ONTARIO ENERGY BOARD

EB-2018-0165

Toronto Hydro-Electric System Limited

Application for Customer IRM 2020-2024

GTAA REFERENCE DOCUMENT
FOR ORAL HEARING

JUNE 27,2019

ONTARIO ENERGY BOARD

File No. EB-2018-0165
Exhibit No. K2.1
Date June 28, 2018 *jfs*

RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION INTERROGATORIES

INTERROGATORY 5:

Reference(s): Exhibit 4A, Tab 2, Schedule 8

Preamble:

For decades, Toronto housing service providers have arranged annual inspections of apartment-owned vaults housing Toronto Hydro high-voltage electric equipment. These inspections have been coordinated with Toronto Hydro for the mutual benefit of ensuring the sustainable protection of the Toronto Hydro equipment, safety of those attending and to strive for the uninterrupted continuity of electricity service to our tenants. These inspections, while difficult to coordinate, have been arranged with no compensation required from either party from the other in respect of the mutual benefit of this inspection. We have recently become aware that it is Toronto Hydro's proposal that housing providers should now pay for this visit.

a) Please provide Toronto Hydro's perspective on the purpose of the heat detector in the vault.

b) What is the typical response protocol to a signal from the heat detector (i.e., who receives the signal, are there graduated levels of response)?

c) How many responses have been made each of the last 4 years?

RESPONSE:

a) As part of vault owners' obligations to ensure their vault complies with all applicable laws, codes and regulations, vault owners must assess whether their vaults comply with applicable fire codes and regulations. Fire/smoke/heat detectors and alarm systems may be required by law in certain customer-owned transformer vaults. Whether a transformer vault is required by law to have a detector and alarm system is to be determined by the vault owner. If the vault owner determines a detector and alarm system is required, or that the vault is legally noncompliant in any other way, they must contact Toronto Hydro to prearrange access to the transformer vault. Further information regarding a customer's obligations to ensure compliance with applicable laws can be found both in Toronto Hydro's Conditions of Service and on its website.

b) In the event of a fire inside the transformer vault, a fire/smoke/heat detector and alarm system should operate such that the building's main fire alarm will activate. In the event that the building's main fire alarm is activated and indicates a fire in the transformer vault, the vault owner is to call 911 and advise Toronto Fire that a fire has been detected inside the transformer vault. Toronto Fire will respond and follow-up with Toronto Hydro directly. Further information regarding a customer's obligations to ensure compliance with applicable laws can be found both in Toronto Hydro's Conditions of Service and on its website.

c) Toronto Hydro only started to track the requested data in 2017. In 2017, Toronto Hydro received 174 calls. In 2018, Toronto Hydro received 111 calls.

Ontario

Fire Protection and Prevention Act, 1997
Loi de 1997 sur la prévention et la protection contre l'incendie

ONTARIO REGULATION 213/07

FIRE CODE

Consolidation Period: From March 14, 2019 to the e-Laws currency date.

Last amendment: 33/19.

Legislative History: [+]

This Regulation is made in English only.

TABLE OF CONTENTS

Combustion air

9.6.2.10. Where a **service room** is separated in accordance with Article 9.6.2.8., sufficient combustion air shall be brought directly from the outside for the proper combustion and safe operation of the **appliances**.

Refuse storage rooms

9.6.2.11. (1) **Refuse storage rooms** shall be

(a) separated from the remainder of the **building** by a **fire separation** having a **fire-resistance rating** not less than 1 h, and

(b) **sprinklered** to provide a minimum average density of 6.5 L/m^2 over the room area.

Vertical service spaces

9.6.2.12. (1) **Vertical service spaces** shall be separated from the remainder of the **building** by a **fire separation** having a **fire-resistance rating** not less than 45 min.

(2) Where openings in the **vertical service space**, including the top and bottom, are sealed with noncombustible materials having the same **fire-resistance rating** as the existing construction, the **vertical service space** is deemed to be in compliance with Sentence (1).

Refuse and linen chutes

9.6.2.13. (1) Each room into which a linen or refuse chute discharges shall be separated from the remainder of the **building** by a **fire separation** having a **fire-resistance rating** not less than 1 h.

(2) Automatic sprinklers shall be installed in each linen or refuse chute

(a) at the top,

(b) at alternate floor levels, and

(c) in the room or bin into which the chute discharges.

(3) An existing chute installation is deemed to be in compliance with Sentence (2) where

(a) the chute outlet in the discharge room is protected by an automatic, self-latching **closure** held open by a fusible link,

(b) the room into which the chute discharges is **sprinklered**, and

(c) at least one sprinkler head with a minimum discharge rate of 66 L/min is located at the top of the chute.

Transformer vaults

9.6.2.14. Transformer vaults to which the **Electricity Act, 1998** applies shall be separated from the remainder of the **building** by a **fire separation** having a **fire-resistance rating** not less than 2 h and shall be provided with **heat detectors** connected to the fire alarm system.

Storage garages

9.6.2.15. (1) A **storage garage** shall be separated from the remainder of the **building** by a **fire separation** having a **fire-resistance rating** not less than 1.5 h.

(2) Underground **storage garages** shall be **sprinklered**.

(2) Where the manual pull stations are relocated, alternate **approved** measures shall be used to maintain the level of life safety.

Repairs and alterations to fire alarm systems

6.3.1.8. Repair, replacement and alterations of fire alarm system components shall be in accordance with CAN/ULC-S524, “Standard for the Installation of Fire Alarm Systems”.

Subsection 6.3.2. Check, Inspect and Test

Obligation to ensure compliance

6.3.2.1. (1) The **owner** shall ensure that any person performing the annual **tests** or annual **inspections** required by this Subsection for fire alarm systems or performing the repairs, replacements or alterations of fire alarm systems referred to in Article 6.3.1.8. is in compliance with the requirements of

(a) Clause 1.2.1.2.(1)(a) of Division C, or

(b) Sentence 1.2.1.2.(2) of Division C.

(2) The **owner** shall ensure that any person performing the annual **tests** or annual **inspections** required by this Subsection for interconnected **smoke alarm** systems or performing the **tests** or maintenance for interconnected **smoke alarm** systems referred to in Article 6.3.2.6. is in compliance with the requirements of

(a) Clause 1.2.2.2.(1)(a) of Division C, or

(b) Sentence 1.2.2.2.(2) of Division C.

Fire alarm systems

6.3.2.2. (1) Except as provided in Sentence (2), a fire alarm system, with or without voice communication capability, shall be **inspected** and **tested** in conformance with CAN/ULC-S536, “Inspection and Testing of Fire Alarm Systems”.

(2) Despite Clause 5.7.4.1.6. of CAN/ULC-S536, “Inspection and Testing of Fire Alarm Systems”, a UL **listed smoke detector** sensitivity instrument may be used to conduct annual sensitivity **testing** of **smoke detectors**.

(3) A description of the fire alarm system as required in Clause 3.6 of CAN/ULC-S536, “Inspection and Testing of Fire Alarm Systems”, shall be kept current and maintained in the **building** at an **approved** location.

(4) A record of each device, component and circuit of the fire alarm system that is **inspected** and **tested** in accordance with Sentence (1) shall

(a) indicate whether the device, component or circuit is in proper working order, and

(b) be kept in accordance with Subsection 1.1.2.

(5) Where a fire alarm system is monitored to transmit a signal to the **fire department**, the **owner** shall record whether all signals from the **tests** conducted in Sentence (1), or other events, are received by the monitoring station, and records shall be kept in accordance with Subsection 1.1.2.

Central alarm and control facilities

6.3.2.3. The central alarm and control facility shall be **checked** daily for indication of trouble in the system.

Voice communication systems

RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION INTERROGATORIES

INTERROGATORY 1:

Reference(s): **Exhibit 4A, Tab 2, Schedule 8**
Toronto Hydro Conditions of Service

Preamble:

For decades, Toronto housing service providers have arranged annual inspections of apartment-owned vaults housing Toronto Hydro high-voltage electric equipment. These inspections have been coordinated with Toronto Hydro for the mutual benefit of ensuring the sustainable protection of the Toronto Hydro equipment, safety of those attending and to strive for the uninterrupted continuity of electricity service to our tenants. These inspections, while difficult to coordinate, have been arranged with no compensation required from either party from the other in respect of the mutual benefit of this inspection. We have recently become aware that it is Toronto Hydro's proposal that housing providers should now pay for this visit.

Please provide Section 1.7.5 from the Conditions of Service from:

a) The version that is currently in place for 2018 (Revision #17).

b) The version that included proposed changes that were open for comment until Dec. 13/18 (Revision #18)

c) Any subsequent revision that is or was posted for comment since Dec.13/18.

RESPONSE:

a) Please see below Revision #17 that was in effect until December 31, 2018:

1.7.5 Customer-Owned Equipment, Infrastructure, and Property

The Customer is responsible for providing, inspecting, maintaining, repairing and replacing, in a safe condition satisfactory to Toronto Hydro, all equipment and infrastructure that is owned by the Customer on private property or in the public road allowance for non-metered connections. Equipment and infrastructure includes but is not limited to transformers, cable, switches, poles, fences, gates, duct banks, conduits, cable chambers, cable pull rooms, transformer rooms, transformer vaults, transformer pads, tap boxes, handwells, service masts, and junction boxes.

The Customer is also responsible for maintaining its property in a condition that is safe and that does not inhibit the operation or threaten the integrity or reliability of equipment or infrastructure owned by the Customer or Toronto Hydro. The Customer's responsibility to maintain its property includes, but is not limited to, clearing vegetation, keeping storm drains clear and drainage systems fully functional, removing debris, maintaining operational and electrical clearances, and maintaining proper grading and surfaces.

The Customer shall inspect and maintain its equipment, infrastructure, and property at regular intervals. When access to the equipment, infrastructure, or property is under the control of Toronto Hydro (e.g. a transformer vault, a fenced off transformer), the Customer shall contact Toronto Hydro as per the instructions posted on Toronto Hydro's website to make appropriate arrangements (e.g. access, temporary disconnection) prior to undertaking any inspections, maintenance, repairs, or replacements.

For Customer-Owned vaults that contain Toronto Hydro equipment, Toronto Hydro will provide a Customer with one vault access every 12 months at no charge. This no charge service would be scheduled during Toronto Hydro's normal working hours, and appointment times are not necessarily guaranteed. Vault access at times other than during Toronto Hydro's normal working hours will be charged at cost. If Toronto Hydro staff attend to provide no charge vault access and the Customer is not present, Toronto Hydro will not provide an additional no charge vault access during the 12 month period and may charge the Customer for attending the site.

If the Customer does not inspect, maintain, repair, or replace its equipment, infrastructure, and property as required, Toronto Hydro may disconnect the supply of electricity to the Customer.

Notwithstanding the above, unless otherwise agreed to by the parties, subject to the Customer providing an easement to Toronto Hydro, Toronto Hydro will provide, maintain, repair and replace those civil infrastructure (such as poles, duct banks, conduits, cable chambers, cable pull rooms, transformer vaults, transformer pads, and switching vaults) that are required to house the primary distribution systems built along private streets that supply Customers of Multi-unit Residential developments (part of Class 3B). Effective November 15, 2004, Toronto Hydro will treat such infrastructure in the same way as those located in the public road allowance.

Where Toronto Hydro identifies, through an inspection or other activity, deficiencies relating to the equipment, infrastructure, or property owned by the Customer, such as deficiencies to walls, ceilings, floors, doors, vents, drains, electrical devices or other elements, Toronto Hydro may:

- notify the Customer of the deficiencies;
- provide a reasonable time for the Customer to correct the deficiencies; and
- if circumstances merit, request the Customer to correct the deficiency in a manner that brings the equipment, infrastructure, or property up to current standards even if the equipment, infrastructure, or property was designed, installed, or constructed to an older standard. (Examples of circumstances that may merit the application of a current standard include, but are not limited to, the existence of health or safety hazards, legal or regulatory requirements, and conditions that may impact the integrity, reliability, or operability of the distribution system or any equipment that supplies the Customer.)

If notified of deficiencies, or requested to correct deficiencies in a particular manner, the Customer shall correct the deficiencies and comply with any requests. If the Customer does not correct the deficiencies within the reasonable time, or if the corrections are not considered adequate by Toronto Hydro or an inspection authority, Toronto Hydro may disconnect the supply of electricity to the Customer or may correct the deficiencies at the Customer's expense, and Toronto Hydro shall not be liable to the Customer for any damages arising as a result of or in the course of disconnecting supply or correcting the deficiencies other than physical damage to facilities arising directly from entry on the Customer’s property. Toronto Hydro's policies and procedures with respect to the disconnection process are further described in these Conditions of Service.

Notwithstanding the above, the Customer shall be liable for any damages or losses sustained by Toronto Hydro, including damages to Toronto Hydro equipment and infrastructure that is installed either within the public road allowance or private property, resulting from:

- the operation or failure of Customer-Owned equipment,

- the Customer not adequately maintaining, repairing, or replacing their infrastructure,
- the Customer not adequately maintaining or repairing their property.

b) Please see below the version that included proposed changes that were open for comment until December 13, 2018 (Revision #18):

1.7.5 Customer-Owned Equipment, Infrastructure, and Property

The Customer is responsible for providing, inspecting, maintaining, repairing and replacing, in a safe condition satisfactory to Toronto Hydro, all equipment and infrastructure that is owned by the Customer on private property or in the public road allowance for non-metered connections. Equipment and infrastructure includes but is not limited to transformers, cable, switches, poles, fences, gates, duct banks, conduits, cable chambers, cable pull rooms, transformer rooms, transformer vaults, transformer pads, tap boxes, handwells, service masts, and junction boxes.

The Customer is also responsible for maintaining its property in a condition that is safe and that does not inhibit the operation or threaten the integrity or reliability of equipment or infrastructure owned by the Customer or Toronto Hydro. The Customer's responsibility to maintain its property includes, but is not limited to, clearing vegetation, keeping storm drains clear and drainage systems fully functional, removing debris, maintaining operational and electrical clearances, and maintaining proper grading and surfaces.

The Customer shall inspect and maintain its equipment, infrastructure, and property at regular intervals. When access to the equipment, infrastructure, or

property is under the control of Toronto Hydro (e.g. a transformer vault, a fenced off transformer), the Customer shall contact Toronto Hydro as per the instructions posted on Toronto Hydro's website to make appropriate arrangements (e.g. access, temporary disconnection) prior to undertaking any inspections, maintenance, repairs, or replacements.

For Customer-Owned vaults that contain Toronto Hydro equipment, Customers requiring vault access shall pay a fair and reasonable charge based on cost recovery principles for a Toronto Hydro Person-in-Attendance. If the Customer is not present at the scheduled time, Toronto Hydro shall charge the Customer for the attendance by the Person-in-Attendance.

If the Customer does not inspect, maintain, repair, or replace its equipment, infrastructure, and property as required, Toronto Hydro may disconnect the supply of electricity to the Customer.

Notwithstanding the above, unless otherwise agreed to by the parties, subject to the Customer providing an easement to Toronto Hydro, Toronto Hydro will provide, maintain, repair and replace those civil infrastructure (such as poles, duct banks, conduits, cable chambers, cable pull rooms, transformer vaults, transformer pads, and switching vaults) that are required to house the primary distribution systems built along private streets that supply Customers of Multi-unit Residential developments (part of Class 3B). Effective November 15, 2004, Toronto Hydro will treat such infrastructure in the same way as those located in the public road allowance.

Where Toronto Hydro identifies, through an inspection or other activity, deficiencies relating to the equipment, infrastructure, or property owned by the

Customer, such as deficiencies to walls, ceilings, floors, doors, vents, drains, electrical devices or other elements, Toronto Hydro may:

- notify the Customer of the deficiencies;
- provide a reasonable time for the Customer to correct the deficiencies; and
- if circumstances merit, request the Customer to correct the deficiency in a manner that brings the equipment, infrastructure, or property up to current standards even if the equipment, infrastructure, or property was designed, installed, or constructed to an older standard. (Examples of circumstances that may merit the application of a current standard include, but are not limited to, the existence of health or safety hazards, legal or regulatory requirements, and conditions that may impact the integrity, reliability, or operability of the distribution system or any equipment that supplies the Customer.)

If notified of deficiencies, or requested to correct deficiencies in a particular manner, the Customer shall correct the deficiencies and comply with any requests. If the Customer does not correct the deficiencies within the reasonable time, or if the corrections are not considered adequate by Toronto Hydro or an inspection authority, Toronto Hydro may disconnect the supply of electricity to the Customer or may correct the deficiencies at the Customer's expense, and Toronto Hydro shall not be liable to the Customer for any damages arising as a result of or in the course of disconnecting supply or correcting the deficiencies other than physical damage to facilities arising directly from entry on the Customer’s property. Toronto Hydro's policies and procedures with respect to the disconnection process are further described in these Conditions of Service.

Notwithstanding the above, the Customer shall be liable for any damages or losses sustained by Toronto Hydro, including damages to Toronto Hydro equipment and

infrastructure that is installed either within the public road allowance or private property, resulting from:

- the operation or failure of Customer-Owned equipment,
- the Customer not adequately maintaining, repairing, or replacing their infrastructure,
- the Customer not adequately maintaining or repairing their property.

c) Please see below Revision #18.1 that is currently posted on Toronto Hydro's website for public comment and will come in effect on February 1, 2019:

1.7.5 Customer-Owned Equipment, Infrastructure, and Property

The Customer is responsible for providing, inspecting, maintaining, repairing and replacing, in a safe condition satisfactory to Toronto Hydro, all equipment and infrastructure that is owned by the Customer on private property or in the public road allowance for non-metered connections. Equipment and infrastructure includes but is not limited to transformers, cable, switches, poles, fences, gates, duct banks, conduits, cable chambers, cable pull rooms, transformer rooms, transformer vaults, transformer pads, tap boxes, handwells, service masts, and junction boxes.

The Customer is also responsible for maintaining its property in a condition that is safe and that does not inhibit the operation or threaten the integrity or reliability of equipment or infrastructure owned by the Customer or Toronto Hydro. The Customer's responsibility to maintain its property includes, but is not limited to, clearing vegetation, keeping storm drains clear and drainage systems fully functional, removing debris, maintaining operational and electrical clearances, and maintaining proper grading and surfaces.

The Customer shall inspect and maintain its equipment, infrastructure, and property at regular intervals. When access to the equipment, infrastructure, or property is under the control of Toronto Hydro (e.g. a transformer vault, a fenced off transformer), the Customer shall contact Toronto Hydro as per the instructions posted on Toronto Hydro's website to make appropriate arrangements (e.g. access, temporary disconnection) prior to undertaking any inspections, maintenance, repairs, or replacements.

For Customer-Owned vaults that contain Toronto Hydro equipment, Customers requiring vault access shall pay a fair and reasonable charge based on cost recovery principles for a Toronto Hydro Person-in-Attendance. Where a Customer requires vault access solely for the purpose of completing any fire equipment inspections required by applicable law, Toronto Hydro will provide one Person-in-Attendance for a maximum of two hours once every 12 months at no charge to the Customer. If the Customer is not present at the scheduled time, Toronto Hydro shall charge the Customer for the attendance by the Person-in-Attendance.

If the Customer does not inspect, maintain, repair, or replace its equipment, infrastructure, and property as required, Toronto Hydro may disconnect the supply of electricity to the Customer.

Notwithstanding the above, unless otherwise agreed to by the parties, subject to the Customer providing an easement to Toronto Hydro, Toronto Hydro will provide, maintain, repair and replace those civil infrastructure (such as poles, duct banks, conduits, cable chambers, cable pull rooms, transformer vaults, transformer pads, and switching vaults) that are required to house the primary distribution systems built along private streets that supply Customers of Multi-unit Residential

developments (part of Class 3B). Effective November 15, 2004, Toronto Hydro will treat such infrastructure in the same way as those located in the public road allowance.

Where Toronto Hydro identifies, through an inspection or other activity, deficiencies relating to the equipment, infrastructure, or property owned by the Customer, such as deficiencies to walls, ceilings, floors, doors, vents, drains, electrical devices or other elements, Toronto Hydro may:

- notify the Customer of the deficiencies;
- provide a reasonable time for the Customer to correct the deficiencies; and
- if circumstances merit, request the Customer to correct the deficiency in a manner that brings the equipment, infrastructure, or property up to current standards even if the equipment, infrastructure, or property was designed, installed, or constructed to an older standard. (Examples of circumstances that may merit the application of a current standard include, but are not limited to, the existence of health or safety hazards, legal or regulatory requirements, and conditions that may impact the integrity, reliability, or operability of the distribution system or any equipment that supplies the Customer.)

If notified of deficiencies, or requested to correct deficiencies in a particular manner, the Customer shall correct the deficiencies and comply with any requests. If the Customer does not correct the deficiencies within the reasonable time, or if the corrections are not considered adequate by Toronto Hydro or an inspection authority, Toronto Hydro may disconnect the supply of electricity to the Customer or may correct the deficiencies at the Customer's expense, and Toronto Hydro shall not be liable to the Customer for any damages arising as a result of or in the course of disconnecting supply or correcting the deficiencies other than physical damage to

facilities arising directly from entry on the Customer's property. Toronto Hydro's policies and procedures with respect to the disconnection process are further described in these Conditions of Service.

Notwithstanding the above, the Customer shall be liable for any damages or losses sustained by Toronto Hydro, including damages to Toronto Hydro equipment and infrastructure that is installed either within the public road allowance or private property, resulting from:

- the operation or failure of Customer-Owned equipment,
- the Customer not adequately maintaining, repairing, or replacing their infrastructure,
- the Customer not adequately maintaining or repairing their property.

- Customer Care
- Billing
- Rates
- Metering
- Electrical Safety
- Service Connections & Construction
- Attachments & Permits
- Conditions of Service

- Residential Conservation
- Business Conservation
- Conservation Tips for Business
- Feed In Tariff Program
- Reports
- Electric Vehicles
- Energy Reporting and Benchmarking

- Report an Outage
- About Outages
- Be Prepared
- During An Outage
- How We Restore Power
- Outages At Work
- Resources

- Neighbourhood Investments
- Project Map
- Ensuring Reliability
- Grid 101

HomeFor BusinessElectrical SafetyVault Access Legislation
Customer Care
Billing
Rates
Metering
Electrical Safety
Contact Voltage
Vault Owner Resources
Safety On The Jobsite
Service Connections & Construction
Attachments & Permits
Conditions of Service

Home > For Business > Electrical Safety > Vault Access Legislation

Vault Access Legislation and Codes

Vault Owners' Compliance with Applicable Legislation and Codes

including Fire

Customers who own the transformer vault located in their buildings are responsible for ensuring their vault complies with all applicable laws and regulations in addition to complying with Toronto Hydro-Electric System Limited's ("Toronto Hydro") Conditions of Service.

Toronto Hydro's Conditions of Service, which apply to everyone who receives electricity from Toronto Hydro, state in part that:

3.4.1 Electrical Requirements

Where a primary service is provided to a Customer-owned substation, the Customer shall install and maintain such equipment in accordance with all applicable laws, codes, regulations, and Toronto Hydro's Customer Owned Substation requirements for high voltage installations. Toronto Hydro will provide planning details upon application for service.

Customer owned substations are a collection of transformers and switchgear located in a suitable room or enclosure owned and maintained by the Customer, and supplied at primary voltage: i.e. the Supply Voltage is greater than 750 volts.

Additionally, the "Requirements for the Design and Construction of Customer-Owned Structures", an appendix to the Conditions of Service, Section 6 – Reference #5, states, in part, that customers must comply with the following codes as applicable:

a. Canadian National Electrical Code C22.1

b. National Building Code of Canada

c. National Fire Code of Canada

d. National Plumbing Code of Canada

e. Occupational Health & Safety Act and Regulation for Construction Project 1990 and Ontario Regulations 213/91

f. Ontario Building Code

g. Ontario Electrical Safety Code

h. Ontario Highway Bridge Design Code, CAN/CSA-S6-06

i. Ontario Fire Code

As part of vault owners' obligations to ensure their vault complies with all applicable laws, codes and regulations, vault owners must assess whether their vaults comply with applicable fire codes and regulations. Fire/smoke/heat detectors and alarm systems may be required by law in certain customer owned transformer vaults. Whether or not a transformer vault is required by law to have

a detector and alarm system is to be determined by the vault owner. If the vault owner determines a detector and alarm system is required, or that the vault is legally noncompliant in any other way, they must contact Toronto Hydro to prearrange access to the transformer vault at **416-542-3476.**

Toronto Hydro will work with vault owners to ensure vault access is obtained from qualified Toronto Hydro personnel thereby promoting public safety and preventing contact with the high voltage electrical equipment contained within the transformer vault.

In the event of a fire inside the transformer vault, a fire/smoke/heat detector and alarm system should operate such that the building's main fire alarm will activate.

In the event that the building's main fire alarm is activated and indicates a fire in the transformer vault, the vault owner is to call 911 and advise Toronto Fire that a fire has been detected inside the transformer vault. Toronto Fire will respond and follow-up with Toronto Hydro directly.

From time to time, Toronto Hydro may contact customers who own underground transformer vaults containing Toronto Hydro electrical equipment to remind them of Toronto Hydro's procedure for providing access to transformer vaults with a view to assisting vault owners in determining if their vaults are legally compliant.

For example, vault access would be required:

1) if the vault owner's alarm technician wants to take an initial look inside the vault to determine if the vault is fire code compliant or if a detector and alarm system is required, to determine the best location to place the detector and alarm system;

2) if the vault owner's alarm technician is ready to perform the installation of the detector and alarm system;

3) if a power interruption is required to allow the vault owner's alarm technician to perform his/her work safely and to restore power after the work has been completed; or

4) if the vault owner must perform annual fire alarm inspection as required by law.

Toronto Hydro will provide transformer vault entry once per year, per vault location at no charge to the vault owner. If further entry into the transformer vault is required and/or an isolation of the electrical equipment inside the transformer vault, only the costs incurred by Toronto Hydro in accommodating the vault owner's request will be charged to the vault owner.

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23

- 

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404 - Page not found

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TORONTO

STAFF REPORT
ACTION REPORT

Hydro Vaults and Heat Detectors

Date:	December 14, 2015
To:	Executive Committee
From:	Chief Corporate Officer
Wards:	All Wards
Reference Number:	P:\2015\Internal Services\FAC\Ec16004fac (AFS 21955)

SUMMARY

This report provides the Executive Committee with additional information concerning the following:

1. The installation of heat detectors in vaults containing Toronto Hydro-Electric System Limited's ("Toronto Hydro") equipment ("Hydro Vaults") located within apartment buildings in Toronto.

2. The pro-active "Cooperative Inspection Program" of Toronto Fire Services and Toronto Hydro for Hydro Vaults located within privately owned buildings in Toronto, including a proposed plan and budget for accelerating the critical safety prevention work.

3. Toronto Fire Services' inspection of Hydro Vaults located within City Owned properties and a recommended schedule for completion of these inspections.

4. A summary of significantly disruptive hydro transformer fires in Toronto, and their causes.

This report has been written in consultation with Ben LaPianta, Executive Vice President Toronto Hydro-Electric System Limited.

RECOMMENDATION

The Chief Corporate Officer recommends that:

1. The Executive Committee receive this report for information.

Financial Impact

There is no financial impact resulting from this staff report.

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on October 20, 2015, the Executive Committee referred the item to the City Manager to report back to Executive Committee with a more fulsome answer to Council's request. This report is available on line at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX9.4

At its meeting on June 10, 2015, City Council requested the City Manager, in consultation with Toronto Hydro, to provide a status report to the Executive Committee on the implementation of the installation of heat sensors in Toronto Hydro transformers in apartment buildings in Toronto. This report is available on line at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX6.4

At its meeting on September 17, 2015, the Government Management Committee:
1. Requested the Fire Chief and General Manager, Fire Services, in consultation with the Executive Director, Municipal Licensing and Standards, and the Chief Executive Officer, Toronto Hydro, to report to the November 9, 2015 meeting of the Government Management Committee with a review of the pro-active "Cooperative Inspection Program" for inspections of hydro vaults by Toronto Fire Services, Municipal Licensing and Standards, with Toronto Hydro, and a proposed plan and budget for accelerating this critical safety prevention work.
2. Requested the General Manager, Facilities Management to report to the November 9, 2015 Government Management Committee meeting on the joint inspections by Toronto Hydro and Toronto Fire of hydro vaults owned by the City of Toronto and a recommended scheduled for completion of these inspections.
3. Requested the Chief Corporate Officer, in consultation with Toronto Hydro, to review and report to the November 9, 2015 meeting of Government Management Committee with a summary of significantly disruptive hydro transformer fires in Toronto, and their causes.

This report is available on line at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.GM6.7

COMMENTS

1. Implementation of the Installation of Heat Detectors – Apartment Buildings

Nature of the Program
In 2011, Toronto Hydro-Electric System Limited ("Toronto Hydro") and Toronto Fire Services ("TFS") entered into a cooperative inspection program agreement to ensure that TFS , is provided access to of Hydro Vaults located within privately owned buildings in Toronto to ensure compliance with the *Fire Prevention Protection Act,1997* ("FPPA") or the *Fire Code*, as applicable (the "Cooperative Inspection Program"). Where a Hydro Vault is out of compliance with the FPPA or the *Fire Code*, TFS may take appropriate actions to have the property owner bring it into compliance.

Logistics of the Program
Toronto Hydro participates in the Cooperative Inspection Program by identifying, and providing TFS with access to, Hydro Vaults located within privately owned buildings within Toronto.

In practice, Toronto Hydro provides TFS with a person-in-attendance ("PIA") to provide TFS with access to between four (4) to six (6) Hydro Vaults located within privately owned buildings per week. TFS selects the area of the city for the vault inspections and Toronto Hydro provides the specific location of Hydro Vaults within this area it has selected for inspection. A TFS representative, accompanied by the PIA, is given access to each Hydro Vault in order to carry out the inspection. The property owners at each Hydro Vault location are notified in advance of the inspection to facilitate ease of access. Upon completion of the inspection, where there is non-compliance with the FPPA or the *Fire Code*, TFS may issue an order obligating the property owner to remedy the violation.

If steps are required to remedy non-compliance, the property owner will contact Toronto Hydro directly for access to undertake work in the Hydro Vault. Under its standard Conditions of Service, Toronto Hydro provides all property owners' opportunity to access the interior of the Hydro Vault once per year without incurring a fee from Toronto Hydro. Under Toronto Hydro's Conditions of Service Property owners are charged Toronto Hydro's actual cost of providing vault access, for any additional visits by the property owners.

Current Status
Approximately 249 Hydro Vaults within privately owned buildings have been inspected (as of June 2015) by TFS pursuant to the Cooperative Inspection Program. The Cooperative Inspection Program continues to operate through 2015 and beyond.

2. Cooperative Inspection Program

In 2011, Toronto Hydro and TFS negotiated a resolution to charges laid under the FPPA against Toronto Hydro. Under the terms of the Minutes of Settlement Toronto Hydro entered into an inspection program Toronto Hydro provided TFS with co-operative access to Hydro Vaults in privately owned buildings (the "Cooperative Inspection Program"). The Cooperative Inspection Program continues to operate through 2015 as agreed to in the Minutes of Settlement.

Under the Cooperative Inspection Program, where a Hydro Vault in a privately owned building is out of compliance with the FPPA or *Fire Code*, TFS will take appropriate actions to have the property owner bring it into compliance with same. Toronto Hydro participates in the Cooperative Inspection Program by revealing to TFS the location of, and providing TFS with access to, certain Hydro Vaults located within privately owned buildings within the City of Toronto. In practice, Toronto Hydro provides TFS with a person-in-attendance ("PIA") to provide TFS with access to between four (4) to six (6) Hydro Vaults located within privately owned buildings per week. TFS selects the area of the city for the vault inspections and Toronto Hydro provides the specific location of Hydro Vaults within this area it has selected for inspection. A TFS representative, accompanied by the PIA, is given access to each selected Hydro Vault in order to carry out the inspection. The property owners at each Hydro Vault location are notified in advance of the inspection to facilitate ease of access. Upon completion of the inspection, where there is non-compliance with the *Fire Code*, TFS will take appropriate actions through the *FPPA* to have the property owner bring the Hydro Vault into compliance.

Records indicate approximately 249 Hydro Vaults within privately owned buildings have been inspected (as of June 2015) pursuant to the Cooperative Inspection Program; approximately 28 of the vaults did not contain a heat detector. Toronto Hydro reports there are approximately 4082 Hydro Vaults located in privately owned buildings within the City of Toronto and currently performs approximately 1500 inspections of Hydro Vaults located in privately owned buildings each year. Toronto Hydro reports this program requires nine (9) full time equivalents (FTEs). At the current rate of access which Toronto Hydro is willing to provide to TFS pursuant to the negotiated terms of settlement referenced above, the inspection of the 4082 Hydro Vaults in privately owned buildings would take approximately thirteen (13) years to complete.

Additional Inspection Activities:
In addition to, and in no way covered by the terms of the Cooperative Inspection Program mentioned above, Toronto Hydro, has now agreed to notify TFS of situations where, in the course of their own internal inspections for Toronto Hydro purposes, Toronto Hydro Staff are unable to establish visual confirmation of a heat detector within a Hydro Vault located within a privately owned building. Where TFS receives a complaint from Toronto Hydro, TFS will conduct an assessment of the complaint as required under *O.Reg. 365/13*, and where appropriate conduct a fire safety inspection pursuant to the FPPA. TFS will obtain access to the Hydro Vaults for purposes of conducting an inspection as permitted by the FPPA. Upon inspection, where TFS determines that the

Hydro Vault is not in compliance with the FPPA and or Fire Code, TFS will take the appropriate actions to ensure that any and all parties responsible for the Hydro Vault to bring the Hydro Vault into compliance with the appropriate legal requirements. TFS believes this information provided by Toronto Hydro concerning the location and status of Hydro Vaults, in addition to the information provided under the Cooperative Inspection Program, will allow TFS staff to more effectively utilize Fire Inspectors to more efficiently address the fire safety concerns with respect to Hydro Vaults.

3. Inspections Hydro Vaults Located within City Owned Properties:

Facilities Management has compiled a list of the 29 Hydro Vaults located within City-owned buildings (see below) and are working with Toronto Hydro to develop a schedule to undertake to allow City Staff access, including Toronto Fire Services Staff to conduct a visual inspection of each of these Hydro Vaults by mid- 2016.

The inspections will address all aspects of the Hydro Vaults, including but not limited to, architectural, structural, electrical, mechanical, and any other deficiencies.

Based on the results of these inspections, Facilities Management will establish and lead a state of good repair program to rectify all the deficiencies. Facilities Management and Toronto Hydro will continuously collaborate and coordinate throughout the inspection and repair phases.

List of City-Owned Buildings containing Interior Hydro Vaults, in Order of Street Address

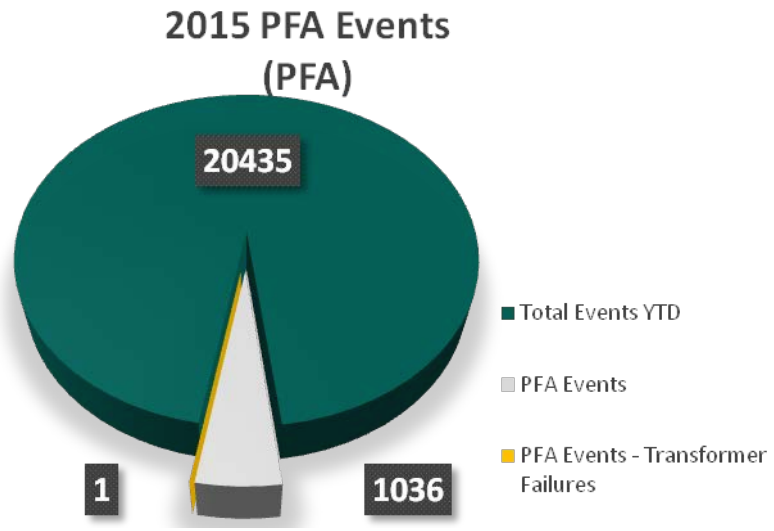
Address	Building Name	Responsible City Division or City Board	Ward #
1515 Albion Rd.	Albion Public Library	Toronto Public Library	01
140 Antibes Dr.	Antibes Community Centre & Indoor Pool	Parks, Forestry & Recreation	10
700 Arrow Rd.	Arrow Road Bus Garage	Toronto Transit Commission	07
3230 Bayview Ave	Bayview Arena	Parks, Forestry & Recreation	24
155 Bonis Ave	Agincourt Public Library	Toronto Public Library	40
255 Bremner Blvd	Roundhouse Complex - Don Train Station	Economic Development & Culture	20
255 Bremner Blvd	Roundhouse Complex - Switch Cabin D	Economic Development & Culture	20
89 Church Ave	Mitchell Field Community Centre & Arena	Parks, Forestry & Recreation	23
205 Cummer Ave	Cummer Lodge	Long-Term Care Homes & Services	24
30 Dee Ave	Dee Avenue Laboratory	Toronto Water	11

35 Fairview Mall Dr.	Fairview Public Library	Toronto Public Library	33
306 Finch Ave E	Carefree Lodge	Long-Term Care Homes & Services	24
1026 Finch Ave W	Finch Yard – Bldg. D	Toronto Water	08
319 George St	O'Neil Seaton House	Shelter, Support & Housing Administration	27
165 Grenoble Dr.	Angela James Arena	Parks, Forestry & Recreation	26
50 Ingram Dr.	Ingram Transfer Station	Solid Waste Management	12
1806 Islington Ave	Richview Public Library	Toronto Public Library	04
2233 Kipling Ave	Kipling Acres & Kipling Child Care Centre (Phase 1)	Long-Term Care Homes & Services	02
3197 Lake Shore Blvd W	Lakeshore Lodge	Long-Term Care Homes & Services	06
2920 Lawrence Ave E	Bendale Acres	Long-Term Care Homes & Services	38
5 Leaside Park Dr.	Leaside Park - Outdoor Pool Service Bldg	Parks, Forestry & Recreation	26
9 Neilson Rd	Seven Oaks Senior Home & Centenary Child Care Centre	Long-Term Care Homes & Services	43
160 Neptune Dr.	Baycrest Arena	Parks, Forestry & Recreation	15
8270 Sheppard Ave E	Winter Maintenance Depot & Patrol Yard	Transportation Services	42
60 Tiffield Rd	Toronto Water Centre – Bldg. C	Toronto Water	41
545 Van Horne Ave	Pleasantview Arena & Community Centre	Parks, Forestry & Recreation	33
5100 Yonge St	Douglas Snow Aquatic Centre & Community Centre	Parks, Forestry & Recreation	23
5100 Yonge St	Mel Lastman Square - Outdoor Rink Service Bldg	Parks, Forestry & Recreation	23
5120 Yonge St	North York Central Library	Toronto Public Library	23

4. Hydro Transformer Fires:

As of September 2015, Toronto Hydro has responded to a total of 20,435 events of which Police, Fire and Ambulance (PFA) events total of 1036 events, or 5 % of the total year to date volume. Of the 1036 PFA events received, only 1 was attributed to a building transformer vault. Upon arrival, TFS did not find an active fire in progress but only smoke arising from overheated polyethylene cable insulation.

This equates to 0.09% of the total PFA events YTD, or 0.004% of the total for all events YTD.



There is no evidence of a systemic distribution system failure mode that is causing fire in electric building vaults.

CONCLUSION

This information has been provided to the Executive Committee in response to the requests made by the Government Management Committee at its meeting held on September 17, 2015 and City Council at its meeting held on June 10, 2015. It is recommended that the Executive Committee receive this report for information.

CONTACT

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General Manager
Facilities Management
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Ssharma5@toronto.ca

Jim Jessop, Deputy Chief
Fire Prev. & Public Education
Toronto Fire Services
Tel: 416-338-9052
Jjessop2@toronto.ca

SIGNATURE

Josie Scioli
Chief Corporate Officer

TORONTO

STAFF REPORT ACTION REPORT

City Hall Hydro Vault Fire

Date:	August 27, 2015
To:	Government Management Committee
From:	Chief Corporate Officer
Wards:	All Wards
Reference Number:	P:\2015\Internal Services\FAC\Gm15020fac (AFS 21337)

SUMMARY

The purpose of this report is to provide an update on the City Hall Hydro Vault fire of September 25, 2014.

RECOMMENDATIONS

The Chief Corporate Officer recommends that:

1. The Government Management Committee receive this report for information.

Financial Impact

The City's damages total $752,783.81. In consideration of all the circumstances of this loss, agreement was reached between the City, Toronto Hydro and the respective insurance companies involved to apportion payment of all expenses.

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on May 11, 2015, the Government Management Committee requested the Chief Corporate Officer, to consult with Toronto Hydro, and review and report to the August 31, 2015 Government Management Committee meeting on:

a) Findings related to the cause, costs and repairs undertaken as a result of the electrical explosion and fire in the basement of City Hall on September 25, 2014.
b) The inventory of City of Toronto buildings with interior hydro vaults, including agencies, the standard program of maintenance, roles and responsibilities of the City and Toronto Hydro with respect to this maintenance.
c) A summary of other known hydro vault explosions in Toronto, and their causes.

This report is available on line at:
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.GM4.16

COMMENTS

a) i) Cause of the Fire:

On September 25, 2014, a crew employed by Toronto Hydro was conducting a planned replacement of distribution equipment as part of the annual 2015 Electric Distribution Capital Work Program within a City of Toronto owned vault located at 100 Queen Street West.

The crew was in the process of conducting the routine removal of secondary cables from the customer owned secondary equipment in preparation for replacement of the vault transformers. During this removal process one of the secondary cables came into contact with an adjacent piece of customer owned secondary equipment causing a short circuit. An electric arc ensued which ignited the fire. The fire propagated through a portion of the customer owned equipment. There was no explosion, and the crew did not sustain any injuries.

a) ii) Repairs and Cost

City of Toronto Repairs:
Repairs undertaken by the City of Toronto included emergency response; electrical, mechanical, fire safety and environmental engineers were brought in to respond as quickly as possible to restore City Hall. The sprinkler system was activated which resulted in water damage to areas of the basement. Smoke from the fire entered the permit offices on the first floor and councillor's offices on the second floor. Contractors were brought in to clean and sanitize affected areas.

These costs have been submitted through the City's insurance program for coverage. Two of the City's insurance policies respond to this loss. The property policy (FM Global) responds to clean up costs and building repairs. This policy is subject to a $5M deductible therefore the full amount was funded from the City's Insurance Reserve Fund. The boiler and machinery policy (RSA Insurance) pays for equipment breakdown and resultant damage subject to a $200,000 deductible.

The City's damages total $752,783.81. Apportionment between the property and boiler and machinery policies is still being negotiated with RSA Insurance.

In consideration of all the circumstances of this loss, agreement was reached between the City, Toronto Hydro and the respective insurance companies involved to apportion payment of all expenses.

Toronto Hydro Repairs:

The repairs that were undertaken by Toronto Hydro and which arose specifically from the incident were limited to procuring portable generation to supply City Hall during the remediation work and to the clean-up and washing of the distribution equipment/structure. The post incident repair work included the replacement of the transformers and associated distribution equipment. However, the cost of the transformers and associated distribution equipment is not included in the cost of the repairs arising from the incident because the equipment was scheduled for an end of life replacement and was in fact, at the time of the incident, in the process of undergoing the planned end of life replacement.

The cost of the repairs, including generator rental, installation and demobilization, fuel and labour, paid for by Toronto Hydro was approximately $1.12 million.

b) i) <u>The inventory of City of Toronto buildings with interior hydro vaults, including agencies:</u>

There are approximately 94 buildings City of Toronto owned buildings with interior hydro vaults.

ii) <u>Standard Program of Maintenance:</u>

Toronto Hydro inspects and maintains its distribution assets in accordance with a recognized industry leading best practice methodology called Reliability Centered Maintenance II (RCM II). These programs have been in place since 2003. Every interior building vault is inspected and maintained at least once every three (3) years depending on the electrical capacity and the nature of the equipment in the vault. Other vaults are inspected as frequently as every six (6) months.

Toronto Hydro’s distribution asset registry contains 4,727 interior building vaults. Included in this population are those vaults that service City of Toronto installations. As of June 30, 2015, 4,687 or 99.2 % of vault maintenances have been completed pursuant to the RCM program. The remaining 40 vaults have been rescheduled for a variety of operational reasons and do not include City of Toronto locations i.e. 100% of the City of Toronto interior building vault locations have been maintained as per the prescribed Reliability Centered Maintenance Program.

iii) Roles & Responsibilities:

Pursuant to the Electric Distribution System Code, Appendix C – Minimum Inspection Requirements, Toronto Hydro maintenance programs are limited to the inspection and repair of electric distribution assets *owned and operated* by Toronto Hydro. For example, typical vault maintenance activities will include, but are not limited to, a variety of tasks such as visual inspection of the transformer, primary switchgear, cables, terminations and auxiliary systems, and telemetry gauges such as oil and winding temperature of the transformer. Inspection observations can exceed 110 discrete observations per maintenance inspection. Toronto Hydro *does not* inspect or maintain electric infrastructure that is not owned and operated by Toronto Hydro.

In regards to the civil infrastructure of the building vault itself, Toronto Hydro does inspect customer owned civil infrastructure for deficiencies and will provide a Customer Action Form i.e. CAF (formerly known as a Customer Advisory Form) to the building owner if a defect of vault civil infrastructure is discovered. Notwithstanding, the obligation to maintain and repair customer owned civil infrastructure and ensure compliance with applicable regulations such as the Ontario Building Code and the Distribution Service Code, is exclusively that of the building/property owner.

City Hall; 100 Queen Street West:

The City Hall interior building vault located at 100 Queen Street West (vault #4518) was inspected prior to the September 2014 incident on April 7, May 16, and July 14, 2014, and subsequently after the incident of September 2014, on April 9, 2015. No material defects were detected or observed in either inspection.

c) Summary of other Known Hydro Vault Explosions in Toronto, and their Causes:

In a dense urban utility such as Toronto Hydro, the nature of electric distribution equipment failures can range from minor non-detectable failures to major system disruptive failures such as transformer and switchgear equipment failures. In fact, on average the Toronto Hydro distribution system experiences more than 1050 equipment failures on an annual basis.

On July 20, 2008, an explosion did occur at 2 Secord Avenue in the former municipality of East York (now the City Of Toronto). Subsequent inspection of one of the transformers revealed that it had sustained an internal failure causing an electric arc within the transformer windings eventually resulting in a catastrophic rupture of the transformer tank.

An explosion is defined as a violent expansion in which energy is transmitted outward as a shock wave and ultimately results in the catastrophic rupture the transformer tank.

Notwithstanding the July 20, 2008 incident at 2 Secord Avenue, Toronto Hydro is unaware of any other material explosions within customer owned vaults.

CONCLUSION

The Government Management Committee receive this report for information.

CONTACT

Sunil Sharma, General Manager
Facilities Management
Tel: 416-397-5270
Ssharma5@toronto.ca

SIGNATURE

_____

Josie Scioli
Chief Corporate Officer

Of the 5,380 customer-owned locations, approximately 4,645 contain Toronto Hydro-owned equipment, including over 12,000 transformers. For maintenance purposes, these 5,380 locations are divided into two subsets based on customer load requirements: (i) Customer Building Vaults, which possess transformation capacity less than 2,000 kVA; and (ii) Customer Substations, which have transformation capacity of 2,000 kVA or above.

Toronto Hydro maintains Customer Building Vaults on a three-year cycle, in compliance with the OEB's Minimum Inspection Requirements (Appendix C of the DSC). Maintenance of Customer Building Vaults includes a visual inspection of the vault and equipment, thermographic scans and partial discharge testing of all electrical equipment and connections to detect thermal anomalies and corona, and general cleaning to reduce contamination build-up and electrical tracking. Deficiencies that are noted during inspections are either addressed immediately or subsequently addressed through corrective maintenance. The condition of the customer's civil structure is also assessed and any identified deficiencies are communicated to the customer for remediation.

Customer Substations are inspected annually and maintained every four years. Inspections ensure that ventilation, access, and drainage systems are operating as required and that equipment is not leaking, defective, or corroded. Maintenance includes visual inspections, thermographic scans, functional tests, oil testing, and general cleaning. Toronto Hydro maintains a total of 411 Customer Substations.

Through Customer Location Maintenance, Toronto Hydro identifies deficiencies in electrical equipment and verifies the integrity and security of the structures that house

RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION INTERROGATORIES

INTERROGATORY 6:

Reference(s): Exhibit 4A, Tab 2, Schedule 8

Preamble:

For decades, Toronto housing service providers have arranged annual inspections of apartment-owned vaults housing Toronto Hydro high-voltage electric equipment. These inspections have been coordinated with Toronto Hydro for the mutual benefit of ensuring the sustainable protection of the Toronto Hydro equipment, safety of those attending and to strive for the uninterrupted continuity of electricity service to our tenants. These inspections, while difficult to coordinate, have been arranged with no compensation required from either party from the other in respect of the mutual benefit of this inspection. We have recently become aware that it is Toronto Hydro's proposal that housing providers should now pay for this visit.

a) How many vaults are housed in apartment buildings?

b) What is the range of the age of Hydro infrastructure in those vaults?

c) What is the average age of Hydro infrastructure?

d) What is the anticipated life span of the infrastructure?

e)

i) With increasing age, what is the failure modality of the equipment?

ii) Would it be Toronto Hydro's opinion that elevated temperature in the room could be a warning sign of upcoming failure?

iii) Can this type of warning assist in avoid greater damage to plant and the surrounding vault and building? Please describe.

RESPONSE:

a) It is estimated that there are 1590 apartments within Toronto Hydro service territory which house customer-owned vaults.

b) Please refer to Exhibit 2B, Section D2, Figure 14.

c) Please refer to Exhibit 2B, Section D2, Figure 14.

d) Please refer to Exhibit 4A, Tab 2, Schedule 2, Page 12, Lines 5 to 10.

e)

i) Failure modes include the following but not limited to: age, corrosion, internal fault, oil leakage, overload, secondary failure, and external factors.

ii) ii) It is possible that a failing or overloaded transformer could trigger an elevation in room temperature. However, there are many other variables which may also contribute to room temperature elevation, including ambient temperature, location of the room, ventilation, etc.

impact of a new customer on the grid to ensure system integrity, and insufficient funding could compromise the ability to properly conduct this analysis;

- Customer dig-ins while performing work, which could potentially result in damaged distribution assets, service outages, or personnel injuries;
- Reduced ability to provide customers with isolations for the maintenance of their electrical equipment, resulting in potential reliability degradation on the distribution system; and
- Reduced ability to provide disconnection and asset removal services to customer wishing to upgrade or redevelop their land.

Table 3 provides the Historical (2015-2017), Bridge (2018-2019), and Test Year (2020) expenditures for each of the Program's segments.

Table 3: Customer-Driven Work Program Expenditures by Segment ($ Millions)

Segment	2015 Actual	2016 Actual	2017 Actual	2018 Bridge	2019 Bridge	2020 Test
Customer Connections	2.1	2.4	2.3	3.0	3.1	3.2
Public Safety and Damage	4.0	4.2	5.9	5.1	4.7	4.5
Customer-Owned Equipment	4.1	3.4	3.5	1.9	1.8	1.9
Total	**10.2**	**10.0**	**11.6**	**9.9**	**9.6**	**9.6**

4.1 Cost Drivers

The 2020 test year cost forecast represents a decrease of $0.6 million from the utility's last rebasing year (2015), a decrease of $2.0 million from the most recent historical actual year (2017), and is largely unchanged from the bridge year (2019).

The variances in the Customer Connections segment are attributable to the complexity of the initial investigation required prior to making an Offer to Connect. As both the number and complexity of expansion projects have been increasing over time, it is

RESPONSES TO OEB STAFF INTERROGATORIES

INTERROGATORY 180:

Reference(s): Exhibit U, Tab 4A, Schedule 1, pp. 2, 5

Preamble:

Toronto Hydro stated that its customer-owned equipment services costs in 2018 were in line with 2017 but $1.6 million higher than originally forecast due to the increase in volume of customer requests for Toronto Hydro to facilitate safe entry into customer-owned vaults.

Toronto Hydro has increased its 2020 forecast of customer-owned equipment service costs by $1.0 million relative to the original filing due to this higher demand.

a) Please further explain the reason for this increase in customer-owned equipment service costs relative to the original 2018 forecast. Please also explain why these increased costs are expected to continue into 2020.

RESPONSE:

The increase in costs in the Customer-Owned Equipment Services segment of $1.6 million over the original 2018 forecast is due to the increase in volume of customer requests for vault access. These costs are expected to continue as there has been no indication of the volume of requests decreasing.

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION

UNDERTAKING NO. JTC1.19:

Reference(s): 4A-GTAA-6, Figure 14

With reference to Figure 14 in IR 4A-GTAA-6, to provide on a best-efforts basis the relative age of the equipment in the 1590 apartments in customer-owned vaults; to show how that relates to assets and age distribution relative to all underground.

RESPONSE:

Please see Figure 1 below.

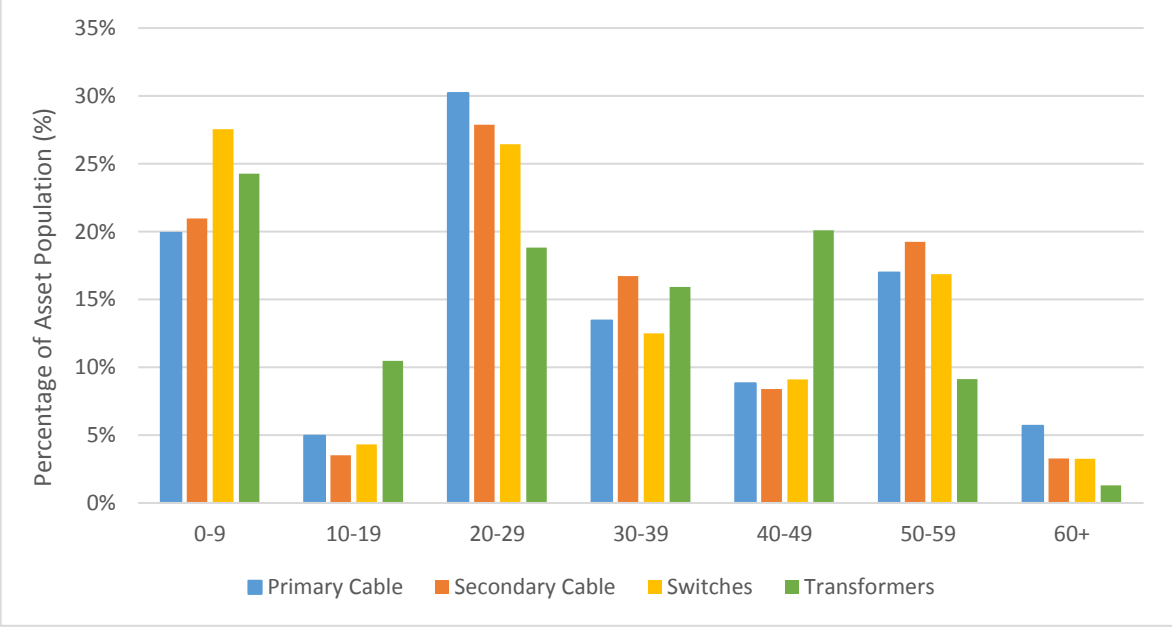

Figure 1: Customer-Owned Vault Asset Age Distribution

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION

UNDERTAKING NO. JTC1.20:

Reference(s): 4A-GTAA-6

To provide an estimate of the lifespan of the assets referred to in undertaking no. JTC1.19.

RESPONSE:

Please see Table 1 below.

Table 1: Useful Lives of Underground Assets referred to in JTC1.19

Asset	Years[1]
UG Primary Cable	40-60
UG Secondary Cable	40-60
UG Switch	30-50
UG Transformer – Submersible	25-40
UG Transformer – Vault	30-40

Note 1: Years correspond to minimum and maximum useful lives.

From: Mike Mulqueen <mmulqueen@torontohydro.com>
Sent: November 9, 2018 5:10 PM
To: Daryl Chong <dchong@gtaaonline.com>
Subject: RE: Vault Access

Hi Daryl,
Sorry I couldn't get back to you earlier today. Our scheduling team will provide a quote when requests are made for vault access depending on the time requirement. My understanding is that the current range for regular-hour appointments is between $566.40+HST (1 hour) and $1274.40+HST (6 hours).

To your second question, we are responding to ratepayers. We need to recover these costs so that non-vault-owning ratepayers are not subsidizing vault owner costs.

Mike
416.9035267

From: Daryl Chong [mailto:dchong@gtaaonline.com]
Sent: November-08-18 4:18 PM
To: Mike Mulqueen <mmulqueen@torontohydro.com>
Subject: Re: Vault Access

Hi Mike,

What's the fee? And who unilaterally decided this and when? Thanks

Daryl Chong
President & CEO
Greater Toronto Apartment Association

On Nov 8, 2018, at 4:10 PM, Mike Mulqueen <mmulqueen@torontohydro.com> wrote:

If you're a building owner or property manager who requires regular vault access, please be aware of the changes to Toronto Hydro's vault access policy. Effective January 1, 2019, Toronto Hydro is charging a fee to access customer-owned vaults. All vault access appointments occurring on or after January 1, 2019 will have a service charge. Since vault access requires a Person in Attendance (PIA) to be present, customers are now financially responsible for the cost of arranging access to their vault.

Please see the attached letter for further details, and share this information with internal departments that are in-charge of scheduling vault maintenance or inspection. If you are a vault owner you may also receive this letter via mail.

For more information or to schedule vault access, please contact us at scheduler@torontohydro.com.

Mike Mulqueen, CEM
Lead – CDM Business Development
Toronto Hydro-Electric System Limited

777 Bay St, Suite 2700, M5G 2C8
mmulqueen@torontohydro.com
o: 416.542.3046 | c: 416.903.5267

<Customer Vault letter_November_2018_Nov1 FINAL.PDF>

TECHNICAL CONFERENCE UNDERTAKING RESPONSES TO GREATER TORONTO APARTMENT ASSOCIATION

UNDERTAKING NO. JTC2.2:

Reference(s): 4A-GTAA-2

To provide the cost the contractor would charge Toronto Hydro for a two-hour visit and compare it to the actual costs; to show the breakdown of the calculation of the $708.

RESPONSE:

The contractor cost portion of the customer charge for a two hour vault appointment is $509, as detailed in Table 1 below. The remainder of the cost that makes up this charge relates to Toronto Hydro's administration and overhead costs, which include receiving and processing the customer's request, booking time with the contractor, ensuring work protection coordination, and administering the overall process.

Table 1: Contractor Cost for Two-Hour Vault Appointment

Description	Cost
Travel Time (Round Trip)	$236
Person in Attendance	$236
Work Protection Coordination with Toronto Hydro	$118
Total Contractor Cost	**$590**

Court File # CV-08-361906

ONTARIO
SUPERIOR COURT OF JUSTICE

THE HONOURABLE JUSTICE	)	Tues DAY, THE 24
	)	
EDWARD BELOBABA	)	DAY OF JUNE, 2014

B E T W E E N :

LEE KENNEDY and BEKALLA YUSUF

Plaintiffs

-and-

TORONTO HYDRO-ELECTRIC SYSTEM LTD. and CITY OF TORONTO

Defendants

-and-

GONTE CONSTRUCTION LIMITED and CITY OF TORONTO

Third Parties

Proceeding under the Class Proceedings Act, 1992

JUDGMENT

THIS MOTION, made by the plaintiffs for an order approving the proposed settlement, and approving class counsel fees and disbursements, was heard on this day at the Court House, 130 Queen Street West, Toronto, Ontario.

ON READING the materials filed, including the following:

(a) the affidavit of Marietta Underwood, sworn May 13, 2014;

(b) the affidavits of Kirsten Franz, sworn June 5, 2014 and June 16, 2014;

(c) the affidavit of Andrew Eckart, sworn June 10, 2014;

(d) the affidavit of Lee Kennedy, sworn June 10, 2014;

(e) the affidavit of Bekalla Yusuf, sworn June 11, 2014;

(f) the letters from The Children's Lawyer and the Public Guardian and Trustee;

(g) the Distribution Plan attached as Schedule "A"; and

(h) the order of Justice Lax dated April 23, 2009 certifying this action as a class proceeding,

AND ON HEARING the submissions of Class Counsel, counsel for State Farm Insurance Company and RBC Insurance, counsel for the defendants and third party, and being advised that The Children's Lawyer and the Public Guardian and Trustee have no objections to the form of this Judgment and Distribution Plan,

AND ON BEING ADVISED that all objections delivered to Kirsten Franz have been delivered to the Court and duly considered,

AND ON BEING FURTHER ADVISED that:

(a) the parties consent to this order;

(b) Marsh Risk Consulting Canada consents to being appointed as Administrator; and

(c) Reva Devins consents to being appointed as Arbitrator;

1. THIS COURT ORDERS that, for the purposes of this Judgment and Distribution Plan, the following definitions apply:

(a) **"2 Secord Avenue"** means the **Units** located at 2 Secord Avenue, in Toronto, Ontario which include, but is not limited to, the following:

Description of Units	Number of Units
bachelor apartment	1
junior one bedroom apartment	85
one bedroom apartment	130
two bedroom apartment	88
three bedroom townhouse	23
TOTAL	**327 Units**

(b) **"Action"** means the action *Kennedy et al.* v. *Toronto Hydro-Electric System Ltd*, court file no. CV-08-361906, but not including crossclaims and third party claims;

(c) **"Administrator"** means Marsh Risk Consulting Canada or its successor appointed from time to time by the **Court**;

(d) **"Arbitrator"** means Reva Devins or her successor appointed from time to time by the **Court**;

(e) **"Claim Form"** means the claim form approved by the Court for use under this **Distribution Plan** attached to the **Judgment** as Schedule "B";

(f) **"Claims Bar Date"** means **October 3, 2014**;

(g) **"Class" or "Class Members"** means those persons (who did not opt out of this action) who on July 20, 2008:

(a) rented a Unit; or
(b) ordinarily resided in a Unit; or
(c) was present in a Unit but was not ordinarily resident in that Unit; or
(d) owned or had an interest in property located in or on a Unit; or
(e) owned one or more of the Units.

excluding Toronto Hydro and Gonte Construction Limited, and their officers, directors, servants or agents and also excluding employees of the City of Toronto who in the course of their employment with the fire department attended at 2 Secord Avenue on July 20, 2008;

(h) **"Class Counsel"** means Sutts, Strosberg LLP , Charney Lawyers and Hotz Lawyers;

(i) **"Class Counsel's Fees"** means the award for fees, disbursements, costs, GST, HST and other applicable charges to Class Counsel awarded in the **Judgment** in this **Action**;

(j) **"Cost of Administration"** means a fixed fee of **$insert** for notice, fees, disbursements and taxes for the **Administrator** and **Arbitrator**;

(k) **"*CJA*"** means the *Court of Justice Act;*

(l) ***"CPA"*** means the *Class Proceedings Act, 1992;*

(m) **"Court"** means the Ontario Superior Court of Justice;

(n) **"Distribution Plan"** means this plan and the procedures set out herein for distributing the **Settlement Amount** less **Class Counsel's Fees** and the **Costs of Administration**;

(o) **"DSM-5"** means American Psychiatric Association Diagnostic and Statistical Manual, 5th edition;

(p) **"Insurer"** means any insurance company of any of the Class Member(s) who did not opt out of the Action.

(q) **"Judgment"** means the judgment of Justice Belobaba approving the settlement of this **Action** and the **Distribution Plan**;

(r) **"Ministry of Health"** means the Ministry of Health and Long-Term Care;

(s) **"Minor"** or **"Minors"** means a person, who as of the date of this judgment, has not attained the age of 18 years;

(t) **"Notice"** means a notice of the **Settlement** of this **Action** substantially in the form of the **Notice** attached to the **Judgment** as Schedule "C";

(u) **"Notice Program"** means the method of giving **Notice** to the **Class Members** particularized in paragraph 5 of this **Judgment**;

(v) **"Released Claims"** means any and all claims, injuries, rights, damages, losses, demands, obligations, actions, causes of action, suits, cross-claims, matters, issues, debts, contracts, liabilities, agreements, costs and expenses, of any nature or kind whatsoever, ascertained or unascertained, suspected or unsuspected, existing or claimed to exist, including unknown claims arising in the future from the facts asserted in this **Action** or which could have been asserted in this **Action** concerning the explosion and fire on July 20, 2008 at **2 Secord Avenue,** but excluding counterclaims, crossclaims and third party claims and also excluding any claims against individuals or entities with whom Toronto Hydro, the City of Toronto and/or Gonte Construction Limited have entered into tolling agreements;

(w) **"Released Parties"** means Toronto Hydro, the City of Toronto, Gonte Construction Limited and their employees, officers, directors, servants, agents and insurers but does not include any individual or entities with whom any of Toronto Hydro, the City of Toronto and/or Gonte Construction Limited have entered into tolling agreements;

(x) **"Settlement Amount"** means $6,526,679.01;

(y) **"Toronto Hydro"** means Toronto Hydro-Electric System Ltd., and its employees, officers, directors, servants and agents; and

(z) **"Unit"** means an apartment or townhouse or other utilizable space located at **2 Secord Avenue**, as particularized in subparagraph 1(a).

2. THIS COURT ORDERS AND DECLARES that the Settlement Amount and the Distribution Plan, annexed hereto as Schedule A, which is incorporated by reference into this Judgment, are fair, reasonable and in the best interests of the Class and are hereby approved. The defendants, third party, nor their insurer or insurers, will not be liable to any Class Members for any amount in excess of the Settlement Amount.

3. THIS COURT DECLARES that Toronto Hydro and/or its insurers will deliver the Settlement Amount to Sutts, Strosberg LLP, in trust within ten days of the approval of this settlement, after which postjudgment interest will be payable at the rate provided for by the *CJA*.

4. THIS COURT ORDERS that the Administrator and the Arbitrator are appointed, each with the duties and responsibilities set out in the Distribution Plan and in this Judgment.

5. THIS COURT ORDERS AND DECLARES that, on or before July 3, 2014, the Notice Program, giving Notice of this Judgment and the Distribution Plan, must be implemented as follows by the Administrator:

(a) posting the Notice in the laundry room at 2 Secord, subject to the consent of the property manager;

(b) placing the Notice under the door of every Unit at 2 Secord, subject to the consent of the property manager;

(c) emailing the Notice to every person who registered with Class Counsel and provided a valid email address;

(d) emailing the Notice to the 2 Secord Tenants' Association;

(e) delivering the Notice by regular mail to every person who has not provided an email address to Class Counsel and has an address that is not located at 2 Secord;

(f) posting the Notice at www.secordclassaction.com;

(g) sending the Notice by email to the Public Trustee and the Children's Lawyer; and

(h) providing the Notice to any other person who requests it.

6. THIS COURT DECLARES that the Notice Program provided for in paragraph 5 satisfies the requirements of s. 17 of the *CPA*.

7. THIS COURT ORDERS AND APPROVES the Claim Forms generally in the form of the attachments hereto at Schedule "B".

8. THIS COURT ORDERS that each Class Member who qualifies to participate in the Distribution Plan must submit to the Administrator a Claim Form and the required supporting documentation on or before the Claims Bar Date in accordance with the Distribution Plan.

9. THIS COURT ORDERS that the Administrator shall pay any award to a Class Member who is a Minor to the Accountant of the Superior Court of Justice to the credit of the Minor, until the Minor attains the age of 18 years, at which time the Accountant shall pay the amount to the Class Member without any further order of the Superior Court of Justice.

10. THIS COURT ORDERS AND DECLARES that if a Class Member does not submit a Claim Form to the Administrator on or before the Claims Bar Date, that the Class Member, and each of their respective heirs, executors and assigns shall be forever barred from participating in the Distribution Plan but shall, in all other respects, be bound by the terms of this Judgment.

11. THIS COURT ORDERS AND DECLARES that each Class Member, Insurers and each of their respective heirs, executors, administrators, estate trustees and assigns:

(a) fully and finally releases the Released Parties from the Released Claims;

(b) shall not commence or continue against any Released Party any action or take any proceeding relating in any way to or arising from the Released Claims; and

(c) shall not commence or continue against any person, any action or take any proceeding relating in any way to or arising from the Released Claims, who will or could, in connection with any such action or proceeding, bring or commence or continue any claim, crossclaim, claim over or any claim for contribution, indemnity or any other relief, against any Released Party.

12. THIS COURT ORDERS AND DECLARES that each Class Member has released its Insurer or Insurers from the obligation to collect the insurance deductible(s) from the Defendants and distribute the deductible(s) to them.

13. THIS COURT ORDERS AND DECLARES that, unless a Class Member successfully opted out of the Action, in accordance with the certification order of Justice Lax made on April 23, 2009, this Judgment and the Distribution Plan are binding upon all of the Class Members and each of their respective heirs, executors, administrators and assigns including those who are minors, unborn persons or persons under a disability and the

requirements of rule 7.08(4) of the *Rules of Civil Procedure* with respect to this Judgment and the Distribution Plan are dispensed with.

14. THIS COURT ORDERS that Sutts, Strosberg LLP:

(a) is authorized and directed to pay to Class Counsel the sum of $1,982,541.00 for Class Counsel fees, including disbursements and taxes; and

(b) by further order, will pay to each of the Class Members the amounts specified in the Distribution Plan.

15. THIS COURT ORDERS that if any Class Member retains Class Counsel, or any other lawyer, to appeal from the Administrator's decision, Class Counsel, or any other lawyer, will be limited to charge, any Class Member or any Family Class Member, 7% of the increased amount awarded by the Arbitrator, plus reasonable disbursements and taxes and Sutts, Strosberg LLP is authorized and directed to pay these amounts.

16. THIS COURT ORDERS AND DECLARES that the Class Counsel fees, disbursements and taxes awarded in paragraphs 14 and 15 constitute a first charge against the Settlement Amount in favour of Class Counsel.

17. THIS COURT ORDERS that the total amount payable for the administration of this settlement to the Arbitrator and the Administrator, collectively, for their fees, disbursements and HST for the performance of their duties pursuant to this Judgment and the Distribution Plan is fixed at $319,138.00 for fees, disbursements and HST payable by Sutts, Strosberg LLP to:

(a) the Arbitrator, as time is incurred per month, to a maximum of $30,000, inclusive of taxes and disbursements; and

(b) the Administrator in the amount of $60,000 per month for four months, inclusive of taxes and disbursements, and the balance when the Administrator is discharged by order of the Court.

18. THIS COURT ORDERS that Class Counsel, the Administrator or the Arbitrator may make a motion to the Court for directions.

19. THIS COURT ORDERS AND DECLARES that no person may bring any action or take any proceeding against the Arbitrator or Administrator or any of their employees, agents, partners, associates, representatives, successors or assigns for any matter in any way relating to the Settlement Agreement, the implementation of this Judgment or the administration of the Settlement Agreement, except with leave of the Court.

20. THIS COURT ORDERS that the subrogated claims of the Ministry of Health and Long Term Care and the Ontario Health Insurance Plan for the Class Members are dismissed with prejudice and without further costs and Sutts, Strosberg LLP may pay the sum of $25,000 to the Ministry of Health and Long Term Care.

21. THIS COURT ORDERS AND ADJUDGES that, save as aforesaid, the Action, excluding counterclaims, crossclaims and third party claims, be and is hereby dismissed, with prejudice and without further costs.

22. THIS COURT ORDERS that a copy of this Judgment and Distribution Plan shall be served upon The Children's Lawyer and the Public Guardian and Trustee by email.

[redacted]

JUSTICE

#1175638 v10

ENTERED AT / INSCRIT À TORONTO
ON / BOOK NO:
LE / DANS LE REGISTRE NO.:

JUN 2 4 2014

AS DOCUMENT NO.:
À TITRE DE DOCUMENT NO.:
PER / PAR:

NOTICE OF SETTLEMENT APPROVAL OF THE 2 SECORD AVENUE EXPLOSION CLASS ACTION

This Notice may affect your rights. Please read carefully.

PURPOSE OF THIS NOTICE

This class action concerns the explosion at 2 Secord Avenue in Toronto ("2 Secord") on July 20, 2008.

This notice is directed to Class Members who are those persons (who did not opt out of this action) who on July 20, 2008:

(a) rented an apartment and/or townhouse or other utilizable space at 2 Secord (a "Unit"); or
(b) ordinarily resided in a Unit; or
(c) was present in a Unit but was not ordinarily resident in that Unit; or
(d) owned or had an interest in property located in or on a Unit; or
(e) owned one or more of the Units.

excluding Toronto Hydro and Gonte Construction Limited, and their officers, directors, servants or agents and also excluding employees of the City of Toronto who in the course of their employment with the fire department attended at 2 Secord Avenue on July 20, 2008.

On June 16, 2014, the settlement was approved by a judge of the Ontario Superior Court of Justice. The defendants will pay the sum of $6,526,679.01 in full and final settlement of all claims in this action in return for a release and a dismissal of the class action. The defendants do not admit any wrongdoing or liability. This settlement is a compromise of disputed claims.

SUMMARY OF THE SETTLEMENT TERMS

The following compensation will be available to Class Members:

$1,425,000 fund for **INCONVENIENCE and LOST USE** for Class Members who ordinarily resided in a Unit and were displaced will receive $2,250 per Class Member for being displaced for up to 42 days. If a Class Member was displaced for in excess of 42 days, they can receive $50 for every additional day of displacement. Each Class Member who resided in townhouse but was not displaced will also receive $2,250 to be compensated for inconvenience.

$1,000,000 fund for **UNINSURED LIVING EXPENSES** and **PROPERTY DAMAGE CLAIMS** for uninsured living expenses incurred and property damage incurred as a result of the explosion and fire, but wasn't covered by insurance.

$100,000 fund for **LOST INCOME** incurred by Class Members as a result of the explosion.

$75,000 fund for **INSURANCE DEDUCTIBLES** for reimbursement of insurance deductibles paid by Class Members.

$1,200,000 fund for **INSURANCE COMPANIES** for partial compensation for the money spent fixing damage to the Units and other expenses associated with the explosion.

$400,000 **PERSONAL INJURY FUND** for injuries sustained as a result of the explosion.

If there are excess funds available after all claims are paid in full, the excess funds will be shared by the Class Members. If there are insufficient funds to pay the claims, the awards will be reduced *pro rata*.

All claims for compensation must be accompanied by supporting documentation and must be approved by the Administrator. In some cases, disputes about compensation will be settled by the Arbitrator.

HOW DO YOU MAKE A CLAIM FOR COMPENSATION?

Detailed instructions for submitting your claim are available at www.secordclassaction.com

You must deliver your completed claim with supporting documentation to the Administrator on or before October 3, 2014 in order to be eligible to receive compensation. If you do not submit a completed claim form on or before October 3, 2014, you will **not** be eligible to receive any settlement funds.

The Administrator will communicate directly with you about the outcome of your claim for compensation.

Most Class Members will receive this notice directly with detailed instructions about how to make a claim. If you believe that you are a Class Member, but you did not receive this notice directly, please visit the website at www.secordclassaction.com to get detailed instructions about how to submit a claim.

INFORMATION

Any questions for the Administrator regarding the settlement should be directed to:

BY MAIL:
Marsh Canada, Administrator
Secord Class Action Settlement
PO Box 428, Station A, Toronto, ON M5W 1C2

BY COURIER:
Marsh Canada, Administrator
Secord Class Action Settlement
161 Bay St., #1400, Toronto, ON M5J 2S4

Tel: 416.907.6054
Fax: 1.866.792.4137
Email: secordclassaction@marsh.com

Any questions for Class Counsel regarding the settlement should be directed to:

Sharon Strosberg
SUTTS, STROSBERG LLP
Tel: 519.561.6296
Fax: 519.561.6203
Email: secordclassaction@strosbergco.com

Ted Charney
CHARNEY LAWYERS
Tel: 416.964.7950 x221
Fax: 416.964.7416
Email: tedc@charneylawyers.com

INTERPRETATION

This Notice has been approved by the court and is a summary of some of the terms of the judgment in this action. If there is a conflict between the provisions of this notice and the terms of the judgment, the judgment prevails. The judgment can be found at www.secordclassaction.com

Of the 5,380 customer-owned locations, approximately 4,645 contain Toronto Hydro-owned equipment, including over 12,000 transformers. For maintenance purposes, these 5,380 locations are divided into two subsets based on customer load requirements: (i) Customer Building Vaults, which possess transformation capacity less than 2,000 kVA; and (ii) Customer Substations, which have transformation capacity of 2,000 kVA or above.

Toronto Hydro maintains Customer Building Vaults on a three-year cycle, in compliance with the OEB's Minimum Inspection Requirements (Appendix C of the DSC). Maintenance of Customer Building Vaults includes a visual inspection of the vault and equipment, thermographic scans and partial discharge testing of all electrical equipment and connections to detect thermal anomalies and corona, and general cleaning to reduce contamination build-up and electrical tracking. Deficiencies that are noted during inspections are either addressed immediately or subsequently addressed through corrective maintenance. The condition of the customer's civil structure is also assessed and any identified deficiencies are communicated to the customer for remediation.

Customer Substations are inspected annually and maintained every four years. Inspections ensure that ventilation, access, and drainage systems are operating as required and that equipment is not leaking, defective, or corroded. Maintenance includes visual inspections, thermographic scans, functional tests, oil testing, and general cleaning. Toronto Hydro maintains a total of 411 Customer Substations.

Through Customer Location Maintenance, Toronto Hydro identifies deficiencies in electrical equipment and verifies the integrity and security of the structures that house