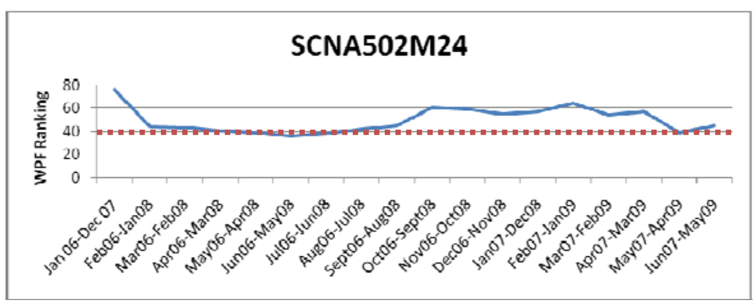
Justification

Implementation Resources				
Estimated Total Cost	$4,520,000			
Prioritization Criteria				
Worst Performing Feeder Ranking	45		Ranking as of May 2009	
Feeder Experiencing Sustained Interruption	5		As of May 2009	
Historic Reliability Data				
	2006	**2007**	**2008**	**2009 – Partial**
Feeder CI	4,766	8,236	8,231	6,542
Feeder CMO	163,537	37,106	59,906	125,364
Primary Cable – CI	1	0	3,321	3,336
Primary Cable – CMO	566	0	29,423	109,334

Additional Justification



The figure at right shows the status of this feeder on the worst performing feeder list. This feeder was originally built in the 1970s. In 1991 and 1999 approximately half of the subdivision was rebuilt. This project will rebuild the remaining portion of the subdivision. Recently, in the past two years, this area has experienced several primary cable and transformer failures.

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INTERROGATORY 6:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 19-20 show project 12418 to replace cable on circuit SS46F2. The length of this circuit is shown as 208 m and the cost to replace is $510,000. Please explain why the cost should be so high for a relatively short length of cable.

RESPONSE:

The total estimated cost for this project is $510,000. This is a rehabilitation project and THESL is converting the loop in that area from 4.16kV to 27.6kV. This project not only involves replacing the underground direct buried cable but also designing and building the civil infrastructure and replacing the transformers.

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INTERROGATORY 7:

Reference(s): Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried

Pages 21-22 of the schedule show project 12441 to replace cable on circuit NT47M3.

a) The total estimated cost of the project on page 21 is $5,660,000 whereas on page 22 the total estimated cost is $3,477,000. Please explain.

b) The reliability section of the justification shows steady improvement in both feeder and cable CI and CMO from 2006 to 2009. If the cable is in very bad condition, the opposite would be expected. Please comment.

RESPONSE:

a) The total estimated cost ($3,477,000) on page 22 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $5,660,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

b) NT47M3 has consistently and continues to be ranked as one of the worst performing feeders in the THESL system. As of November 2009 this feeder is currently ranked the second worst performing feeder. Short-term improvements in reliability statistics are perhaps due to other smaller initiatives such as repairing some fault interrupters and adding sectionalizing fuses. Past failures have stressed the direct-buried cable insulation to the point where these cables have a high probability of failure and are considered high risk. This project is part of a series of projects designed to

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proactively rehabilitate the entire feeder.

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INTERROGATORY 8:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 23-24 of the schedule show project 13062 to replace cable on circuit SS64F3. The project cost on page 23 is shown as $930,000 while on page 24 it is shown as $593,000. Please explain.

RESPONSE:

The total estimated cost ($593,000) on page 24 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $930,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

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INTERROGATORY 9:

Reference(s): Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried

Pages 29-30 of the schedule show project 13123 to replace cable on NT63M12. The estimated cost on page 29 is $6,540,000 while on page 30 it is $4,041,000. Please explain.

RESPONSE:

The total estimated cost ($4,041,000) on page 30 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $6,540,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

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INTERROGATORY 10:

Reference(s): Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried

Pages 33-34 of the schedule show project 13500 to replace cable on MG-F1/MG-F4. The justification section on page 34 shows this feeder ranking 378 on the worst performing feeder listing.

a) Why is a feeder with ranking of 378 on the WPF listing a priority for cable replacement?

b) What is the equipment referenced in the Additional Justification section that failed causing the extensive outage to the area?

RESPONSE:

a) This is one of four projects designed for the conversion and decommissioning of Albion MG-F4. The project is driven primarily by the poor condition and reliability of underground direct-buried cable and submersible transformers in the area. The plant on Sultan Pool Drive was designed such that the last three submersible transformers are fed back from MG-F1. The plant is the same design as the F4 underground plant and is being replaced at the same time to take advantage of economies of scale.

b) The outage was caused by an underground direct-buried cable.

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INTERROGATORY 11:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 38-39 of the schedule show project to replace cable on MG-F4 and move rear lot construction to the street.

a) The ellipse number on page 38 is 16224 but the project is listed on the page 1 summary as 13505. Please advise the correct project number to use.

b) The estimated cost on page 38 is $1,580,000 while on page 39 it is $1,230,000. Please explain.

c) Is the present rear lot system currently overhead or underground?

RESPONSE:

a) The correct ellipse project number for this project is 13505.

b) The total estimated cost ($1,230,000) on page 38 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $1,580,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

c) The existing rear lot system at this location is currently underground.

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INTERROGATORY 12:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 39-40 show project 14028 to replace cable on circuit NA47M17. In the justification section the Feeder CI and CMO are much higher than the primary cable CI and CMO over the period 2006 to 2008.

a) Is part of this circuit overhead?
b) Please explain why the primary cable reliability statistics are significantly better than the feeder as a whole statistics.
c) If the direct buried cable is not responsible for most of the CI and CMO why is THESL proposing to replace it.

RESPONSE:

a) Yes, it has OH line as well.

b) The reason why CI and CMO are lower for the primary cables is because the CI and CMO of the feeder come from failure of other assets like switches, transformers, conductor, insulators, etc.

c) Direct buried cable replacement is part of the larger feeder rebuild project. Beside the cable replacement, the project scope of work includes replacing old switches, elbows and transformers.

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INTERROGATORY 13:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 41-42 of the schedule show project 15219. The description in the project summary is Cable Inject. The description on page 41 is that the cables will be replaced. Please clarify what the project consists of.

RESPONSE:

This project was originally submitted in our rate application submitted in 2007 (Reference: Exhibit D1, Tab 8, Schedule 8-2, Project #E08115 for an estimated cost of $4,680,000) as an underground rehabilitation project for construction in 2009.

The Board Decision in EB-2007-0680 ordered a 20 percent reduction in sustaining capital spending for each of 2008 and 2009. As mentioned in THESL's Sustaining Capital Progress Report, Exhibit Q1, Tab 2, Schedule 1, page 4, a cross-functional team reviewed all available projects to determine which were suitable for deferral and investigated appropriate mitigation measures to limit the adverse impacts of project deferrals on reliability and safety. During this review process, feeder/project maps were analyzed with respect to reliability risks in order to recommend the most appropriate course of action in each case. Cable injection was identified as one of the measures that could be taken to mitigate the impact of project deferrals. As such, the project scope was changed from cable replacement to cable injection under Ellipse Estimate # 15219 for $1,400,000.

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However, as mentioned in our response to the Interrogatories of Ontario Energy Board Staff, Interrogatory 60 (d), over the last two years THESL has spent considerable effort in exploring alternative solutions to find and rehabilitate moderate and high risk cables. So far the conclusions are that the accuracy of finding the highest risk cables is low, the rehabilitation methods are complex and disruptive to customers, and after completion failures have continued to occur.

The distribution system components (cables, elbows and transformers) have been failing at an abnormal rate with extended outages. Subsequently, due to the size of this project it has now been targeted for cable replacement in 2010.

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INTERROGATORY 14:

Reference(s): **Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried**

Pages 51-52 of the schedule show project 15539 to replace cables on circuit NT47M3. The estimated cost on page 51 is $520,000 while on page 52 it is $363,000. Please explain.

RESPONSE:

The total estimated cost ($363,000) on page 52 was the high level cost estimated at the onset of project justification. At the time of submitting the project for rate application the detail estimated total cost for the project was $520,000 and this value was used in Exhibit D1, Tab 8, Schedule 9-1 Portfolio 1: Underground – Direct Buried, Table 1, Underground – Direct Buried Projects, Page 1.

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INTERROGATORY 15:

Reference(s): Exhibit D1, Tab 8, Schedule 10

Page 6 of this schedule shows the ten year plan for capital expenditures.

a) Please explain the difference between the Sustaining Capital category and the Emerging Requirements category.

b) Standardization appears to involve some replacement of aging equipment according to the details provided in D1 T9 S1 for handwell and cable standardization. Please explain how THESL decides when a replacement falls into Standardization capital as opposed to one of its underground categories in Sustaining Capital.

c) Are different priorities assigned to Emerging Requirements capital compared to Sustaining Capital?

RESPONSE:

a) Exhibit D1, Tab 8 labelled "Operational Investments" which includes "Sustaining Capital" and details several material capital projects that are planned for the 2010 test year. These capital projects are intended to maintain the adequacy, reliability and quality of electricity distribution service to THESL's customers. These projects are derived and optimally timed from an overall system perspective by using reliability analyses, asset condition assessments and a risk-based approach for replacing assets.

In addition to required "Operational Investments" which form part of THESL's regular capital program, a number of capital requirements arising from recent events and government initiatives such as the GEGEA and the Transit City expansion are presented at Exhibit D1, Tab 9, and labelled "Emerging Requirements" in this

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Application. Within "Emerging Requirements", initiatives such as Standardization which deals with the phasing out of legacy equipment, Worst Performing Feeders and Downtown Contingency require specific attention. An increased level of effort will be required for these initiatives to be carried out in an expedited manner to make prudent use of existing and new technologies in order to provide efficient and effective levels of customer service. These are projects that are not identified through the system analysis process described above, but rather from a more granular analysis of component obsolescence (Standardization), design inadequacy (Standardization, Downtown Contingency and Worst Performing Feeders) and focused-customer-areas reliability improvements (Worst Performing Feeders).

b) There are no handwell or secondary cable standardization capital projects in Sustaining Capital.

c) No, there are no different priorities assigned to Emerging Requirements Capital compared to Sustaining Capital.

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INTERROGATORY 16:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Page 1 discusses the rationale for replacing distribution system assets that are not up to current THESL design standards.

a) Does the Electrical Safety Authority require distributors to replace distribution system components or designs that do not conform to current standards? If yes, please provide the reference(s) to ESA policies that require the replacement.

b) Lines 13-20 describe THESL's practice for selecting and prioritizing asset replacements that are judged obsolete. Please provide copies of any policies or practices describing the process in detail.

c) Are all legacy assets selected for replacement at the end of their service lives?

RESPONSE:

a) Ontario Regulation 22/04, "Electrical Distribution Safety", is enforced by the Electrical Safety Authority ("ESA") and outlines the requirements that THESL is required to fulfill when designing, building, maintaining and operating the distribution system. It requires THESL to maintain electrical equipment in proper operating condition. The ESA does not directly order distributors to replace components or designs that do not conform to current standards. As a licensed distribution company, THESL is free to develop and self-approve the construction standards and equipment specifications used to build and maintain our system. THESL developed specifications and standards are created in accordance with industry standards, best utility practices and safety by design principles. The construction standards are reviewed and approved by professional engineers as per

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the requirements in Ontario Regulation 22/04. A major consideration when reviewing installations is any bulletins or correspondence from the ESA regarding public safety issues related to equipment and design standards. If the ESA has published information which indicates that an existing or proposed installation could be hazardous to the public it will heavily influence THESL decision to approve a new standard or replace an exiting installation.

b) Please see Exhibit C1, Tab 6, Schedule 2.

c) Whether a legacy asset is replaced at the end of its service life, if it is run to failure or if it is proactively replaced before the end of its service life is different for each asset. This decision will be made based on the impact of a failure and/or any combination of the factors mentioned in the previous response. When a legacy asset is replaced, it will be replaced with whatever the standard replacement is at the time. Legacy assets would only be re-installed in the field under emergency circumstances and if no suitable alternative is available.

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INTERROGATORY 17

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Table 1 on page 2 shows the fund allocation between standardization programs. Handwell standardization and Cable standardization allocations are $9.2M and $5.2M respectively.

a) Please confirm that these costs for handwell and street lighting cable standardization are included in the $32.7 M proposed for 2010 under Standardization in the 10 year capital plan shown in Exhibit D1, Tab 8, Schedule 10, page 6.

b) If these amounts are included, please explain the apparent conflict with the statement made in Exhibit A1, Tab 1, Schedule 1, page 1, lines 16-20 that "cost consequences of the Streetlighting Applications have not been reflected in this Application".

RESPONSE:

a) Confirmed. However, the term "street lighting cable" refers only to secondary cable already owned by THESL, and not to assets that are the subject of the Streetlighting Application.

b) Please refer to the response above.

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INTERROGATORY 18

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Table 1 on page 2 shows the fund allocation between standardization programs. Handwell standardization and Cable standardization allocations are $9.2M and $5.2M respectively.

a) Please confirm that these costs for handwell and street lighting cable standardization are included in the $32.7 M proposed for 2010 under Standardization in the 10 year capital plan shown in Exhibit D1, Tab 8, Schedule 10, page 6.

b) If these amounts are included, please explain the apparent conflict with the statement made in Exhibit A1, Tab 1, Schedule 1, page 1, lines 16-20 that "cost consequences of the Streetlighting Applications have not been reflected in this Application".

RESPONSE:

a) Yes.

b) Costs included in this Application are associated with distribution equipment supplying street lighting circuits and supply points.

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INTERROGATORY 19

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Page 2 describes THESL's plans to deal with its 11,000 handwells.

a) Line 13 refers to 1,000 handwells that will be completely replaced because they are "deemed to be high risk". Please define "high risk" in this context.

b) Line 15 refers to 2,000 handwells that cannot be either entirely replaced or have their covers replaced. Please explain why complete replacement or cover replacement is not feasible for these locations.

RESPONSE:

a) Handwell replacements are viewed as the most effective solution to mitigate contact voltage. However replacement of all THESL-owned handwells is not practical in the short-term due to time and resources required by THESL, and by other parties who may be affected. For example, the City of Toronto will need to approve permits for these repairs and many areas in the City with newly constructed right-of-way where THESL handwells are located will have a construction moratorium imposed preventing the replacement. In order to maximize the benefits associated with complete handwell replacements, THESL is planning to prioritize the work based on which areas were found to have the most problems and follow up work resulting from the Level III inspections.

b) During the Level III inspections and subsequent follow up work, THESL has encountered a number of handwells which have been damaged since installation by civil contractors (assumed to be during sidewalk re-surfacing). Examples of this

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include rebar penetrating the handwell walls and concrete spilling into the handwells. In these situations, it is likely that any replacement lid design which incorporates a protective sleeve will not fit into the opening. Additionally, THESL is expecting to encounter some locations where physical space limitations prevent installation of the new non-conductive unit (due to it being larger than existing installations). If one or both of these is true for a given location, the civil retrofit options may not be practical.

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INTERROGATORY 20

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Lines 3-6 on page 5 refer to "future programs" involving handwells. If all handwells will be dealt with in the standardization process by 2010 as stated in these lines, what future programs for handwells does THESL anticipate will be necessary?

RESPONSE:

Depending on the relative success of each remediation option and how effectively the problem is mitigated, THESL may propose more complete handwell replacements in the coming years. It is also possible that other technologies may become available which address the contact voltage from an electrical perspective (for example, better fusing or Ground Fault Circuit Interrupter ("GFCI") devices designed for underground circuits). At the moment, there are no plans for further retrofit programs.

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INTERROGATORY 21

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Table 2 on page 5 lists examples of outages in the Etobicoke area.

a) For each of these examples please explain how the proposed switch and feeder lateral standardization program would reduce the number of customers interrupted and the duration of those interruptions.

b) In the Horner TS R30M4 outage, the cause is noted as a branch on the 3 phase primary. Why would it take 445 minutes to locate and remove the tree branch?

RESPONSE:

a) The proposed switch and lateral standardization program will add fuses to radial lateral circuits. The fuses will be coordinated with the station breaker protection to allow the fuses to clear the faults on the radial lateral circuits. Should any faults occur on the radial lateral circuit, this upstream fuse will operate and clear the fault, isolating the supply to customers on that particular radial lateral circuit but having no effect on customers supplied from other radial lateral circuits fed from the same feeder. Without this fuse, the fault is cleared by the station breaker and the whole feeder will be de-energized, interrupting all customers fed by this feeder. Also, with the presence of a fuse, the fault location can be identified more quickly and thus the repair can be completed sooner, resulting in shorter duration outages.

b) The fault in question occurred on April 25, 2009. During this day there were severe storms in Toronto including 100 kilometer per hour winds. Environment Canada describes the weather events of this day as a “powerful squall line of thunderstorms

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impacted areas from Windsor and Sarnia in the southwest to the Ottawa area in the east”. As a result of the weather, maintenance crews had an unusually large volume of power outage calls to respond to. This unusually high call volume resulted in unusually high wait times for customers to have their power restored. The actual restoration time of this fault was 40 minutes (20 minutes for fault location and 20 minutes for restoration). However, the delay in dispatch time was due to the weather related events of this day, resulting in 445 total outage minutes.

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INTERROGATORY 22

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

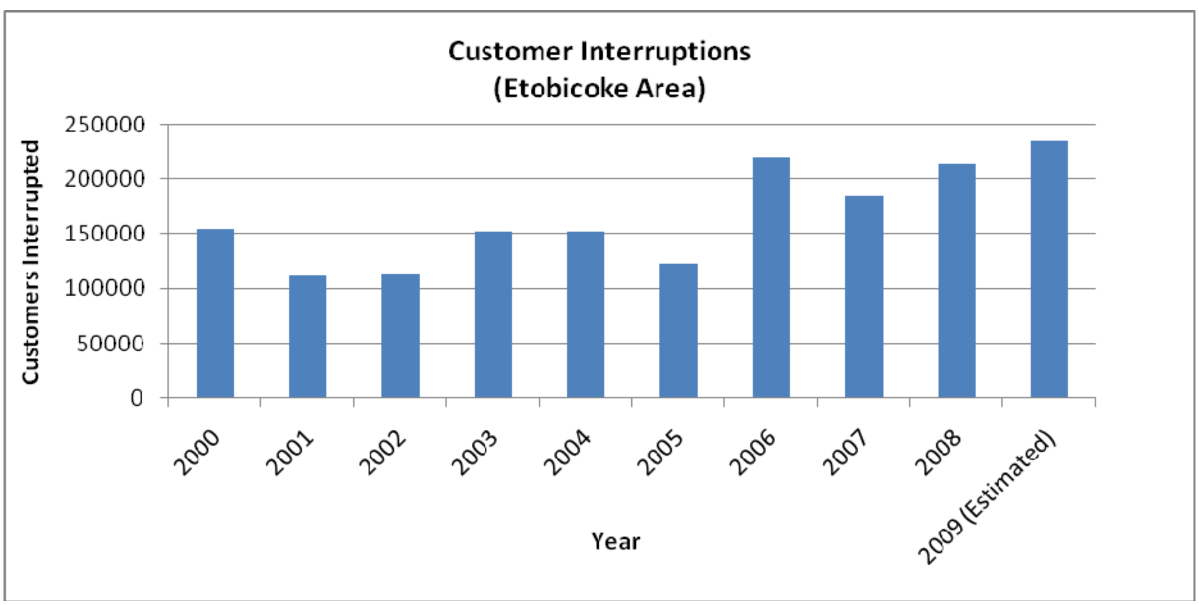
Figure 4 on page 6 shows total customer interruptions in the Etobicoke Area.

a) Please provide an expanded chart for Etobicoke showing total annual customer interruptions for the 10 years since amalgamation along with comparative charts for other districts/areas within the THESL system? How do these compare with THESL targets for total customer interruptions?

b) Please provide a chart showing annual SAIDI and SAIFI data for each of the districts and for the total THESL system for the ten years since amalgamation. How do these compare with THESL targets for total customer interruptions?

RESPONSE:

a)



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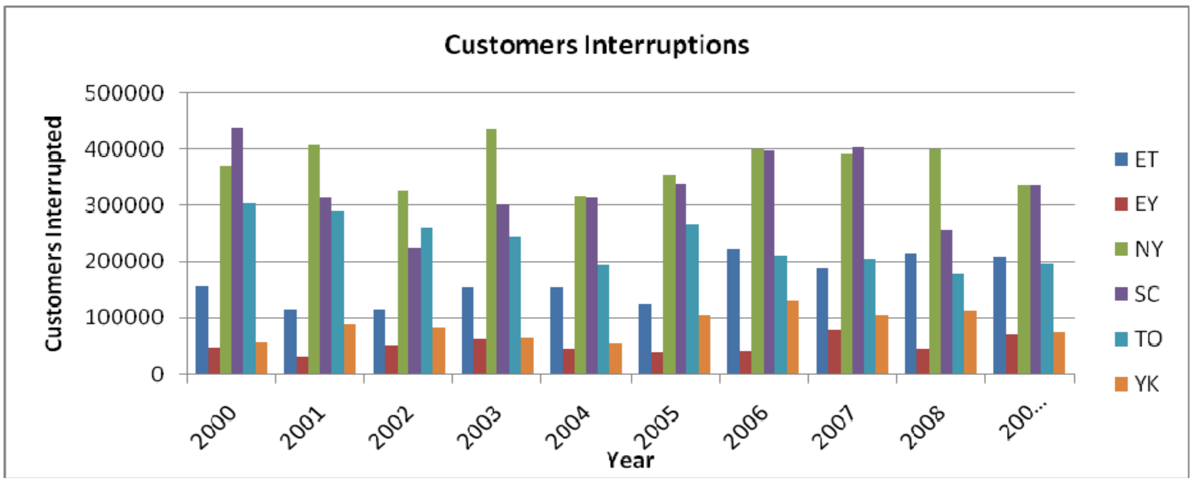

ET: Etobicoke

EY: East York

NY: North York

SC: Scarborough

TO: Toronto Core

YK: York

THESL does not have targets for total customer interruptions, however, THESL does have targets for SAIFI (System Average Interruption Frequency Index) which is equal to Number of Customers Interrupted divided by the Total Number of Customers. This comparison is done in part (b). The justification for targeting Etobicoke is due to the fact that of the three worst areas for failure frequency, Etobicoke has the highest number of outages due to a fault on the trunk of the feeder (i.e., faults that are cleared by the station breaker and interrupt all the customers on that feeder). By sectionalizing the system, we are reducing the length of each section of the trunk and then connecting these shorter sections together. With this design,

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isolation of faults on the trunk will affect a smaller number of customers. Since the Etobicoke area has the most faults on the trunk of the feeder, we plan to see the most benefit from sectionalization here.

b) SAIFI and SAIDI data for past ten years excluding the Major Event Days ("MEDs") is listed in the tables below. This may be compared to the overall system SAIFI and SAIDI values as THESL has targets only for SAIFI and SAIDI not for Customer Interruptions. Among the three worst areas of North York, Etobicoke and Scarborough for failure frequency, Etobicoke has the highest number of outages due to a fault on the trunk of the feeder and thus will benefit the most from sectionalization.

SAIFI	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 (Estimated)
ET	1.59	1.16	1.16	1.55	1.54	1.23	2.20	1.85	2.12	2.05
EY	1.86	1.21	2.00	2.43	1.71	1.50	1.53	3.01	1.72	2.65
NY	2.50	2.78	2.20	2.93	2.13	2.36	2.64	2.58	2.62	2.19
SC	3.30	2.38	1.68	2.26	2.34	2.49	2.91	2.96	1.85	2.43
TO	1.38	1.30	1.17	1.09	0.86	1.17	0.92	0.89	0.78	0.85
YK	1.51	2.38	2.24	1.75	1.45	2.80	3.47	2.79	3.01	1.95
Total	**2.07**	**1.88**	**1.59**	**1.89**	**1.60**	**1.81**	**2.06**	**2.01**	**1.76**	**1.77**

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SAIDI	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 (Estimated)
ET	1.65	1.03	0.89	1.00	1.00	0.83	1.38	1.41	1.37	1.64
EY	1.72	1.35	2.09	1.56	2.12	1.98	0.89	3.74	2.01	0.76
NY	1.71	1.71	1.82	1.97	1.30	1.47	1.49	1.48	1.73	1.84
SC	2.54	1.83	1.60	1.88	2.00	1.50	1.63	1.73	1.42	1.75
TO	0.78	0.73	0.76	0.69	0.46	0.81	0.67	0.73	0.55	1.23
YK	1.35	1.75	2.88	1.17	0.59	1.90	2.11	1.37	2.01	1.32
Total	**1.54**	**1.29**	**1.35**	**1.32**	**1.11**	**1.21**	**1.24**	**1.35**	**1.24**	**1.52**

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INTERROGATORY 23

Reference(s): **Exhibit D1, Tab 9, Schedule 1 Emerging Requirements**

Lines 4-8 on page 6 describe the rationale for proceeding with upgrades in the Etobicoke district now rather than as part of future sustaining capital programs.

a) Why is it "becoming more difficult to support legacy installations" as referenced in 5?

b) What constitutes the "support" referred to?

c) When would sustaining capital programs ordinarily address the reliability concerns in Etobicoke if this proposed early effort is not approved by the Board?

RESPONSE:

a) Legacy standard installations require THESL to maintain inventory of equipment which is no longer maintained and purchased for new installations. Often times, the equipment is obsolete and/or can be difficult and expensive to procure. It can also present operational challenges as apprentices and other new employees are required to be taught how the operation of the legacy equipment differs from that of modern installations.

b) As outlined in the previous response, support can refer to stocking of critical spares, ensuring equipment supply availability, training operators and apprentices to understand differences in operation and maintenance procedures.

c) Though there are sustaining capital programs in the planning stages for Etobicoke feeders, it is possible that by the time the projects are implemented Etobicoke's

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SAIDI and SAIFI numbers will have deteriorated further. This would be reflected in the increased number of customer complaints. By addressing the systemic design issues immediately, we will proactively reduce the impact that future failures will have on the customers in Etobicoke.

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INTERROGATORY 24:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Table 3 on page 7 shows the planned installations in the Etobicoke system.

a) Does THESL own the overhead and/or underground feeders from Hydro One Transformers stations? Where are the ownership demarcation points?

b) Please explain how the existing system in Etobicoke is sectionalized when a feeder interruption occurs.

c) Please explain how the existing system in Etobicoke provides for load transfers when a feeder interruption occurs.

RESPONSE:

a) Yes, all circuits supplying THESL customers which emanate from a Transformer Station ("TS") in Toronto are owned by THESL. The circuit ownership starts at the load side cable terminations at the circuit breaker. The low voltage circuit breaker ownership is described in Exhibit R1 Tab 6 Schedule 2 (a).

b) When a feeder interruption occurs on the 27.6 kV system in Etobicoke the HONI circuit breaker opens automatically and interrupts power to all customers. The THESL Power System Controller ("PSC") then remotely polls the SCADA switches placed at two points along the feeder, starting with the switch closest to the station, and looks for fault indications from that switch. If the switch shows no indication of fault current passing through the switch the PSC will open that switch thereby isolating all downstream customers for restoration via adjacent feeders. If the fault current did pass through the switch then the PSC opens this switch to isolate the fault,

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and proceeds to request that Hydro One Control close station breakers thereby restoring power to upstream customers.

If the fault resides on the underground feeder cable between the station breaker and the first sectionalizing switch the PSC will open that first SCADA switch, restore power to all downstream customers, and then dispatch a THESL Grid Response crew to open the riser switch at the end of the underground feeder cable. Once this step has been completed the PSC will then close the first SCADA switch and restore power to remaining customers.

Currently, this capability does not exist on either the 4.16 or 13.8 kV distribution systems in Etobicoke.

c) When a feeder interruption occurs on the 27.6 kV system in Etobicoke the HONI circuit breaker opens automatically and interrupts power to all customers. The THESL PSC then remotely polls the SCADA switches placed at two points along the feeder and look for fault indications from that switch. If the switch shows no indication of fault current passing through the switch the PSC will open that switch and restore power to customers downstream of the switch by remotely closing the respective normally-open switch points to adjacent feeders. If the fault current did pass through the switch then the PSC will open this switch to isolate the fault, and proceed to request that Hydro One Control close station breaker and thereby restore power to upstream customers.

Once either of these actions is completed the PSC will dispatch a Grid Response crew

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to patrol the isolated feeder circuit that resides downstream of the open switch in order to locate and remove the fault source. This activity may require the replacement of failed components, or the removal of tree limbs or foreign objects, and will likely require more than one hour before power is restored.

On the 4.16 and 13.8 kV distribution systems in Etobicoke the THESL PSC has full control of the station breaker, but has no other telemetry or SCADA-enabled devices at their disposal to fault locate and/or restore power.

SWITCH AND FEEDER LATERAL STANDARDIZATION

This portfolio involves the standardization of the distribution system in the former district of Etobicoke through the installation of pad-mounted switchgear, overhead fuses and remote operated SCADAMATE switches. In many cases minor failures cause large scale outages in both frequency and duration for customers due to the inflexibility of the system, as illustrated in Table 2 below.

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Table 2: Examples of Outages in Targeted Area

Year	Description	Cause	Customers Interrupted	Duration (minutes)
2009	Richview TS, 88M45 feeder was interrupted due to an underground primary cable fault	Defective Equipment	6,700	40
2009	Richview TS was interrupted due to loss of supply from Hydro One	Loss of Supply	4,632	45
2009	Horner TS, R30M4 feeder was interrupted due extreme wind. Crews found a tree branch on the 3-phase primary	Adverse Weather	4,192	445
2009	Richview TS, 88M17 feeder was interrupted due to a customer owned equipment which failed due to the electrical room flooding	Foreign Interference	3,690	29

From Figure 4 below, the total number of customers interrupted per year in the Etobicoke district is showing an upward trend.

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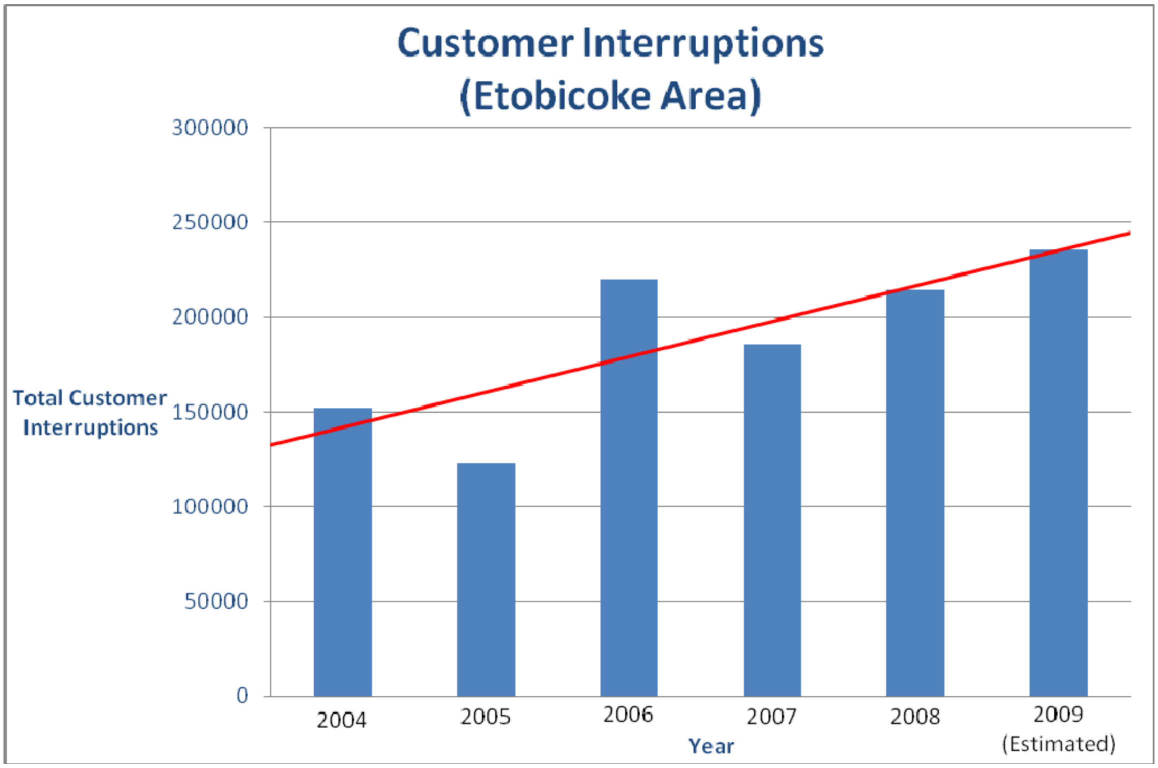

Figure 4: Total number of customer interruptions per year since 2004.

In the ten years since amalgamation THESL's construction standards have been harmonized and updated and it is becoming more difficult to support legacy installations. While this area will eventually be addressed under THESL's sustaining capital programs, current trends in reliability metrics (as seen above) indicate that work will be required in the short term. This investment will be used to bring the feeders up to standard by installing overhead fuses, pad-mounted switchgear and remote controlled SCADAMATE switches in the 27.6 kV and 13.8 kV distribution systems in this area. This equipment will allow system sectionalisation, thereby reducing the scale and scope of customers affected during system outages. Tie-points

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will be provided between feeders which will further reduce the length and frequency of outages. SCADAMATE switches will also facilitate future feeder automation and support THESL's smart grid plans.

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INTERROGATORY 25:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

This program of Cable standardization on page 7 appears to involve replacement of street lighting cables that currently belong to a THESL affiliate.

a) If THESL is unsuccessful in its applications to assume ownership of the street lighting system, how will the aging cables be dealt with?

b) The evidence states that the initial 120 km of cable to be replaced will cost an estimated $5.2 M. This is estimated to be approximately 24% of the streetlighting cable in Toronto. What is the estimated cost to replace the balance (76%) of the cable not covered by the 2010 proposal?

RESPONSE:

a) Cables which are determined to be on the THESL side of the THESL-THESI ownership demarcation point will be replaced and these costs are included in this Application. THESI-owned cables would be addressed in THESI's capital planning.

b) The 24% figure is a very rough estimate of the percentage of underground, conduit-encased cable THESL will be replacing with the complete handwell replacements. THESL has only estimated the costs for cable which we are planning to replace in 2010 and of the poorest condition.

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INTERROGATORY 26:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Replacement of submersible transformers with switched transformers is proposed on page 9 of Schedule 1.

a) Of the approximately 9,000 submersible transformers referenced, how many will be replaced with switched transformers? Will all of these be completed in 2010?

b) If the program is multi year, how long will it take to complete?

c) The estimated cost for 2010 is $1.9 M according to Table 7 in Exhibit D1, Tab 8, Schedule 9-7. If the program is multi year what will it ultimately cost?

RESPONSE:

a) THESL is planning to replace 10 legacy submersible transformers in 2010.

b) The program is not multiyear. No decision has been made at this time regarding the future of this program. Any future programs will be reflected in future rate filings.

c) See response to part a) above.

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INTERROGATORY 27:

Reference(s): **Exhibit D1, Tab 9, Schedule 1 Emerging Requirements**

Replacement of submersible transformers is described on pages 9 and 10. At line 1 on page 10, it is noted that "the crew must remove the energized transformer elbows so that repairs can proceed" as an option to de-energizing the entire loop.

a) Why is it not acceptable to remove energized elbows as an alternative to de-energizing the loop?
b) If removing the energized primary elbows on a faulted transformer is not an acceptable alternative, is it acceptable to de-energize the loop long enough to remove the elbows, then reenergize to restore power to customers upstream of the faulted transformer?
c) If the proposed sequence in b) is acceptable, please revise the estimates in Table 4 on page 12 to reflect the fact that customers on T1, T2 and T3 in the Legacy Installation illustration on page 11 would only be subject to a switching outage.
d) In the Legacy installation illustration on page 11, does a fault on T4 result in T5 also being interrupted? If yes, would lifting the feed through elbow on T3 be acceptable considering that it is not under load if both T4 and T5 are out of service?
e) In the Standardized Installation illustration on page 11, does switch 2 open automatically when a fault is sensed on T4 or is a crew required to manually open the switch?

RESPONSE:

a) Load-break elbows are designed to be operated a certain number of times under load, provided they are maintained. Perishable components must be inspected and replaced

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as the elbow ages. As part of the reliability centered maintenance program, THESL has decided that it is not cost effective or practical to maintain these devices and track the number of operations. Instead, the work practice is not to operate them under load (because it is not guaranteed that there won't be a catastrophic failure if an elbow is operated too many times). There are also concerns about contamination in underground vaults which is a safety hazard when working with exposed, energized equipment. Transformers with load break switches, the current standard, offer improved safety in switch operation.

b) Yes. The example on page 11 is a simplification of the system configuration. Please see the response to part c) for further explanation.

c) See below for a revised example and table.

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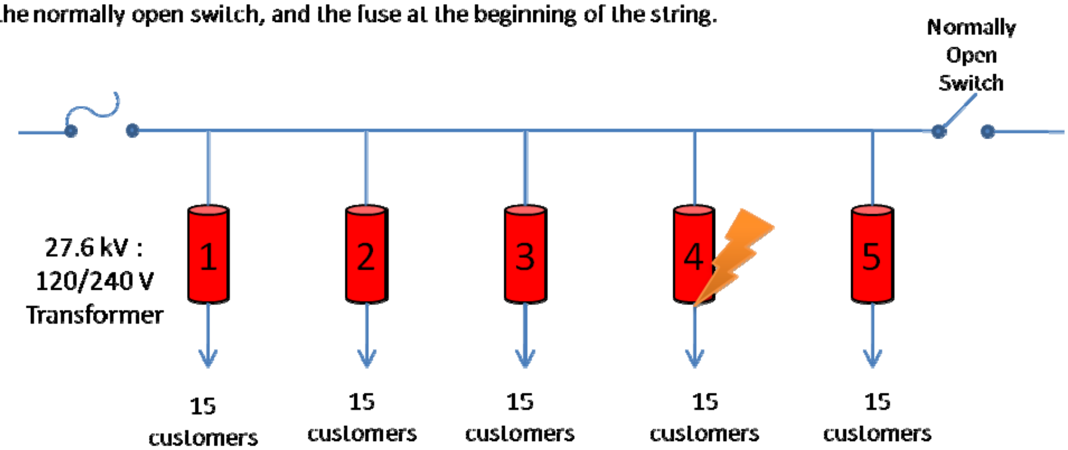
Assumptions

- 5 transformers on the loop
- 15 residential customers per transformer
- Fault on T4 has cause the internal fuse to blow

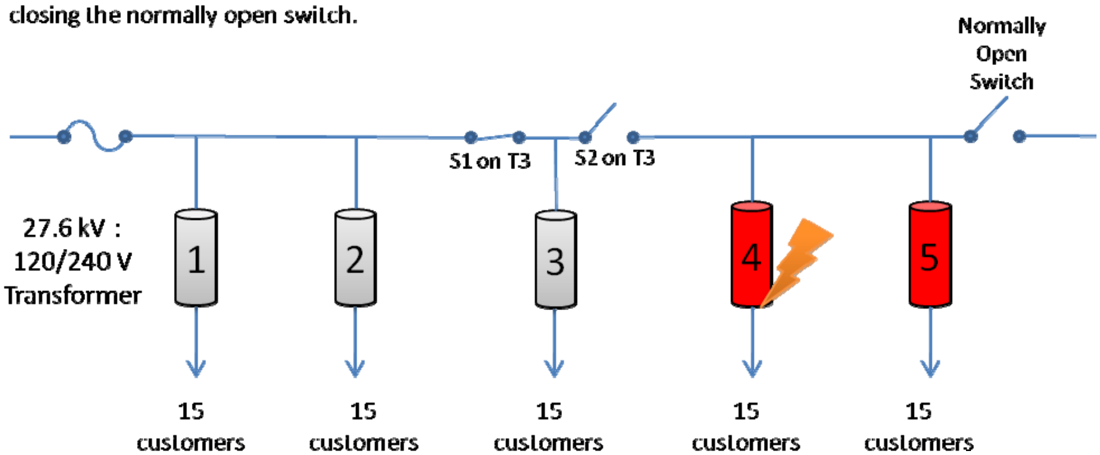
Legacy Installation

In order to install a new transformer and restore power to customers on T4, the entire loop is de-energized to allow the T4 elbows to be pulled. Customers interrupted is **75** (15 customers/transformer x 5 transformers). Customers on T1, T2, T3 and T5 are restored by closing the normally open switch, and the fuse at the beginning of the string.



Standardized Installation

T3 has been replaced with a standard switchable transformer. When the fault occurs on T4, crews will open S2 on T3, de-energizing T4 and T5, and then pull the elbows on T4. Customers interrupted is **30** (15 customers/transformer x 2 transformers). Power will be restored to T5 by closing the normally open switch.



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Note that there is still a reduction in the number of customers interrupted. There will also be an improvement in total customer minutes out, but it will depend heavily on the switching times and the time required to replace the transformer.

d) When T4 experiences a transformer fault, the internal fuse will blow and de-energize transformer T4, resulting in service interruption to the 15 customers supplied from T4. Until crews isolate T4, T5 will not be de-energized. T5 will need to be de-energized in order for T4 to be isolated. Even if T4 and T5 were interrupted, the T3 elbows would still be on potential and crews would not pull them.

e) The line switches are manually operated and do not have any fault sensing or automatic operation capability.

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INTERROGATORY 28:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

Pages 13 and 14 describe the rationale for replacing Completely Self Protected (CSP) transformers.

a) How frequently do fuses blow in CSP transformers?
b) What is the most frequent cause of the fuse blowing in CSP transformers?
c) Does THESL maintain transformer loading history for CSP transformers to anticipate an overloaded condition?
d) Would smart meter data more accurately predict an overloaded condition?
e) Would replacement of potentially overloaded CSP transformers on a proactive basis reduce the number of fuse blowing incidents?
f) What is the cost to replace a CSP transformer with the new standard?
g) How much is the replacement program expected to cost?
h) How many years will the program require for completion?

RESPONSE:

a) The frequency of fuses blowing inside CSP type transformers depends on the time of the year. Based on historical failure data, typically a higher frequency is seen in the summer months (June, July and August) due to higher transformer loading. Historical failure data indicates a growing trend for CSP transformer failures to happen during the summer months. These failures in the summer now account for over 40% of the 43 average annual CSP transformer failures.

b) The most frequent causes of CSP transformers blowing fuses are overloading and

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defective equipment. Overloading is due to increased demand to serve customer devices, particularly air conditioners in the summer months. As noted, this is when the highest frequency of CSP transformer failures is seen.

c) THESL does have a process in place to identify overloaded CSP transformers on poorly performing feeders and recommends that they be replaced with current standard of higher kVA rated transformers where required.

d) Yes, the utilization of smart meter data would help THESL more accurately predict which CSP transformers are most likely to fail due to overloading. This would enable THESL to see exact power demand values for customers fed from a given transformer.

e) Since one of the most common modes of failure of CSP type transformers is due to high loading, proactive replacement of CSP type transformers with higher kVA-rated standard transformers would reduce the number of fuse blowing incidents on CSP-type transformers overall.

f) The cost to replace a single CSP transformer will depend on whether or not the pole needs to be replaced. If the pole does not need to be replaced, the estimated cost is $12,000. If the pole does need to be replaced, the estimated cost is $17,000.

g) In 2010, THESL plans to install 80 CSP transformers, with preliminary sampling indicating that 25% will not involve a pole replacement. Based on this information, the estimated cost for CSP replacements is $1.26M.

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h) A very rough estimate is 25 years. Some of the transformers will be replaced through regular capital rebuilding projects, end of life replacement and emergency failures (where this is possible) and others will be replaced under the standardization portfolio.

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INTERROGATORY 29:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements

The reliability analysis for CSP vs. Standard Installation transformers in Table 5 on page 15 concludes that converting to a standard installation would improve reliability by 42% for this category of outage.

a) How many CSP transformers (out of the total population of 4500) experience a blown fuse each year?

b) How many are installed on poles of sufficient size to accommodate a standard transformer?

c) The reliability analysis is on a per unit basis. What effect on overall SAIDI will the CSP transformers program have?

RESPONSE:

a) Based on historical failure data from 2004 to present, there is an average of 43 CSP type transformer failures per year.

b) Pending detailed a designed review and confirmation, THESL estimates that 20 out of 80 CSP transformers will be replaceable without replacing the pole.

c) A CSP replacement program to replace 80 of the most heavily loaded CSP type transformers will have a projected SAIDI improvement of 0.07 minutes per customer based on historical failure data.

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INTERROGATORY 30:

Reference(s): **Exhibit D1, Tab 9, Schedule 1 Emerging Requirements – Downtown Contingency Project**

Page 3 contains an illustration of what is referred to as a "high impact low probability event" that the contingency project will address.

a) Please provide a list of these events by station for the past ten years including a description of the event, how many customers were interrupted and for how long.

b) What actions were taken by THESL in each of those events to eliminate the underlying vulnerability of the station to the causative factor?

c) In the areas of the City that employed an open loop design for the distribution system, how much load is typically transferable between stations? How does this compare with the amount of load transfer capability proposed in the downtown contingency project?

d) The 2010 cost for this downtown contingency plan is shown as $31.3 M with an additional $22 M required in 2011 to "complete the planned ties between stations". What other elements of the downtown contingency plan will remain to be done once the planned ties are completed?

RESPONSE:

a) The list of all downtown Station outages is provided in Table 1 below. These are strictly outages that affected the entire station and exclude all station bus outages and feeder outages.

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Table 1: List of downtown station outages

Station Name	Incident Date	Event Cause	Customers Interrupted	Outage Duration (minutes)
BASIN TS	22-Nov-02	Loss of Supply	1235	15
CARLAW TS	2-May-08	Loss of Supply	22185	9
CHARLES TS	14-Jun-00	Loss of Supply	3666	5
	11-Oct-01	Loss of Supply	3427	4
DUFFERIN TS	15-Jan-09	Adverse Environment	34308	1096
ESPLANADE TS	26-Jul-05	Loss of Supply	567	11
GERRARD TS	5-Jun-03	Loss of Supply	6606	9
	2-May-08	Loss of Supply	3304	11
MAIN TS	1-Dec-03	Loss of Supply	10021	157
STRACHAN TS	11-Jun-03	Bus, Switchgear/ Station Equipment / Defective Equipment	1703	73
TERAULEY TS	27-Jan-04	Loss of Supply	3555	88
	23-Jan-05	Contractor/ Other Utility (Gas, City, etc) / Foreign Interference	3556	648
WILTSHIRE TS	15-Jan-01	Loss of Supply	20974	2

b) The following actions were taken by THESL for each of the major events mentioned in part (a) under the downtown contingency project to eliminate the underlining vulnerability of the stations. There were four main outage causes which affected these stations. Remedial actions for each of these four causes along with the station they affected are given below:

1) Cause of outage: Adverse environment (broken deluge system)
Station Affected: Dufferin TS

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Outage duration: 1096 minutes

Short-Term Actions:

- Sump pump at the station was upgraded to match water ingress rate to speed up water removal
- Critical spare parts for breakers, switches, CTs etc., were re-stocked
- THESL employees were trained by Hydro One to shut down the Deluge system in times of emergency
- Camera monitoring system was installed within the station

Long-Term Actions:

- Implement strategy to have load transfer capability from Dufferin TS to the neighbouring stations at the feeder level
- Investigate possibility of adding second contingency plan to critical equipment in the station
- Perform feasibility study to replace existing switchgears with water resistant Gas Insulated Switchgear ("GIS")
- Carry out feasibility study to relocate equipment in the basement to above grade

2) Cause of outage: Foreign interference (station basement where the station service transformer is located was flooded due to broken city water main)
Station Affected: Terauley TS
Outage Duration: 648 minutes

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Actions taken by THESL:

- Large sump pumps were installed to drain water from the basement as quickly as possible to avoid flooding
- Mobile generator was purchased to supply power to essential station services whenever station service transformer fails.

3) Cause of outage: Loss of supply from Hydro One
Stations Affected: Basin TS, Carlaw TS, Charles TS, Esplanade TS, Gerrard TS, Main TS, Terauley TS and Wiltshire TS
Outage Duration (total): 311 minutes

Actions taken by THESL:

- Outage cause and remediation actions followed up with Hydro One
- Action plans to prevent similar events are continually reviewed with Hydro One on a monthly basis

4) Cause of outage: Defective Equipment
Station Affected: Strachan TS
Outage Duration: 73 minutes

Actions taken by THESL:

- Defective part of switchgear was replaced
- Plan to replace aging switchgear is underway

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c) Typically, load transferable between stations in an open loop design areas of the THESL distribution system depends upon the following factors:

1) Rating or firm-capacity of the tie-feeder
2) Load on the tie-feeder
3) Firm-capacity of the tie-feeder station bus

In the 27.6kV primary supply areas of the THESL distribution system, the firm-capacity of a feeder is about 30MVA, and normal maximum load on the feeder is about 20MVA. Therefore, typically 10MVA can be transferable between stations per feeder.

In the 13.8kV primary supply areas of the THESL downtown distribution system, the firm-capacity of a feeder is about 10MVA, and normal maximum load on the feeder is about 6MVA. Therefore, typically 4MVA can be transferable between stations per feeder.

In 2010, the first phase of downtown contingency project feeder tie points for 19 Dufferin Station feeders will be completed. After the completion of feeder tie points, Dufferin Station load (about 67MVA) can be transferable between neighbouring (Strachan, Bridgman, Wilshire and Cecil) stations.

The total estimated cost for the first phase of Dufferin Station contingency project is about $31.3 million. In 2011, the second phase of projects for Dufferin Station will be implemented and the estimated cost for that is about $22 million.

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d) Currently, there are 539 13.8kV feeders which are supplying the Toronto Hydro downtown area. In order to implement the contingency plan for all downtown area stations, 270 feeder tie points between the stations will be needed.

Downtown Dufferin station contingency plan needs 39 feeder tie points between the stations. In the first phase of contingency plan 19 feeder tie points will be completed in 2010. In the second phase of plan remaining 20 feeder tie points will be completed in 2011.

To complete the contingency plan for rest of downtown area station’s 461 feeders, further 231 feeder tie points between the stations will be needed.

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INTERROGATORY 31:

Reference(s): Exhibit D1, Tab 9, Schedule 1 Emerging Requirements – Worst Performing Feeder (WPF) Program

a) How long has THESL been using the WPF method to evaluate feeder performance?
b) What has been the annual budget for this program over the period that it has been in operation?
c) What activities has the budget been spent on?
d) On page 4 of the schedule, at line 4, reference is made to a "30 percent improvement in interruption frequency on FESI-7 feeders in 2008. To what does THESL attribute the improvement?

RESPONSE:

a) THESL started the Worst Performing Feeder ("WPF") program as a pilot project in fall of 2007 and commenced it as an initiative officially in 2008.

b) In 2007 and 2008 there was no separate budget for the WPF program. This work was funded through the corrective capital and operating expense budgets. In 2009, $1.3 million in the existing reactive capital budget was reserved for the WPF program.

c) The WPF allotment of the reactive capital budget ($1.3 million) has been spent on activities such as insulator, cable, surge-arrester and transformer replacement, the installation of sectionalizing switches and electronic faulted-circuit indicators and the installation of new fused-switches.

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d) THESL attributes this improvement to additional maintenance and capital projects carried out on these feeders through the feeder reliability (WPF) program. These efforts include activities such as tree pruning and storm hardening, supplementary cleaning and maintenance of switching devices. Equipment upgrades include the installation/replacement of lightning arresters, line insulators, and animal guards, underground primary cable and terminations.

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INTERROGATORY 32:

Reference(s): **Exhibit D1, Tab 9, Schedule 1 Emerging Requirements – Secondary Safety Upgrade**

This schedule describes work required to ensure safety of the secondary system feeding the Street lighting system.

a) Are the costs of this work included in the capital budget proposals for this application?

b) How does the secondary wire work proposed here differ from that proposed under Standardization?

c) Who presently owns the poles that are referred to in Table 1 on page 2?

RESPONSE:

a) Yes, the costs of upgrades to the secondary system feeding the street lighting system are included in the capital budget proposals for this application under Portfolio 16 as Emerging Capital Requirements.

b) The proposed secondary wiring work is intended to replace spot locations where wires and connections are under stress as identified during 2009 level III emergency. This is different from the proposed standardization where all obsolete standard installations system wide will be reconstructed to a uniform updated standard.

c) The ownership of the poles that are referred to in Table 1 on page 2 involves Toronto Hydro-Electric System Limited and THESI.