



Kitchener-Wilmot Hydro Inc.

Conditions of Service

March 25, 2019

Fifth Issue

CONDITIONS OF SERVICE



Index

1	Section 1: Introduction	1
1.1	Identification of Distributor and Territory	1
1.2	Related Codes and Governing Laws	1
1.3	Interpretations	2
1.4	Amendments and Changes.....	2
1.5	Contact Information.....	3
1.6	Customer Rights	3
1.7	Distributor's Rights	4
1.7.1	Access on Private Property.....	4
1.7.2	Access to Equipment	4
1.7.3	Space on Private Property	4
1.7.4	Service Disconnection and Interruption	4
1.8	Dispute Resolution (Disputes).....	5
2	Section 2: Distribution Activities (General)	7
2.1	Connections	7
2.1.1	Building that Lies Along	7
2.1.2	Expansions / Offer to Connect	7
2.1.3	Connection Denial	15
2.1.4	Inspections Before Connections	16
2.1.5	Relocation of Plant.....	18
2.1.6	Easements.....	19
2.1.7	Contracts	19
2.2	Disconnection	20
2.2.1	Authority to Disconnect	20
2.2.2	Disconnection & Reconnection – Account Arrears	20
2.2.3	Unauthorized Energy Use.....	20
2.2.4	Safety.....	21
2.2.5	Operational	21
2.3	Conveyance of Electricity.....	22
2.3.1	Limitations on the Guarantee of Supply	22
2.3.2	Power Quality	23
2.3.3	Electrical Disturbances	26
2.3.4	Standard Voltage Offerings.....	27

Table 2.1 - Nominal Secondary Voltages	27
Table 2.2 - Nominal Primary Voltages	27
2.3.5 Voltage Guidelines.....	28
Table 2.3 - Recommended Voltage Variation Limits at Utilization Points	29
2.3.6 Back-up Generators.....	29
2.3.7 Metering.....	30
Table 2.4 - 120/240 Volt Services.....	31
Table 2.5 - 120/208 Volt Services.....	31
Table 2.6 - 347/600 Volt Services.....	32
Table 2.7 - Meter Cabinet Dimensions	34
2.4 Tariffs and Charges	38
2.4.1 Service Connection.....	38
2.4.2 Energy Supply	39
2.4.3 Deposits.....	39
2.4.4 Billing	43
2.4.5 Payments.....	43
2.5 Customer Information	44
3 Section 3: Customer Class Specific	47
3.1 Residential/General Class Service, Single-Phase	47
3.1.1 Residential Service Connection to a Building that Lies Along an Existing Distribution System	48
Table 3.1 - 125/216 Volt Single-Phase Network Services	56
3.1.2 Service Upgrades	57
3.1.3 New Service Connection Outside of the Existing Distribution System	57
3.1.4 New Service Connection in an Underground Residential Development ..	57
3.1.5 Service Relocations	57
3.2 General Service Class, Three-Phase, Secondary Service.....	58
3.2.1 General Service Class	58
3.2.2 Connection Charges	58
3.2.3 General Service Connection to a Building that Lies Along an Existing Distribution System	58
3.3 General Service Class, Three-Phase, Primary Voltage Service Transformation < 5,000kVA.....	62
3.3.1 Customer Information	62
3.3.2 Connection Charges	63

3.3.3	Transformation General	63
	Table 3.2 - Maximum KWH Supplied Transformation.....	64
	Table 3.3 -System Fault Levels For Service Voltages 120/208 & 125/216 V.....	65
	Table 3.4 - System Fault Levels For Service Voltage 347/600 V.....	66
	Table 3.5 – System Fault Levels for Primary Voltage Supply	67
3.3.4	General Service Connection Limitations and Requirements.....	68
3.3.5	Overhead Connection to Kitchener-Wilmot Hydro Inc. Distribution System	72
3.3.6	Underground Connection to Kitchener-Wilmot Hydro Inc. Distribution System	75
3.4	Large User Class, Three-Phase, Primary Voltage, Transformation > 5,000kVA.....	79
3.5	Embedded Generation	79
3.5.1	General	79
	Table 3.6.....	80
3.5.2	Connection Process.....	81
3.5.3	Net Metering Program for an Embedded Generation Facility	81
3.5.4	Facilities Standby Charge	82
3.5.5	Metering for Generation	82
	Table 3.7 - Metering for Embedded Generators	83
3.6	Embedded Wholesale Market Participant	84
3.7	Embedded Distributor	84
3.8	Unmetered Connections	84
3.8.1	Unmetered Load Customer Rights and Obligations.....	85
3.8.2	Unmetered Load Connection and Data Update Process	85
3.8.3	Demarcation Points (Excluding Street Lighting).....	87
3.8.4	Demarcation Points – Street Lighting	87
3.8.5	Pole Attachments.....	87
3.9	Temporary Service Connections.....	88
4	Section 4: Glossary of Terms.....	91
5	Section 5: Appendices	101
	Appendix “A”: Service Design Application Form	101
	Appendix “B”: Schedule of Distribution Rates and Specific Service Charges	104
	Appendix “C” : Schedule of Other Regulated Rates	105
	Appendix “D” : Summary of Changes for Latest Revision.....	106

CONDITIONS OF SERVICE





CoS Manual Revision History

Document #: KWHCoS-100
Revision: Fifth Issue
Effective Date: Draft

Date Last Modified: April 30, 2018

Description of Change	Effective Date	Reason for Change	Revision #
Initial Documents Established	04/30/03		
Second Issue	07/13/04	Changes in Policy and Procedure, Housekeeping, Impedances and definitions	
Second Issue – Revision 1	12/01/04	Metering Changes	1
Second Issue – Revision 2	08/01/05	Rate Changes	2
Second Issue – Revision 3	05/01/06	Rate Changes	3
Second Issue – Revision 4	11/13/06	Fault Level Change	4
Third Issue (Draft)	06/14/07	Expansions / Offer to Connect, Re-write of Embedded Generation and Rate Changes	



CoS Manual Revision History

Document #: KWHCoS-100
Revision: Fifth Issue
Effective Date: Draft

Description of Change	Effective Date	Reason for Change	Revision #
Third Issue – Revision 1	05/01/08	Rate Changes	1
Third Issue – Revision 2	05/01/09	Rate Changes	2
Third Issue – Revision 3	05/01/10	Backup Generators, Meter Height Change, Rate Changes	3
Third Issue – Revision 4	05/01/11	Rate Changes	4
Fourth Issue (Draft)	04/26/13	Re-write for OEB submission and update to policies and procedures (See Appendix D) – Issued for customer comments	
Fourth Issue – Revision 1	07/26/13	Finalized after customer comments period ended	1
Fourth Issue – Revision 2	07/10/15	Housekeeping and clarifications to Distribution	2



CoS Manual Revision History

Document #: KWHCoS-100
Revision: Fifth Issue
Effective Date: Draft

Description of Change	Effective Date	Reason for Change	Revision #
		Activities Section 2 and Unmetered Connections Section 3.8 (See Appendix D)	
Fourth Issue – Revision 2	09/28/15	Finalized after customer comments period ended	2
Fifth Issue (Draft)	04/30/18	Re-write for OEB submission and update to policies and procedures (See Appendix D) – Issued for customer comments	

CONDITIONS OF SERVICE



Section 1

Introduction

1 Section 1: Introduction

1.1 Identification of Distributor and Territory

Kitchener-Wilmot Hydro Inc., a subsidiary of Kitchener Power Corporation, is licensed by the Ontario Energy Board (OEB) to distribute electricity and provide distribution services within the geographical boundaries of the City of Kitchener and Township of Wilmot in the Regional Municipality of Waterloo. Distribution License, ED-2002-0573, issued December 18, 2003 as amended.

1.2 Related Codes and Governing Laws

The distributor-customer relationship between Kitchener-Wilmot Hydro Inc. and the Customer will be in accordance with all applicable Federal, Provincial and Municipal laws, by-laws, regulations and codes, specifically the following:

- The Electricity Act, 1998.
- The Ontario Energy Board Act, 1998, and amending regulations.
- Distribution License ED-2002-0573, as amended.
- The Ontario Energy Board Codes in order of hierarchy:

**Affiliate Relationships Code;
Distribution System Code;
Retail Settlement Code; and
Standard Supply Services Code.**

- Kitchener-Wilmot Hydro Inc. Conditions of Service document.

In the event of a conflict between this Conditions of Service document and the Distribution Licence, Ontario Energy Board regulatory Codes, or the Electricity Act; the Distribution Licence, Ontario Energy Board regulatory Codes or the Electricity Act shall prevail. When a Customer has entered into a specific contract or agreement for services provided by Kitchener-Wilmot Hydro Inc., that Agreement shall govern.

1.3 Interpretations

In this Conditions of Service document:

- Words and phrases shall have the meaning ascribed to them as in Section 4, Glossary of Terms.
- Headings, bolding, italics and underlining are for convenience only and shall not affect the interpretation of these Conditions of Service.
- Words referring to the singular include the plural and vice versa.
- Words referring the masculine include the feminine and vice versa.
- A reference to a document or a provision of a document includes any amendment, supplement, or replacement of that document or provisions in that document.
- An event that is required under these Conditions of Service that occurs on or by a stipulated day which is a holiday may occur on or by the next day, that is not a holiday.

1.4 Amendments and Changes

The Conditions of Service document and amendments made from time to time, form part of a contract between Kitchener-Wilmot Hydro Inc. and any connected customer, generator, or their agents. These Conditions of Service supersede all previous Conditions of Service, oral or written, of Kitchener-Wilmot Hydro Inc.

Kitchener-Wilmot Hydro Inc. will provide advance public notice of any changes to this Conditions of Service document. Notice shall be provided to each Customer by means of a note on and /or included with the customer's bill. Public notices will include proposed implementation dates and a means of public comment.

A revised copy of the Conditions of Service document will be filed with the Ontario Energy Board and made available to the public.

It is the Customer's responsibility to ensure they are using the current version of the Kitchener-Wilmot Hydro Inc. Conditions of Service document. Kitchener-Wilmot Hydro Inc. will have available the latest version of the Conditions of Service document at our office and is available on our website at www.kwhydro.ca

1.5 Contact Information

Kitchener-Wilmot Hydro Inc.
P.O. Box 9010
301 Victoria Street South
Kitchener, Ontario
N2G 4L2

Business Hours
Monday to Friday
8:30 AM to 4:30 PM

Telephone:
General Inquiries: 519-745-4771
Customer Account Inquiries 519-743-3600

Emergency after Hours: 519-745-4771

1.6 Customer Rights

Kitchener-Wilmot Hydro Inc. shall only be liable to a Customer and a Customer shall only be liable to Kitchener-Wilmot Hydro Inc. for any damages that arise directly out of the willful misconduct or negligence of:

- Kitchener-Wilmot Hydro Inc. in providing Distribution Services to the Customer.
- The Customer in being connected to its distribution system; or
- Kitchener-Wilmot Hydro Inc. or the Customer in meeting their respective obligations or exercising their respective rights under these Conditions of Service, their Licenses and any other applicable laws.

Notwithstanding the above, neither Kitchener-Wilmot Hydro Inc. nor the Customer shall be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for any indirect, consequential, incidental or special damages, including but not limited to punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, tort or otherwise.

The Customer shall indemnify and hold harmless Kitchener-Wilmot Hydro Inc., its directors, officers, employees and agents from any claims made by any third parties in connection with the construction and installation of an embedded generation facility or other electrical apparatus by or on behalf of the Customer.

1.7 Distributor's Rights

1.7.1 Access on Private Property

Kitchener-Wilmot Hydro Inc. shall have access to a Customer property in accordance with section 40, Powers of Entry, of the Electricity Act, 1998.

1.7.2 Access to Equipment

The Customer shall not allow anyone other than an employee, or authorized agent of Kitchener-Wilmot Hydro Inc. or a person lawfully entitled to do so, to repair, remove, replace, alter, inspect or tamper with any Kitchener-Wilmot Hydro Inc. equipment or facilities on the Customer's premise.

1.7.3 Space on Private Property

The Customer shall provide Kitchener-Wilmot Hydro Inc., free of charge or rent, with a convenient and safe space for the location of Kitchener-Wilmot Hydro Inc. equipment. The space or point of attachment shall conform to applicable laws and codes including but not limited to the Ontario Electrical Safety Code and the Ontario Building Code. Kitchener-Wilmot Hydro Inc. assumes no risk or liability for any damages resulting from, arising out of, or related to the presence of Kitchener-Wilmot Hydro Inc. equipment located on private property.

1.7.4 Service Disconnection and Interruption

Kitchener-Wilmot Hydro Inc. shall assume no risk or liability for any damages resulting from, arising out of, or related to the disconnection of electrical service for safety or operational reasons in accordance with section 30 of the Electricity Act, 1998 and section 4.2 of the Ontario Energy Board's Distribution System Code.

Kitchener-Wilmot Hydro Inc. shall assume no risk or liability for any damages resulting from, arising out of, or related to the disconnection of electrical service for any overdue amounts payable to Kitchener-Wilmot Hydro Inc. in accordance with section 31 of the Electricity Act, 1998 and section 4.2 of the Ontario Energy Board's Distribution System Code.

1.8 Dispute Resolution (Disputes)

The following outlines the Kitchener-Wilmot Hydro Inc. administrative procedure for resolving complaints by customers and other market participants regarding services provided under the terms of the Kitchener-Wilmot Hydro Inc. Distribution Licence.

1. A complaint or referral must be in writing and must include:

- the name and address of the person or body making it,
- the particulars of the complaint or referral, and,
- any information or facts supporting the complaint or referral.

The complaint or referral must be signed by the individual making it and, where it is made by a corporation or other body, the complaint must be signed by an authorized representative of the corporation or body.

2. A complaint must be addressed to the Kitchener-Wilmot Hydro Inc. staff representative currently dealing with the dispute. It is the responsibility of that staff member to forward the complaint to the Department Manager responsible for that area of activity.
3. Upon receipt of the complaint, an acknowledgement will be sent by the appropriate staff representative, within ten (10) business days, stating the position of Kitchener-Wilmot Hydro Inc. and/or investigations to take place regarding the complaint and an appropriate time line to complete those investigations.
4. In the event that the dispute is not resolved in step 3 above, within the time line specified therein, the Department Manager will forward the complaint to the respective Vice-President.
5. The Vice-President will, after discussion with the President and C.E.O., contact the complainant to review the details of the dispute and attempt, in good faith, to resolve the complaint within thirty (30) business days. Failing resolution, the dispute will be referred to an independent third party complaint resolution agency approved by the Ontario Energy Board, and a copy of all documentation forwarded to the President and C.E.O. All costs of the complaint resolution agency shall be paid equally by the Parties, and each Party shall be responsible for its own expenses, including counsel's fees, unless the award shall specify a different division of the costs.
6. All complaints, resolved or not, including the name of the complainant, the nature of the complaint, the date resolved or referred and the result of the dispute resolution, will be kept on record at Kitchener-Wilmot Hydro Inc.

Section 2

Distribution Activities

(General)

2 Section 2: Distribution Activities (General)

2.1 Connections

2.1.1 Building that Lies Along

As per Section 28 of the Electricity Act, 1998, and section 13 of our Distribution License, Kitchener-Wilmot Hydro Inc. shall connect any building that “lies along” our distribution system and offer to connect any building within the boundaries of our licensed area.

A building “lies along” Kitchener-Wilmot Hydro Inc.’s distribution system when the Customer property or parcel of land that contains the building is directly adjacent to or abuts onto the public road allowance where KWHI has distribution facilities of the appropriate voltage and capacity and can be connected without requiring a distribution system expansion.

Distribution system expansions for customer connection are detailed in section **2.1.2 Expansions / Offer to Connect** of this Conditions of Service document.

2.1.1.1 Connection Charges

Kitchener-Wilmot Hydro Inc. shall recover costs associated with the installation of connection assets by Customer Class via Basic Connection Costs and Variable Connection Costs, collected directly from the Customer, as applicable.

The Variable Connection Costs shall be calculated as the costs associated with the installation of Connection assets **above and beyond** the Basic Connection.

Kitchener-Wilmot Hydro Inc. will recover these Variable Connection Costs, which shall be based on actual cost, directly from the Customer.

2.1.2 Expansions / Offer to Connect

Kitchener-Wilmot Hydro Inc. shall make an offer to connect any customer within the boundaries of our licensed distribution area. Buildings which “lie along” Kitchener-Wilmot Hydro Inc. distribution facilities as defined in section **2.1.1 Building that Lies Along** of this document will be connected in accordance with section **3 Customer Class Specific** of this document. Buildings which do not “lie along” our existing distribution system and which require an expansion prior to connection will be subject to the following.

Definition:

An “Expansion” to the distribution system includes but may not be limited to the following:

1. Physical extension of primary voltage conductors to existing overhead or underground distribution systems required to connect a customer or group of customers.
2. Addition of primary voltage conductors to existing overhead or underground distribution systems required to connect a customer or group of customers.
3. Replacement of conductors and or equipment required to provide sufficient capacity to a customer or group of customers.
4. Converting a lower voltage line to operate at higher voltage.

When an expansion is required to connect a customer or group of customers, Kitchener-Wilmot Hydro Inc. will complete an economic evaluation, which follows the methodology, common elements and related assumptions provided in Appendix B of the Distribution System Code. This evaluation will determine whether a capital contribution is required from the customer or group of customers for the expansion. The connection of the customer or group of customers to the expanded distribution system is detailed in section **3 Customer Class Specific** of this document. Kitchener-Wilmot Hydro Inc. will complete the preliminary planning, design and engineering specifications of the work required for all distribution system expansions and connections and make an Offer to Connect as follows.

An Offer to Connect a specific customer or group of customers, when a capital contribution is required, will include:

- A statement as to whether the offer is a firm offer or an estimate of costs that would be revised in the future to reflect actual costs incurred;
- The amount of the capital contribution, and the calculation used to determine the amount of the capital contribution;
- A statement as to whether an expansion deposit is required. If an expansion deposit is required, the amount and the calculation used to determine the amount of the expansion deposit shall be provided;
- A statement as to whether the offer includes work for which the customer may obtain an alternative bid, and if so, the process by which the customer may obtain the alternative bid;
- A description of, and costs for, the work that is eligible for alternative bid and the work that is not eligible for alternative bid associated with the expansion broken down into the following categories:
 - (i) labour (including design, engineering and construction);
 - (ii) materials;
 - (iii) equipment, and,
 - (iv) overhead (including administration).

- The amount for any additional costs that will occur as a result of the alternative bid option being chosen including, but not limited to, inspection and final connections (“additional costs for alternative bid work”);
- The amount for the cost of the basic connection;
- A description of the Connection charges that would apply and a statement whether they will be charged separately from the capital contribution, and, if known, the amount of those connection charges; and
- Reference to this “Conditions of Service” document and how to obtain a copy.

2.1.2.1 General Information

Kitchener-Wilmot Hydro Inc. will provide to all customers, at no cost to the customer, (excluding those with a Subdivision Servicing Agreement or with transformation greater than 5,000 kVA), a 300-metre single-phase overhead extension of our distribution system, or an equivalent credit toward the construction of any other type of expansion.

For expansions that do not require a capital contribution, Kitchener-Wilmot Hydro Inc. may require the Customer to provide an expansion deposit for up to 100% of the present value of the projected capital costs and on-going maintenance costs of the expansion project.

For expansions that require a capital contribution, Kitchener-Wilmot Hydro Inc. may require the Customer to provide an expansion deposit for up to 100% of the present value of the forecasted revenues of the expansion project.

The expansion deposit must be either in the form of (i) cash or (ii) an irrevocable letter of credit issued by a Schedule I bank as defined in the Bank Act, or (iii) surety bond.

2.1.2.2 Customer Extension Agreement, (No Capital Contribution Required)

The Customer may be required to sign a “Customer Extension Agreement” with Kitchener-Wilmot Hydro Inc. This Agreement will be required if construction of an extension or system capacity upgrade, within the granted extension allowance, is requested to be constructed before all other conditions of service can be satisfied.

A cash or certified cheque deposit equivalent to the estimated cost of the extension is required as a condition of construction when the “Customer Extension Agreement” is signed. This deposit will be refunded, in full, when the service is connected.

Kitchener-Wilmot Hydro Inc. will construct the required expansion and connect the service in accordance with the System Expansion Agreement and the conditions documented in section **3. Customer Class Specific**. In addition, a

security deposit may be required in accordance with section **2.4 Tariffs and Charges** of this document.

2.1.2.3 Customer Expansion Agreement, (Capital Contribution Required)

The Customer will be required to sign a “Customer Expansion Agreement” with Kitchener-Wilmot Hydro Inc. when a capital contribution is required for the construction of an expansion as described in section **2.1.2 .1 General Information**.

An initial economic evaluation will be performed based on the estimated costs and forecasted revenues of the expansion project to determine if the future revenue from the Customer will pay for the cost of the expansion in excess of the extension allowance, as a condition of service connection. If there is a shortfall between the net present value of the projected costs and revenues, a capital contribution in the form of cash or certified cheque equivalent to the shortfall is required from the Customer.

When the construction of the project is complete, Kitchener-Wilmot Hydro Inc. will reconcile the actual costs with the estimated costs and shall obtain from the Customer, or credit the Customer for, any difference between the two calculations.

When the Customer has been connected for a minimum of twelve (12) months, Kitchener-Wilmot Hydro Inc. will complete a final economic evaluation using the actual cost of the expansion (exceeding the extension allowance) and the Customer’s actual energy consumption to determine the amount of the Customer’s capital contribution. If the capital contribution amount resulting from the final economic evaluation differs from the capital contribution amount collected from the Customer, Kitchener-Wilmot Hydro Inc. shall invoice or credit the Customer with the difference.

Further credits will be determined if and when unforecasted customers connect to the expansion. See section **2.1.2.7 Unforecasted Customers**.

Kitchener-Wilmot Hydro Inc. will construct the required expansion and connect the service in accordance with the “Customer Expansion Agreement” and the conditions documented in section **3 Customer Specific** of this document. In addition, a security deposit may be required in accordance with section **2.4 Tariffs and Charges**.

2.1.2.4 Subdivision Servicing Agreement, Residential

The Customer will be required to complete a Residential Subdivision Servicing Agreement with Kitchener-Wilmot Hydro Inc.

An initial economic evaluation will be performed based on the estimated costs and forecasted revenues of the expansion project to determine if the future revenue from the Customer will pay for the cost of the expansion project. If there is a shortfall from the net present value of the projected costs and revenues, a capital contribution in the form of cash or certified cheque equivalent to the shortfall is required from the Customer.

Kitchener-Wilmot Hydro Inc. will also require an expansion deposit for 100% of the present value of the forecasted revenues i.e. the difference between the estimated costs of the expansion project and the amount of capital contribution paid by the Customer.

When the construction of the project is complete, a final economic evaluation will be performed based on the forecasted revenues and actual costs incurred. The amounts collected for the capital contribution and expansion deposit from the initial economic evaluation will be reconciled with the actual cost. Kitchener-Wilmot Hydro Inc. shall obtain from the Customer, or credit the Customer for, any difference between the two calculations.

Once the facilities are energized, Kitchener-Wilmot Hydro Inc. shall annually return the percentage of the expansion deposit in proportion to the actual connections that materialized in that year. This annual calculation shall only be done for the duration of the customer connection horizon of five (5) years. If at the end of the customer connection horizon the forecasted connections contemplated by the original Offer to Connect have not materialized, Kitchener-Wilmot Hydro Inc. shall retain any cash held as an expansion deposit, or be entitled to realize on any letter of credit or bond held as an expansion deposit.

If the Customer has provided any expansion deposit in the form of cash, any portion of the expansion deposit held as cash returned to the Customer shall include interest on the returned amount from the date of receipt of the full amount of the expansion deposit at the Prime Business Rate set by the Bank of Canada less 2 percent.

2.1.2.5 Subdivision Servicing Agreement, Industrial - Commercial

Kitchener-Wilmot Hydro Inc. will provide at no cost to the Customer the internal overhead distribution system. Each individual lot will be serviced according to **Section 3 Customer Class Specific** of this document.

When upstream expansion is required to connect the subdivision to our existing distribution system, the Customer will be required to complete a Subdivision Servicing Agreement, Industrial-Commercial with Kitchener-Wilmot Hydro Inc.

An initial economic evaluation will be performed based on the estimated costs and forecasted revenues of the expansion project to determine if the future revenue from the Customer will pay for the cost of the expansion project. If there is a shortfall from the net present value of the projected costs and revenues, a capital contribution in the form of cash or certified cheque equivalent to the shortfall is required from the Customer.

Kitchener-Wilmot Hydro Inc. will also require an expansion deposit for 100% of the present value of the forecasted revenues i.e. the difference between the estimated costs of the expansion project and the amount of capital contribution paid by the Customer.

When the construction of the project is complete, a final economic evaluation will be performed based on the forecasted revenues and actual costs incurred. The amounts collected for the capital contribution and expansion deposit from the initial economic evaluation will be reconciled with the actual cost. Kitchener-Wilmot Hydro Inc. shall obtain from the Customer, or credit the Customer for, any difference between the two calculations.

Once the facilities are energized, Kitchener-Wilmot Hydro Inc. shall annually return the percentage of the expansion deposit in proportion to the actual demand that materialized in that year. This annual calculation shall only be done for the duration of the customer connection horizon of five (5) years. If at the end of the customer connection horizon the forecasted demand contemplated by the original Offer to Connect have not materialized, Kitchener-Wilmot Hydro Inc. shall retain any cash held as an expansion deposit, or be entitled to realize on any letter of credit or bond held as an expansion deposit.

If the Customer has provided any expansion deposit in the form of cash, any portion of the expansion deposit held as cash returned to the Customer shall include interest on the returned amount from the date of receipt of the full amount of the expansion deposit at the Prime Business Rate set by the Bank of Canada less 2 percent.

2.1.2.6 Alternative Bid Process

When the construction of an expansion project does not involve work with existing circuits and requires a capital contribution, the Customer may seek an alternative bid. The contractors, which the Customer is able to seek alternate bids from, must be pre-qualified by Kitchener-Wilmot Hydro Inc.

The Customer will be required to complete an "Alternative Bid Agreement" with Kitchener-Wilmot Hydro Inc.

If a Customer chooses to pursue an alternative bid and elects to obtain the services of a contractor for an aspect of the expansion project; the following shall apply.

Kitchener-Wilmot Hydro Inc. shall:

Carry out the distribution system planning for the expansion; and develop the specifications for the design, engineering and layout of the expansion and connection.

Perform the construction work on existing Kitchener-Wilmot Hydro Inc. facilities and equipment.

Inspect and approve all aspects of the constructed facilities and material specifications as part of a system quality review and commissioning activity, prior to connecting the constructed facilities to the existing distribution system, and be reimbursed on a fee for service basis.

Upon commissioning of the new distribution facilities constructed by the Customers contractor, assume all rights, materials and operational control of the distribution facilities located on public property or an acquired easement.

The Customer shall:

Complete all of the work that is eligible for alternative bid.

Select, hire and pay the contractor's costs for the work eligible for the alternative bid and assume full responsibility for the construction of that aspect of the expansion project.

Be responsible for administering the contract. Administering the contract includes acquisition of all required permissions, permits, and easements.

Be required to provide capital contribution in the form of cash equivalent to the amount of non-eligible uncontestable alternative bid work associated with the expansion project, which include but not limited to the costs for planning, design, engineering, or installation of facilities required to complete the project; cost for inspection or approval of the work performed by the contractor; and cost for making the final connection of the new facilities to the Kitchener-Wilmot Hydro Inc.'s distribution system.

Be required to provide an expansion deposit for up to 100% of the present value of the forecasted revenues of the expansion project.

Upon commissioning of the new distribution facilities constructed by the Customers contractor, transfer all rights and materials concerning the distribution facilities located on public property or an acquired easement to Kitchener-Wilmot Hydro Inc.

Provide warranties as specified in the "Alternative Bid Agreement" on all material and workmanship completed in the alternative bid.

Transfer Price for Alternative Bid Work:

The transfer price for the alternative bid work shall be the lower of the cost to the Customer to construct the expansion facilities or the amount set out in the initial Offer to Connect to do the alternative bid work.

If the Customer does not provide the cost to construct the expansion facilities to Kitchener-Wilmot Hydro Inc. within thirty (30) days of all the new facilities being energized, then the amount of the transfer price shall be the amount set out in the initial Offer to Connect to do the alternative bid work instead of the Customer's cost.

Final Economic Evaluation and Capital Contribution Settlement:

When the construction of the project is complete, a final economic evaluation will be performed based on the actual costs for the Kitchener-Wilmot Hydro Inc. work, forecasted revenues, plus any transfer price to be paid to the Customer for the alternative bid work, where applicable. The amounts collected for the capital contribution and expansion deposit from the initial economic evaluation will be reconciled with the final economic evaluation. Kitchener-Wilmot Hydro Inc. shall obtain from the Customer, or credit the Customer for, any difference between the two calculations.

Kitchener-Wilmot Hydro Inc. may choose to retain up to 10% of the expansion deposit for a warranty period of up to two (2) years. This portion of the expansion deposit can be applied to any work required to repair the expansion facilities within the two year warranty period. The warranty period begins upon written notice from Kitchener-Wilmot Hydro Inc. following the installation and satisfactory inspection and full energization of the electrical plant in its entirety. Kitchener-Wilmot Hydro Inc. shall return any remaining portion of this part of the expansion deposit at the end of the two year warranty period.

Except for the warranty portion of the expansion deposit which shall be retained for the duration of the warranty period, once the facilities are energized, Kitchener-Wilmot Hydro Inc. shall annually return the percentage of the expansion deposit in proportion to the actual connections or actual demand that materialized in that year. This annual calculation shall only be done for the duration of the customer connection horizon of five (5) years. If at the end of the customer connection horizon the forecasted demand contemplated by the original Offer to Connect have not materialized, Kitchener-Wilmot Hydro Inc. shall retain any cash held as an expansion deposit, or be entitled to realize on any letter of credit or bond held as an expansion deposit.

If the Customer has provided any expansion deposit in the form of cash, any portion of the expansion deposit held as cash returned to the Customer shall include interest on the returned amount from the date of receipt of the full amount

of the expansion deposit at the Prime Business Rate set by the Bank of Canada less 2 percent.

2.1.2.7 Unforecasted Customers

In the event that a customer is added to an eligible expansion project that was constructed and/or paid for by another customer, Kitchener-Wilmot Hydro Inc. will re-evaluate the cost of the entire expansion, using the economic evaluation model, considering both the new customer(s) forecasted load and the existing customer's actual load. The result of the re-evaluation will determine a redistribution of any capital contribution requirements on that section of the distribution facility.

Expansions are eligible for reconciliation for Unforecasted Customers for a period of five (5) years after the first connection to the expanded distribution facility.

2.1.3 Connection Denial

Kitchener-Wilmot Hydro Inc. may refuse to connect or continue to connect any customer for the following reasons.

1. The connection would be in contravention of existing laws of Canada, the Province of Ontario, the Regional Municipality of Waterloo, the City of Kitchener, or the Township of Wilmot.
2. The connection would cause Kitchener-Wilmot Hydro Inc. to be in violation of any of the conditions of the Distribution License.
3. The connection would cause an adverse effect on the reliability and safety of the distribution system.
4. The connection would cause an unsafe work situation beyond the normal risks inherent in the operation of a distribution system.
5. The connection would cause a material decrease in the efficiency of the distribution system, such as power factor.
6. The connection would cause an adverse effect on the quality of distribution services received by an existing customer connection.
7. The connection would cause discriminatory access to distribution services by other customers.
8. The person requesting connection is indebted to Kitchener-Wilmot Hydro Inc. for previous distribution services or for non-payment of a security deposit.

9. Any other conditions documented in Kitchener-Wilmot Hydro Inc.'s Conditions of Service.
10. The Electrical Safety Authority has not issued an Authorization for Connection.
11. A New Account Application and Contract has not been completed.

A connection denial will be documented and forwarded to the requesting party explaining the reason for the connection denial and the outstanding requirements for connection. When Kitchener-Wilmot Hydro Inc. can provide a remedy for the connection denial, it will be offered at this time. If Kitchener-Wilmot Hydro Inc. is unable to provide a remedy to resolve the issue, it is the Customer's responsibility to do so before a connection will be made.

2.1.4 Inspections Before Connections

All new or upgraded electrical installations and equipment owned by the Customer must be inspected by the Electrical Safety Authority as stated in the Ontario Electrical Safety Code, Rule 2-012, and a connection authorization received by Kitchener-Wilmot Hydro Inc. prior to electrical service connection.

Where any electrical installation or part thereof (excluding high voltage equipment) has been disconnected or cut off from a source of supply by Kitchener-Wilmot Hydro Inc. for six months or less for non-payment of an account or because of a change in occupancy of premises, Kitchener-Wilmot Hydro Inc. may reconnect the installation or part thereof without obtaining a connection authorization.

Where a service has been disconnected or cut off from a source of supply by Kitchener-Wilmot Hydro Inc. for a period exceeding six months for non-payment of an account or because of a change in occupancy of premises, Rule 2-012 of the Ontario Electrical Safety Code requires a re-inspection by the Electrical Safety Authority. It shall be the responsibility of the Customer requiring the reconnection to arrange for this inspection and the payment of the fees.

Further inspections must be completed for the following service types.

Duct Banks:

Kitchener-Wilmot Hydro Inc. must inspect, prior to electrical service connection, direct buried and concrete encased duct banks. These inspections are to be done when the ducts are in place but before concrete is poured or backfill applied. Inspection of these installations does not convey responsibility for duct continuity or condition to Kitchener-Wilmot Hydro Inc.

Transformer Rooms:

Transformer or Electrical Equipment Vaults or Rooms require inspection and certification from three parties.

1. The City of Kitchener Building and Inspections Division, or Wilmot Township Development Services, inspects these vaults to the requirements of the Ontario Building Code.
2. The Electrical Safety Authority inspects these vaults to the requirements of the Ontario Electrical Safety Code.

An Authorization for Connection from the Electrical Safety Authority including inspection of the Transformer Room is required prior to connection of the electrical service.

3. Kitchener-Wilmot Hydro Inc. must inspect and approve these structures prior to the installation of our equipment. The specifics of the requirements relating to this inspection are contained in section **3.3 General Service Class, Three-Phase, Primary Voltage Transformation < 5,000kVA.**

Transformer Enclosures and Switchgear Rooms/Vaults:

Kitchener-Wilmot Hydro Inc. must inspect and approve these structures prior to the installation of our equipment. The specifics of the requirements relating to this inspection are contained in section **3.3 General Service Class, Three-Phase, Primary Voltage Transformation < 5,000kw.**

Customer Owned, High Voltage Equipment:

When Customer owned, high voltage switchgear or transformation is removed from the Kitchener-Wilmot Hydro Inc. system for planned maintenance or inspections, an Authorization for Connection must be received from the Electrical Safety Authority before the service will be reconnected.

Metering:

Provision for metering including communication circuits will be specified by Kitchener-Wilmot Hydro Inc. and must be inspected, and approved, by Kitchener-Wilmot Hydro Inc. prior to connection of the electrical service.

Temporary Services:

Temporary services require inspection for connection and periodic inspections for continuance of service as directed by the Electrical Safety Authority.

2.1.5 Relocation of Plant

2.1.5.1 Relocation on Public Property, Customer Request

Relocation of distribution facilities at the request of a customer or developer will be considered in a fair and reasonable manner using good utility practices. When Kitchener-Wilmot Hydro Inc. can relocate the facilities, to the satisfaction of the requesting party, all costs associated with the relocation will be charged to the party requesting the relocation.

2.1.5.2 Relocation on Public Property, Road Authority Request

When requested to relocate a distribution plant, Kitchener-Wilmot Hydro Inc. shall exercise its rights and discharge its obligations in accordance with existing legislation such as the **Public Service Works on Highways Act**, regulations, formal agreements, easements and common law. In the absence of existing arrangements, Kitchener-Wilmot Hydro Inc. is not obligated to relocate the plant. However, Kitchener-Wilmot Hydro Inc. shall resolve the issue in a fair and reasonable manner. Resolution in a fair and reasonable manner shall include a response to the requesting party that explains the feasibility or infeasibility of the relocation and a fair and reasonable charge for relocation based on cost recovery principles.

2.1.5.3 Relocation on Private Property Covered by an Agreement

When relocation is requested from locations previously covered by an Agreement or Easement, the Agreement or Easement, document will determine the conditions and charge for the relocation.

2.1.5.4 Relocation on Private Property Not Covered by an Agreement

Overhead Lines

Kitchener-Wilmot Hydro Inc. considers the same rights of easement that typically apply on private property when our wires, poles and attachments currently exist and are clearly visible.

Underground Lines

Kitchener-Wilmot Hydro Inc. will negotiate, in good faith, with the property owner for easement rights, over the existing cable or the selection of a new location and acquire the appropriate easement rights when required.

2.1.6 Easements

Easements are required when it is necessary to install Kitchener-Wilmot Hydro Inc. distribution facilities on private property that do not solely provide service to that property. Kitchener-Wilmot Hydro Inc. requires that these easements be registered with the Ontario Ministry of Consumer and Business Services, Waterloo, Land Registry Office, on the title of the property that the distribution facilities are located.

For new services or upgrading of an existing service, Kitchener-Wilmot Hydro Inc. may require the customer to provide a registered easement in favour of Kitchener-Wilmot Hydro Inc. prior to service connection or reconnection. Should easements be required on lands not owned by the Customer requiring service, that Customer is responsible for the acquisition of easements in favour of Kitchener-Wilmot Hydro Inc. All costs to complete the registration of the easement will be paid by the Customer.

Unregistered Rights

Section 46 of the **Electricity Act** provides that all property that is subject to unregistered rights prior to April 1, 1999, will continue to be subject to the right until the right expires or until it is released by the holder of the right.

2.1.7 Contracts

Kitchener-Wilmot Hydro Inc. requires that all customers who connect to Kitchener-Wilmot Hydro Inc.'s distribution system complete a New Account Application, see Appendix A, prior to service connection. This Application forms a contract between Kitchener-Wilmot Hydro Inc. and the Customer for the supply of electrical energy.

Kitchener-Wilmot Hydro Inc. requires all Embedded Distributors and Embedded Generators to complete a Connection Agreement. Customers wishing to service and connect a Subdivision or Development are required to complete a Subdivision Servicing Agreement.

Special Contracts that are customized in accordance with the service requested by the Customer may be required and include but are not limited to the following:

- temporary services
- non-permanent structures
- distribution system extensions
- mobile facilities
- special occasion servicing
- generation
- unmetered services.

2.2 Disconnection

2.2.1 Authority to Disconnect

Kitchener-Wilmot Hydro Inc. “may shut off the distribution of electricity to a property if any amount payable by a person for the distribution or retail of electricity to the property pursuant to section 29 of the Electricity Act, 1998 is overdue.” Section 31, The Electricity Act, 1998.

2.2.2 Disconnection & Reconnection – Account Arrears

Immediately following the due date, steps will be taken to collect the full amount of the bill in accordance with sections 2.6 and 2.7 of the Distribution System Code.

If the account remains unpaid after the due date, Kitchener-Wilmot Hydro Inc. will notify the customer by mail or telephone. If the bill continues to be unpaid, in accordance with section 4.2.3 of the Distribution System Code Kitchener-Wilmot Hydro Inc. will deliver a termination notice to the affected property, providing a 10 day notice period, along with information on payment options and specifying the dates on which service could be terminated if the account remains unpaid.

In accordance with section 4.2.2.4 of the Distribution System Code, Kitchener-Wilmot Hydro Inc. will make reasonable efforts to contact the customer either in person or by phone at least 48 hours prior to the scheduled disconnection. The intent of this communication is to ensure the customer is aware of the impending disconnection and the options they have to avoid it.

After a termination notice has been given to the Customer, the service may be disconnected and not restored until full payment has been made, including the cost of reconnection.

Such discontinuance of service does not relieve the Customer of the liability for arrears, nor shall Kitchener-Wilmot Hydro Inc. be liable for any damage to the Customer's premises resulting from such discontinuance of service. Disconnect notices will be in writing and delivered to the service address.

2.2.3 Unauthorized Energy Use

Kitchener-Wilmot Hydro Inc. reserves the right to disconnect the supply of electrical energy to a Customer for causes not limited to energy diversion, fraud or abuse on the part of the Customer. Such service may not be reconnected until the Customer rectifies the condition, obtains all necessary inspections and approvals for reconnection, and provides full payment to Kitchener-Wilmot Hydro Inc. for all costs incurred by Kitchener-Wilmot Hydro Inc. arising from unauthorized energy use, including repair costs, and the cost of disconnection and reconnection.

2.2.4 Safety

Kitchener-Wilmot Hydro Inc. may disconnect a service for emergency, safety or system reliability reasons. Such service disconnections may not be reconnected until the Customer rectifies the condition and provides full payment to Kitchener-Wilmot Hydro Inc. including all costs incurred by Kitchener-Wilmot Hydro Inc. arising from the disconnection, including inspections, repair costs, and the cost of disconnection and reconnection.

2.2.5 Operational

Kitchener-Wilmot Hydro Inc., may consider disconnection of a service for any one of the following:

- Contravention of existing laws of Canada, the Province of Ontario, municipal bylaws or Electrical Safety Authority Codes and Orders.
- Use of Kitchener-Wilmot Hydro Inc.'s distribution system for a purpose that it does not serve and that Kitchener-Wilmot Hydro Inc. does not intend it to serve.
- Adverse effect on the reliability and safety of the distribution system.
- An unsafe worker situation beyond normal risks inherent in the operation of the distribution system.
- A material decrease in the efficiency of the distribution system.
- A materially adverse effect on the quality of distribution services received by an existing connection.
- Inability of Kitchener-Wilmot Hydro Inc. to perform planned inspections and maintenance.
- Failure of the Consumer to comply with a directive that is made by Kitchener-Wilmot Hydro Inc. made for the purpose of meeting its license obligations.
- Theft of power.
- Unauthorized usage or generation.
- Overdue amounts for regulated services, including non-payment of account security deposit, in part or in full, or claims of damage payable to Kitchener-Wilmot Hydro Inc.
- When the identification and pertinent account information of the Customers or Consumers responsible for electricity usage at the premise have not been confirmed to Kitchener-Wilmot Hydro Inc.
- Electrical disturbance propagation caused by Customer equipment that is not corrected in a timely fashion.
- Inaccessibility to Kitchener-Wilmot Hydro Inc. equipment for either: installing, inspecting, operating, replacing, removing, or maintaining, including reading the meter.
- If an electrical connection to Kitchener-Wilmot Hydro Inc.'s distribution system does not meet Kitchener-Wilmot Hydro Inc.'s design requirements.
- Where Kitchener-Wilmot Hydro Inc. does not have clear land rights (such as public road allowance or easements) to service the property.
- Any other conditions identified elsewhere in this document.

Such service disconnections may not be reconnected until the Customer rectifies the condition and provides full payment to Kitchener-Wilmot Hydro Inc. including all costs incurred by Kitchener-Wilmot Hydro Inc. arising from the disconnection, including inspections, repair costs, and the cost of disconnection and reconnection.

2.3 Conveyance of Electricity

2.3.1 Limitations on the Guarantee of Supply

Kitchener-Wilmot Hydro Inc. will endeavour to use best efforts to provide a regular and uninterrupted supply of electricity, but does not guarantee a constant supply of electricity or an unvarying supply of voltage, frequency or power quality.

Kitchener-Wilmot Hydro Inc. will not be liable for damages to customer equipment due to variations in voltage or poor power quality from external forces, such as, but not limited to:

- exceptionally high loads;
- interruptions;
- interruption of one phase;
- non-simultaneous switching of phases in the distribution system;
- low voltage supply from the transmitter or host distributor.

From time to time it is necessary for Kitchener-Wilmot Hydro Inc. to interrupt electrical service to a customer, or group of customers, to facilitate system upgrades, maintenance, or in emergency situations. Whenever practical and, at its discretion, Kitchener-Wilmot Hydro Inc. endeavours to provide reasonable notification and coordination of these outages with the affected customers, notwithstanding the above.

Kitchener-Wilmot Hydro Inc. will not be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of goodwill or for any indirect, consequential, incidental or special damages, whether any of the said liability, loss or damages arise in contract, tort or otherwise as a result of these limitations on the guarantee of supply.

It is the Customer's responsibility to assess their individual needs with respect to the reliability, quality and consistency of supply of electrical service required at their location and install mitigating equipment if that requirement exceeds our normal supply.

Kitchener-Wilmot Hydro Inc. will exercise "Power of Entry" rights as per Section 40 of the Electricity Act 1998, specifically those pertaining to access to common passages, removal of obstructions and shutting off of electricity when required to maintain electrical service to a customer or group of customers.

2.3.2 Power Quality

Notwithstanding the Limitations on the Guarantee of Supply, Kitchener-Wilmot Hydro Inc. will respond to requests for investigations into power outages and quality.

2.3.2.1 Power Quality

2.3.2.1.1 Identification

Kitchener-Wilmot Hydro Inc. provides short term monitoring of Voltage Fluctuations, Tingle Voltage and Ground Fault identification at a Customer's service entrance. The results of this monitoring will determine the impact of the power quality issue, whether the voltage is within the guidelines outlined in this document, and necessary corrective action, if any.

2.3.2.1.2 Monitoring and Investigating

In the investigation of Power Quality complaints, Kitchener-Wilmot Hydro Inc. maintains the right of "Power of Entry" to any building connected to our distribution system to install, inspect, read, calibrate, maintain, repair, alter, remove or replace power quality monitoring meters. This work will be carried out during normal business hours and should not cause any hardship to the parties involved. Monitoring of the customer's service will be done at the discretion of and for periods determined by Kitchener-Wilmot Hydro Inc.

Kitchener-Wilmot Hydro Inc. will not be liable under any circumstances whatsoever for any loss of profits or revenues, business interruption losses, loss of goodwill or for any indirect, consequential, incidental or special damages as a result of activities required for the monitoring or investigation of these complaints.

2.3.2.1.3 Standards

Kitchener-Wilmot Hydro Inc. typically operates the distribution system to maintain a continuous supply of electrical energy within the industry standards of the Canadian Standards Association, Preferred Voltage Levels for AC Systems (CAN3-C235 latest edition) and Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems (IEEE 519-latest edition).

2.3.2.1.4 Mitigation

When the characteristics of the power supplied to a customer do not meet industry standards and the cause is determined to be the responsibility of Kitchener-Wilmot Hydro Inc., appropriate action will be taken to correct the problem. The timeliness of the correction will be dependent on the type of problem and communicated to the affected customers. If Kitchener-Wilmot Hydro Inc. is not able to correct the problem without adversely affecting other

Kitchener-Wilmot Hydro Inc. customers, then there will be no obligation to make any corrections or adjustments.

When the characteristics of the power supplied do not meet industry standards and the cause is determined to be the Customer's responsibility, the offending Customer is required to correct the problem. The timeliness of the correction will be dependent on the type of problem and be solely at the Customers expense. Kitchener-Wilmot Hydro Inc. may require that any Customer problem that adversely affects the distribution system be corrected immediately. If the situation is not corrected, Kitchener-Wilmot Hydro Inc. may disconnect the customer in accordance with our disconnection policy.

2.3.2.1.5 Stray or Tingle Voltage

Varying amounts of low-level voltage often exist between the earth and electrically grounded farm equipment such as metal stabling, feeders, milk pipelines or even wet concrete floors. Usually, these voltage levels present no harm to animals. However, if an animal touches two pieces of equipment that are at different voltage levels, a small electric current passes through the animal. This is known as stray voltage. Stray voltage can be produced by a wide variety of off-farm and on-farm sources.

Using dairy cows as an example, reported symptoms include:

- Reluctance to enter milking parlour
- Reduced water or feed intake
- Nervous or aggressive behaviour
- Uneven and incomplete milkout
- Increased mastitis
- Lowered milk production
- Reduced growth

These same symptoms can also be the result of other non-electrical farm factors. For example, disease, poor nutrition, unsanitary conditions, or milking machine problems can produce some of the same symptoms in farm animals as stray voltage. Farmers should consider and investigate all possibilities, including stray voltage, when attempting to resolve these symptoms.

Off-farm sources:

In a properly functioning electrical distribution system, some voltage will always exist between the neutral system (ground conductors) and the earth. The level of this NEV (neutral-to-earth voltage) can change on a daily or seasonal basis, depending on changes in electrical loading, environmental conditions and other factors. For safety reasons, Kitchener-Wilmot Hydro Inc.'s neutral system is connected to a farm's grounding system. While this bond protects people and animals from shocks caused by faulty electrical equipment and lightning strikes, it

also results in a stray voltage equal to a fraction of the NEV appearing on grounded farm equipment such as feeders, waterers, metal stabling, metal grates, milk pipelines and wet concrete floors.

On-the-farm sources:

Poor or faulty farm wiring, improper grounding, unbalanced farm system loading, defective equipment or voltages from telephone lines or gas pipelines are all possible sources.

For additional information on the effects of stray voltage on livestock see the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) website, <http://www.omafra.gov.on.ca>

If you think you have a Stray Voltage problem, please contact Kitchener-Wilmot Hydro Inc.; Operations Services Department

Kitchener-Wilmot Hydro Inc.
301 Victoria Street South
Kitchener, ON, N2G 4L2
Phone: 519-745-4771
Fax: 519-745-0643

Kitchener-Wilmot Hydro Inc. will schedule a site visit, if warranted, and perform the appropriate measurements as required by section 4.7 of the Distribution System Code to determine if farm stray voltage is present on your farm.

In the event that Kitchener-Wilmot Hydro Inc.'s contribution to farm stray voltage exceeds the limits, Kitchener-Wilmot Hydro Inc. will implement mitigative solutions to lower its farm stray voltage contribution to within prescribed levels, using one or more of the following methods:

- a. Repair any loose, corroded or other high resistance connections
- b. Load balancing
- c. Improve Grounding
- d. Re-sizing Neutral Conductors
- e. Isolation of Neutrals
- f. Convert single-phase circuit to three-phase circuit.

The particular solution will depend of Kitchener-Wilmot Hydro Inc.'s equipment servicing the farm, the extent of the problem and other technical factors.

2.3.2.2 Delivery Quality

2.3.2.2.1 Unplanned Power Interruptions

Kitchener-Wilmot Hydro Inc. provides a 24-hour emergency service for the restoration of electrical power and mitigation of common, supply side, electrical disturbances such as no power, part power, voltage flicker and potential electrical shock hazards.

2.3.2.2.2 Planned Power Interruptions

Planned interruptions are occasionally necessary for the enhancement or maintenance of the distribution system. Kitchener-Wilmot Hydro Inc. will endeavour to provide Customers with reasonable notice of planned interruptions. Failure to provide, or receive, notice of a planned power interruption assesses no responsibility to Kitchener-Wilmot Hydro Inc. for any consequences of the power interruption.

2.3.2.2.3 Critical Customer Considerations

Kitchener-Wilmot Hydro Inc. maintains a listing of Customer's who have life support systems and may be critically affected by power interruptions. These Customers are prioritized and considered during the restoration process of planned or unplanned power interruptions. It is the Customer's responsibility to apply for inclusion on this list and to ensure that the information provided is accurate and up to date.

2.3.2.2.4 Outage Reporting

Depending on the outage, duration, and the number of Customers affected, Kitchener-Wilmot Hydro Inc. may issue a news release and/or messages on social media to advise the general public of the outage and to provide updates on restoration efforts. In turn, news organizations may call for information when they hear of an outage. Kitchener-Wilmot Hydro Inc. maintains a public outage map available on the internet at the following address: <http://outages.kwhydro.ca/>

2.3.3 Electrical Disturbances

Electrical disturbances occur for a variety of reasons. Kitchener-Wilmot Hydro Inc. through good utility practices and engineering, will strive to minimize these disturbances. Kitchener-Wilmot Hydro Inc. cannot, and does not, accept liability due to electrical disturbances experienced because of connection to our distribution system. Kitchener-Wilmot Hydro Inc. will use every reasonable means to identify and rectify the sources of electrical disturbances. Kitchener-Wilmot Hydro Inc. reserves the right to disconnect and/or refuse to connect any customer who causes electrical disturbances on the distribution system.

2.3.4 Standard Voltage Offerings

Depending on the location, we may have one or more of the following voltages available.

Table 2.1 - Nominal Secondary Voltages

V	Phase	Wire
120/240	1	3
120/208	3	4
125/216*	1	3
125/216*	3	4
347/600	3	4

*Our “Downtown Network System” is a three-phase underground distribution system that supplies secondary voltage to a limited area in downtown Kitchener. If you are served from this system these two voltage restrictions apply.

Table 2.2 - Nominal Primary Voltages

kV	Phase	Wire
8.32/4.8	3	4
4.8	1	2
13.8/8	3	4
8	1	2
27.6/16	3	4
16	1	2

The City of Kitchener is serviced by our 13.8/8 kV three-phase, four-wire distribution system, or 8 kV single-phase, two-wire distribution system.

The Township of Wilmot is serviced from either of two systems, namely: our 8.32/4.8 kV three-phase, four-wire, system, 4.8 kV single-phase, two-wire, system; or our 27.6/16 kV three-phase four-wire system, 16 kV single-phase two-wire system. Kitchener-Wilmot Hydro Inc. is in the process of converting the voltage supply in the Township of Wilmot to 27.6/16 kV and requires all new and upgraded services to be designed for this voltage.

Where a particular voltage is not immediately available refer to Section **2.1.2 “Expansions / Offer to Connect”** of this document.

Voltage Conversions

Existing customers served from Kitchener-Wilmot Hydro Inc.'s 8.3/4.8 kV distribution system and who own their equipment such as poles, wires, transformers, switches, etc. are required to upgrade their equipment at their cost, to 27.6 kV standards whenever an upgrade initiated by the customer, is being done. This includes installing dual primary voltage transformers (27600 x 8320V), higher voltage rating insulation, etc.

When Kitchener-Wilmot Hydro Inc. undertakes a voltage conversion to accommodate normal load growth the following shall apply:

1. Kitchener-Wilmot Hydro Inc. shall pay all labour and material costs associated with upgrading private service lines not to exceed Kitchener-Wilmot Hydro Inc.'s estimated labour costs, plus equipment costs such as insulators, cross arms, cutouts, arresters and transformers and underground cables when required.
2. Where it is necessary to replace poles and/or conductors due to end-of-life condition, the Customer shall be responsible for the cost of the material.
3. Kitchener-Wilmot Hydro Inc. shall pay to convert obsolete 600V delta services to 600/347V wye-grounded services.
4. In some cases a more cost-effective solution may be the installation of a step down voltage transformation device.
5. Kitchener-Wilmot Hydro Inc. shall pay for the cost of the electrical inspection.

2.3.5 Voltage Guidelines

Voltages referred to in Section **2.3.4 Standard Voltage Offerings** of this document are nominal voltages. Every attempt will be made by Kitchener-Wilmot Hydro Inc. to ensure that these voltages are maintained, at the customer's service entrance, in accordance with CSA Standard CAN3-235 current edition. This standard defines normal operating voltages to be within $\pm 5\%$ of nominal voltage. Periodic extreme operating voltages can be within $\pm 8\%$ of nominal voltage. Kitchener-Wilmot Hydro Inc. will, on request, monitor voltage at the customer service entrance and mitigate any conditions outside of those stated above and as listed in the table below.

**Table 2.3 - Recommended Voltage Variation Limits
at Utilization Points**

Nominal Voltage	Voltage Limits		Variation	
	Extreme		Operating Conditions	
		Normal	Operating Conditions	
Single-Phase				
120/240	106/212	110/220	125/250	127/254
Three-Phase 4-Wire				
208/120	190/110	194/112	216/125	220/127
600/347	530/306	550/318	625/360	635/367

2.3.6 Back-up Generators

Customers with portable or permanently connected emergency generation of this type shall ensure compliance with all applicable rules of the Ontario Electrical Safety Code, and in particular, preventing feedback on the supply authorities system.

Customers considering installing a Closed-Transition switch shall notify Kitchener-Wilmot Hydro Inc. and shall submit a protection study that satisfies Kitchener-Wilmot Hydro Inc. technical requirements. The Customer shall obtain a written approval from Kitchener-Wilmot Hydro Inc. prior to operation of the switch in closed transition mode. Closed-Transition switches must not parallel the generator with Kitchener-Wilmot Hydro Inc. distribution system for longer than 100 ms under any circumstances.

Customers with permanently connected emergency generation equipment shall notify Kitchener-Wilmot Hydro Inc. regarding the presence of such equipment and shall enter into such agreements as may be requested, or required, under this Conditions of Service.

Customers with portable emergency generation equipment may connect it to a Kitchener-Wilmot Hydro Inc. approved meter base plug-in transfer device that is installed on an outdoor 200A, 4-jaw meter socket. All installations must meet Kitchener-Wilmot Hydro Inc. requirements and will only be considered for residential Customers with 120/240 V, single-phase and up to a 200 A service. Customers must initially contact Kitchener-Wilmot Hydro Inc. to begin the installation process for the meter base plug-in transfer device. Kitchener-Wilmot Hydro Inc. will make the necessary field visit(s) to determine the feasibility of the installation and advise the Customer accordingly.

The installation of a meter base plug-in transfer device is not permitted where a Customer location already has a distributed generation installation (ie. Micro Feed-in Tariff, Feed-in Tariff, Net Metering, Load Displacement, and Renewable Energy Standard Offer Program).

Kitchener-Wilmot Hydro Inc. will consider emergency generation installations which do not conform to the Ontario Electrical Safety Code, and may potentially feedback on the distribution system, as sufficient reason for service disconnection as stated in Section **2.2 Disconnection** of this document.

2.3.7 Metering

Kitchener-Wilmot Hydro Inc. provides, at no charge, one revenue meter and instrument transformers for the majority of service installations at the customers supply voltage.

Kitchener-Wilmot Hydro Inc. will provide individual metering of residential apartments, refer to Section **2.3.7.8 Multiple Tenant Metering**.

No person, except those authorized by Kitchener-Wilmot Hydro Inc., may remove, connect, or otherwise interfere with meters, metering seals, or ancillary equipment.

Damage to Kitchener-Wilmot Hydro Inc. equipment installed on a customer's premises, other than normal wear and tear, will be repaired at the customer's expense.

The following tables are typical metering installations used by Kitchener-Wilmot Hydro Inc.

Table 2.4 - 120/240 Volt Services

Service Amp Rating	Voltage	Phase	Wire	Meter Requirements
60	120/240	1	3	200 amp – 4 Jaw socket meter base
100	120/240	1	3	
125	120/240	1	3	
200	120/240	1	3	
225	120/240	1	3	
Central Metering 400 Max.	120/240	1	3	Pole mounted only, transformer rated meter socket (left jaw shorting), with 3/4" conduit and weather head up pole.
>225 to 400	120/240	1	3	A 400 amp Transformer rated, self-contained meter mounting device.

Table 2.5 - 120/208 Volt Services

Service Amp Rating	Voltage	Phase	Wire	Meter Requirements
60	120/208	1	3	100 amp – 5 Jaw socket meter base. The 5 th jaw is to be located at the 9 o'clock position and bonded to the neutral lug via #12 A.W.G.
100	120/208	1	3	
125	120/208	1	3	200 amp – 5 Jaw socket meter base as above
200	120/208	1	3	
60	120/208	3	4	100 amp – 7 Jaw socket meter base
100	120/208	3	4	
200	120/208	3	4	200 amp - 7 Jaw socket meter base
> 200	120/208	3	4	Meter base to be a 13 Jaw. See section 2.3.7.2 Current Transformer Boxes

Table 2.6 - 347/600 Volt Services

Service Amp Rating	Voltage	Phase	Wire	Meter Requirements
30	600/347	3	4	100 amp - 7 Jaw socket meter base
60	600/347	3	4	
100	600/347	3	4	
200	600/347	3	4	200 amp - 7 Jaw socket meter base
> 200	600/347	3	4	Meter base to be a 13 Jaw. See section 2.3.7.2 Current Transformer Boxes

2.3.7.1 General

For the safety of our service personnel the following requirements apply:

1. There must be a minimum one square metre of safe, clear, level and accessible area in front of each meter location.
2. Metering rooms, when required, must be easily accessible; have a ceiling of at least 2.1 metres and a safe, clear, level area in front of each meter of at least 1 square metre.
3. Metering rooms must be used only for that purpose; not for storage, not for garbage and not extra space.
4. Meters must be clear of adjacent walls by at least 0.5 m (1'6") to the edge of the meter base.
5. All meter locations must be maintained free and clear of obstructions to avoid danger to workers, or damage to our equipment from moving machinery, dust, fumes, moisture etc.
6. All meter base locations will be specified by and must be approved by Kitchener-Wilmot Hydro Inc. before their installation.
7. All outdoor meters will be located at a height of 1.52 ± 0.15 m ($5' \pm 6"$) from a maintained finished grade to the centre of the meter.

8. Indoor meters, where possible, will be mounted at a height of 1.52 ± 0.15 m ($5' \pm 6"$) from the floor to the centre of the meter. When meters are ganged in larger numbers in metering rooms, these restrictions are between a height of 1.52 m (5') and 0.9 m (3') from the floor to the centre of the meter.
9. For commercial or industrial mall locations accessible to the public, the owner shall provide a lockable enclosure or room for the metering equipment. Outdoor meter enclosures may be used, at the discretion of the Kitchener-Wilmot Hydro Inc.
10. All indoor meters will be located on the load side of the main sealable disconnecting device for each unit.
11. All 347/600V and 120/208V self-contained meters will be located indoors on the load side of the main disconnecting device for each unit.
12. Each disconnecting device and meter socket must be clearly and permanently identified with the unit number.
13. Kitchener-Wilmot Hydro Inc. may request a meter be relocated to a suitable location, at the customer's expense, when a customer's activity, such as the addition to or modification of a building, creates an unsatisfactory condition as above.

Failure to comply with the above requirements can result in mandatory and costly meter relocations as a condition of service.

2.3.7.2 Current Transformer Boxes

Where the need exists for the use of metering cabinets, they shall be C.S.A. approved and constructed from sheet steel, minimum 14 A.W.G. painted grey baked enamel A.S.A 61. Cabinet shall be complete with a removable back plate and hinged door with provision for a Kitchener-Wilmot Hydro Inc. sealing device. The following table indicates meter cabinet sizes required.

Table 2.7 - Meter Cabinet Dimensions

Service Size Amps	Voltage Volts	Phase	Wire	Cabinet size Inches
> 200	120/208	3	4	36x36x12 with remote 13 Jaw meter socket
> 200	347/600	3	4	36x36x12 with remote 13 Jaw meter socket
C.T.s & P.T.s in switch-gear				13 Jaw meter socket

Location:

Meter cabinets shall be installed indoors except where special permission is granted by Kitchener-Wilmot Hydro Inc. to install the meter cabinet outside. In such cases an approved, weatherproof, lockable, C.S.A. approved meter cabinet shall be provided by the customer.

Cabinets are to be located no lower than 0.75 m (30") from its bottom to the floor and no higher than 2 m (78") from its top to the floor.

Procedure:

The meter cabinet backplate is to be delivered to the Meter Shop of Kitchener-Wilmot Hydro Inc. to be wired with the necessary equipment as follows.

When current and /or potential transformers are to be mounted in a metering cabinet, service conductors must enter and exit the cabinet from the bottom or within the lower 1/3 of the cabinet. The contractor will be responsible for the installation of the backplate and service connection to the current transformers as specified by Kitchener-Wilmot Hydro Inc., Metering Department. A neutral terminal connected to the neutral lug on the main disconnect must be available in the C.T. compartment.

When C.T.s are mounted in the customer's switchgear, the contractor shall install, or make arrangements with the switchgear manufacturer, to install the C.T.s. A neutral terminal connected to the neutral lug on the main disconnect must be available in the C.T. compartment. Contractors shall install a 1¼" conduit directly from the C.T. compartment to a meter base.

2.3.7.3 Interval Metering

Kitchener-Wilmot Hydro Inc. requires interval metering to be installed on all new and upgraded services where the anticipated peak demand will exceed 50 kW. The interval meter provided by Kitchener-Wilmot Hydro Inc. utilizes wireless communication technology for meter data interrogation purposes.

Customer access to interval metering data will be provided under the conditions listed in the Retail Settlement Code, provided that additional costs are addressed by the Customer, and that access does not hinder Kitchener-Wilmot Hydro Inc.'s access to the meter data.

2.3.7.4 Meter Reading

During normal business hours, the property owner must provide clear, safe and unobstructed access to Kitchener-Wilmot Hydro Inc. staff for obtaining meter readings, performing inspections or performing maintenance. When access is unavailable, Kitchener-Wilmot Hydro Inc. staff will leave notification requiring that satisfactory arrangements be made within a reasonable time to gain access to the meter.

2.3.7.5 Final Meter Reading

When the responsibility for the payment of electrical energy is to be transferred to another party or the service is no longer required, a final meter reading is necessary for account reconciliation. Kitchener-Wilmot Hydro Inc. will make every reasonable attempt to obtain this reading on the date specified by the vacating party. The Customer must provide clear, safe and unobstructed access to Kitchener-Wilmot Hydro Inc. staff for obtaining the final meter reading. The disconnection or continuation of electrical service will depend on the following:

With written confirmation from the property owner, or their agent, the electrical service will not be disconnected and all energy consumption charges after the final reading will be the responsibility of the property owner.

With written confirmation from the property owner or their agent, the electrical service will be disconnected until a service contract has been completed for reconnection of the electrical service.

If a New Account Application has not been executed at the time of the final reading, notification will be left at the property for the owner/occupant to contact the offices of Kitchener-Wilmot Hydro Inc. immediately.

Where no written direction has been received from the owner/occupant, the service will be scheduled for immediate disconnection.

If a final meter reading is not obtained, the Customer shall pay a sum based on an estimated demand and/or energy consumption for electricity used since the last meter reading.

2.3.7.6 Faulty Registration of Meters

Where billing errors have resulted in over-billing, the Customer will be credited with the amount erroneously paid for a period not exceeding two years.

Where billing errors have resulted in under-billing, the Customer shall be charged with the amount erroneously not billed for a period not exceeding two years, except in the case where a customer or retailer who is responsible for the error, whether by way of tampering, willful damage, unauthorized energy use or other unlawful actions, the distributor may require payment of the full under-billed amount.

Where a Retailer is involved, the retailer will be credited or charged as per above.

2.3.7.7 Meter Dispute Testing

Either Kitchener-Wilmot Hydro Inc. or the Customer may request the services of Measurement Canada to resolve a metering dispute. The decision of Measurement Canada is final and binding on both parties.

2.3.7.8 Multiple Tenant Metering

2.3.7.8.1 Multi-Unit Residential Rental Buildings and Condominiums

Developers of new multi-unit residential rental buildings and new and existing condominiums (collectively, "MURBs"), or boards of directors of condominiums, or authorized persons in charge of any other applicable class of unit under Ontario Regulation 389/10, may choose to have Kitchener-Wilmot Hydro Inc. install unit smart metering, or to have Kitchener-Wilmot Hydro Inc. install a bulk interval meter for the purpose of enabling unit sub-metering by a licensed unit sub-meter provider. The MURB Developer or Condominium board of directors shall be responsible for all material and labour costs to install unit smart metering.

Installation of Unit Smart Metering by Kitchener-Wilmot Hydro Inc.

Upon the request of a MURB developer or a condominium board of directors, Kitchener-Wilmot Hydro Inc. will install unit smart metering that meets the functional specification of Ontario Regulation 425/06 – **Criteria and Requirements for Meters and Metering Equipment, Systems and Technology** (smart metering). In that case, each separate residential and commercial unit, as well as common areas, will become direct individual

customers of Kitchener-Wilmot Hydro Inc., with the common area accounts held by the developer, Condominium Corporation or the landlord as the case may be. Where metering rooms are required, each room is to have 20 or more meters per location.

Common Area Metering

Where units in a MURB are to be unit smart metered, the responsible party (MURB developer, condominium board of directors, or landlord) shall enter into a contract with Kitchener-Wilmot Hydro Inc. for the supply of electrical energy for all common or shared services. Common or shared services typically include lighting of all common areas shared by the tenants, or unit owners, and common services such as heating, air conditioning, water heating, elevators, and common laundry facilities. In such cases, consumption for all common areas will be separately metered.

Installation of Bulk Interval Metering by Kitchener-Wilmot Hydro Inc.

Where bulk interval metering is supplied by Kitchener-Wilmot Hydro Inc. to an exempt distributor for the purpose of enabling unit sub-metering, the responsible party (i.e., the developer, condominium corporation, or landlord, but not the unit sub-meter provider) shall enter into a contract with Kitchener-Wilmot Hydro Inc. for the supply of electrical energy to the building.

Exception

All individually metered multi-unit apartment buildings with **10 meters or less** will be required to install the meters on an outside wall in a location specified by Kitchener-Wilmot Hydro Inc.

2.3.7.8.2 General Service

When the tenants in multiple tenanted building(s) do not meet the criteria of residential customers as defined in section **3.1 Residential** the building will be serviced as a General Service as stated in sections **3.2 General Service Class, Secondary Service or 3.3 General Service Class, Three-Phase, Primary Voltage Transformation < 5,000kVA.**

When the building owner elects for Kitchener-Wilmot Hydro Inc. to provide individual metering for the tenants of a building, the building owner will be responsible for all material and labour costs to install the individual meters.

When metering rooms are required, each room is to have 20 or more meters per location.

2.4 Tariffs and Charges

2.4.1 Service Connection

Contract for Service

Customers requesting service with Kitchener-Wilmot Hydro Inc. will be required to:

1. Complete a new Account Application which forms a legal and binding contract between the Customer and Kitchener-Wilmot Hydro Inc.;
2. Supply one piece of appropriate identification;
3. Supply their date of birth;
4. Complete all relevant sections of an "Application for Service Connection or Upgrade" package;
5. When required, complete all necessary agreements and provide all required deposits relating to expansion and connection to Kitchener-Wilmot Hydro Inc. distribution facilities.

Servicing Rates and Charges

Charges for distribution services and specific service charges are made as set out in Kitchener-Wilmot Hydro Inc.'s current approved Rate Order from the Ontario Energy Board. Notice of rate revisions will be published in major local newspapers. Information about changes will also be issued to all customers with the first bill issued after the revised rates.

Connection Rates

Rates for connections or upgrades to Residential services are available from Kitchener-Wilmot Hydro Inc., Engineering Department.

Industrial and commercial connections or upgrades are billed the actual cost of the connection or upgrade.

2.4.2 Energy Supply

2.4.2.1 Standard Supply Service (SSS)

Kitchener-Wilmot Hydro Inc. is the default service provider within the area defined in its Distribution Licence. Kitchener-Wilmot Hydro Inc. will provide Standard Supply Service (SSS) until informed by a customer or authorized Retailer of an intention to switch to the services of a market Retailer.

2.4.2.2 Retailer Supply

Customers transferring from Standard Supply Service (SSS) to a Retailer must comply with the Service Transaction Request (STR) requirements as outlined in sections 10.5 through 10.5.6 of the OEB Retail Settlement Code.

All Service Transaction Requests shall be submitted electronically and contain complete information as outlined in the Retail Settlement Code, section 10.3.

If the information is incomplete, Kitchener-Wilmot Hydro Inc. will notify the retailer of the deficiencies and await a reply before processing the transfer.

2.4.2.3 Wheeling of Energy

Customers considering delivery of electricity through the Kitchener-Wilmot Hydro Inc. distribution system shall contact Kitchener-Wilmot Hydro Inc. for technical requirements and applicable charges.

2.4.3 Deposits

2.4.3.1 Account Security Deposits

Overview

1. Residential customers and non-residential customers <50 kW demand rate class will be required to pay a Security Deposit to Kitchener-Wilmot Hydro Inc. when applying for service unless the customer is able to provide confirmation of a "Good Payment History", or a "satisfactory credit check" from a major credit reporting agency, made at the customer's expense. Customers who are billed by a competitive retailer and the retailer is responsible for issuing the bill to the customer, will not be charged a security deposit.
2. Non-residential customers >50 kW demand rate class will be required to pay a Security Deposit to Kitchener-Wilmot Hydro Inc. unless they are able to provide confirmation of a "Good Payment History", or a "satisfactory credit check" from a major credit reporting agency, or an AAA- or equivalent credit rating from a recognized bond rating agency, made at the customer's expense. Customers who are billed by a competitive retailer and the retailer

- is responsible for issuing the bill to the customer, will not be charged a security deposit.
3. Non-residential customers >5,000 kW demand rate class will be required to pay a Security Deposit to Kitchener-Wilmot Hydro Inc. unless they are able to provide confirmation of a "Good Payment History", or an AAA- or equivalent credit rating from a recognized bond rating agency, made at the customer's expense. Customers who are billed by a competitive retailer and the retailer is responsible for issuing the bill to the customer, will not be charged a security deposit.
 4. Security Deposits will be required from any customer who does not maintain a "Good Payment History" for the required time period relevant to their rate class.

Types of Security

1. Security Deposits may be in the form of cash/cheque, a guaranteed letter of credit from the customer's bank, trust company, or credit union, or a power bond from their insurance company. All guaranteed letters of credit must be "irrevocable" and "automatically renewing".
2. The Security Deposit may be paid in instalments. When requested, customers shall be permitted to pay deposits in equal instalments over a six-month period, except in the case of an upgrade to an existing deposit, which must be paid in full by the due date.

Administration and Refund of Security Deposits

1. Deposits will be held for a minimum of twelve (12) months for a Residential customer, a minimum of five (5) years for a Non-residential customer <50 kW demand rate class, and a minimum of seven (7) years for a Non-residential customer >50 kW demand rate class, upon which time the deposit will be refunded providing the customer has maintained a "Good Payment History" for the required time period.
2. For a Non-residential customer >5,000 kW demand rate class, where the customer has maintained a "Good Payment History" for a minimum of seven (7) years, 50% of the deposit may be eligible for refund. To be eligible for a higher refund the customer must obtain a credit rating from Dominion Bond Rating Service, Standard & Poors, or Moody's.
3. All amounts held on deposit will be applied to the final bill on close of the customer account subject to Kitchener-Wilmot Hydro Inc.'s right to use the security deposit to set off other amounts owing by the customer to Kitchener-Wilmot Hydro Inc. The security deposit shall be returned within six weeks of the closure of an account.
4. Deposits will be refunded if a customer switches to a competitive retailer and the retailer is responsible for issuing the bill to the customer.
5. For existing customers where a Security Deposit has not been collected, or a customer who previously was granted a security deposit waiver, a Security

- Deposit will be required if the customer has not maintained a "Good Payment History" for the required time period relevant to their rate class.
6. A customer failing to provide the appropriate security deposit shall be deemed to be in the same position as a customer in arrears and subject to collection procedures including service disconnection if the deposit remains unpaid past the due date.
 7. Deposits will be reviewed annually and may be adjusted to reflect changes in rates, actual usage, credit rating, or "Good Payment History".

Security Deposit Amounts

The maximum amount of a deposit is calculated in accordance with the Distribution System Code section 2.4.12 and 2.4.16. The amount of the deposit will be based on 2.5 times the average monthly load during the most recent 12 months within the past 24 months. Where a customer has a payment history which discloses more than 1 disconnect notice in a relevant 12 month period, the deposit amount will be based on the customer's highest or estimated monthly load times 2.5 for the most recent 12 months within the past 2 years.

- General Service Customer – >50 kW demand rate class and Large Use Customers >5,000 kW demand

Customers who have a current credit rating (within a recent 12 month period) from a recognized bond rating agency (such as Dominion Bond Rating Service), the amount of a security deposit required may be reduced in accordance with the following table:

<u>Credit Rating</u>	<u>Allowable Reduction in Security Deposit</u>
AAA- and above or equivalent	100%
AA-, AA, AA+ or equivalent	95%
A-, from A, A+ to below AA or equivalent	85%
BBB-, from BBB, BBB+ to below A or equivalent	75%
Below BBB- or equivalent	0%

- A customer that is a corporation within the meaning of the *Condominium Act, 1998* who has an account with Kitchener-Wilmot Hydro Inc. that:
 - (a) relates to a property defined in the *Condominium Act, 1998* and comprised predominantly of units that are used for residential purposes; and
 - (b) relates to more than one unit in the property,

shall be deemed to be a residential customer for the determination of a security deposit requirement (1 year good payment history) and the form of payment of a security deposit (cash or cheque) provided that the customer has filed a declaration form with Kitchener-Wilmot Hydro Inc. attesting to the

customer's status as a corporation within the meaning of the *Condominium Act, 1998*.

Annual Review

All accounts are reviewed on an annual basis to determine any of the following:

- whether a customer who previously supplied a security deposit has maintained a "Good Payment History" for the required time period relevant to each rate class and is now eligible to have the security deposit returned to the customer.
- whether the amount of the security deposit is to be adjusted based on a re-calculation of the customer's average monthly load.
- whether a customer has a payment history that discloses more than one disconnect notice in a 12 month period requiring an adjustment to the maximum security deposit amount.
- whether a customer is required to supply a current credit rating.
- whether a customer's deposit requires adjustment to reflect changes in rates.

Interest on Security Deposits

Interest on cash security deposits is accrued monthly commencing on receipt of the total deposit and will be credited to the customer's account semi-annually. The interest rate paid on cash security deposits shall be at the Prime Business Rate as published on the Bank of Canada website less 2%, updated quarterly.

Exemptions

The following customers are exempt from Account Security Deposits:

- Banks and Credit Unions
- Trust Companies (Trust Company Real Estate Offices are not exempt)
- Government Agencies including City, Region, Provincial and Federal Offices including Liquor Control Board of Ontario stores.
- A deposit is not required if a customer provides a letter of reference from a gas or electric distributor in Canada confirming a "Good Payment History" for the relevant time period as stated for each rate class
 - Residential Customers: 12 months
 - Non-Residential Customers <50 kW demand rate class: 5 years
 - Non-Residential Customers >50 kW demand rate class and Large Use Customers >5,000 kW demand: 7 years

- For all rate classes some of the time period making up the "Good Payment History" must be within the previous 24 months.
- A deposit is not required if a customer, other than a customer in a 5,000 kW demand rate class, provides a "satisfactory credit check" at the customer's expense.

2.4.4 Billing

Kitchener-Wilmot Hydro Inc. will issue bills on a monthly basis. Bills for the use of electrical energy may be based on either a metered rate or a flat rate as determined by Kitchener-Wilmot Hydro Inc.

Data validation ensures data quality and reliability by evaluating load profile and meter data immediately after the data has been retrieved.

Errors

Faulty Registration of Meters is set out in Section **2.3.7.6 Faulty Registration of Meters**.

2.4.5 Payments

Bills are payable in full by the due date; otherwise, overdue daily interest charges will apply to overdue accounts.

Late payment charges are accrued daily at 1.5% per month on balances unpaid after the due date.

Acceptable Forms of Payment are:

Cash:

- Kitchener-Wilmot Hydro Inc. will accept any cash payment in Canadian or United States of America denominations up to a one hundred dollar note. US dollars are taken at par with Canadian dollars.
- Kitchener-Wilmot Hydro Inc. will accept cash denominations to a limit of one hundred of each denomination.
- Kitchener-Wilmot Hydro Inc. reserves the right to refuse damaged or incomplete notes.
- Coins will be accepted in accordance with the Currency Act, which outlines the following limitations:
 - (a) forty dollars if the denomination is two dollars or greater but does not exceed ten dollars;
 - (b) twenty-five dollars if the denomination is one dollar;

- (c) ten dollars if the denomination is ten cents or greater but less than one dollar;
- (d) five dollars if the denomination is five cents; and
- (e) twenty-five cents if the denomination is one cent.

Cheques:

- Only cheques addressed to Kitchener-Wilmot Hydro Inc. will be accepted.
- Cheques in US funds are acceptable. Prior to posting the cheque, Kitchener-Wilmot Hydro Inc.'s bank is contacted and the funds are converted to Canadian dollars which are then applied to the account.
- No other foreign funds are accepted.
- Any cheques that are returned for insufficient funds will be subject to a "Returned Cheque" fee in accordance with our currently effective Rate Order.

Debit:

- Kitchener-Wilmot Hydro Inc. can process debit card transactions at their office location or at the customer's location in the event of a Disconnect/Collection Trip.

Credit Card:

- Kitchener-Wilmot Hydro Inc. does not accept credit cards directly. To make payment with a credit card, Customers can make use of a bill payment system powered by Paymentus Corporation. This service is available via phone (1.877.481.4886) or internet at <https://ipn.paymentus.com/rotp/KWH>. A convenience fee is applied to the Customer for use of this service.
- Kitchener-Wilmot Hydro Inc. will accept credit card payments at the customer's location in the event of a Disconnect/Collection Trip.

2.5 Customer Information

Kitchener-Wilmot Hydro Inc. must receive written authorization from the Customer or their agent to release meter data, payment information, and current or historical usage data. For any of the above information, Kitchener-Wilmot Hydro Inc. shall provide applicable data for 24 billing periods unless the Customer has been connected to our system for a lesser period of time. Kitchener-Wilmot Hydro Inc. is committed to keeping the information of its customers accurate, confidential, secure and private. Kitchener-Wilmot Hydro Inc. shall not use or disclose personal information for purposes other than those for which it was collected, unless consent is given by the individual, or, as required by law. We have developed a Corporate Privacy Policy that governs our collection, use and protection of personal information.

Section 3

Customer Class Specific

3 Section 3: Customer Class Specific

3.1 Residential/General Class Service, Single-Phase

Definition:

Residential Rate Class:

A service supplied to a single-family dwelling unit for domestic or household purposes shall be rate classed as a residential service. Where service is supplied to a combined residence and business (including agricultural usage) the service classification shall be general service.

Street fronting, semi-detached residential buildings and residential Freehold Townhouses will be connected as individual properties upon confirmation of an undertaking to sever the property. The metering arrangement for these properties will be either ganged or individually metered at the discretion of Kitchener-Wilmot Hydro Inc. depending on space and site condition.

General Service Rate Class:

A customer's account will be classified as General Service when the customer does not qualify as a Residential Class customer.

General Service, single-phase customers will be connected as outlined in this section.

Multiple tenant residential developments will be serviced as General Class Customers. General Service Class customers requiring three-phase power will be serviced as outlined in Sections **(3.2 General Service Class Three-Phase Secondary Voltage Service or 3.3 General Service Class Three-Phase Primary Voltage Service)**. On the request of a building owner or condominium corporation, Kitchener-Wilmot Hydro Inc. will provide individual metering for the tenants of the building. When the building owner elects this option each residential unit will be rate classed as a Residential Service. All other services, house meters, etc., will be rate classed as General Service. Refer to Section **2.3.7.8 Multiple Tenant Metering**.

Kitchener-Wilmot Hydro Inc. residential/general service, single-phase, customers (excluding those in expansion projects and multiple tenant buildings) are entitled, at no charge, to a basic connection consisting of the following:

- One utility designed layout.
- The supply and installation of overhead transformation to accommodate a 120/240 volt 200 amp. service (or an equivalent credit).

- Up to 30 metres of overhead secondary, 200 amp. service wire from a service pole, or suitable service pole location, on the customers' side of the street to the customers' point of attachment, and one set of connectors at each end (or an equivalent credit).
- One 240 volt, 200 amp., revenue meter

This Basic Connection or an equivalent allowance will be provided to all residential customers as specified in the Kitchener-Wilmot Hydro Inc.'s Residential/General Class Single-Phase Service Connection Allowances and Variable Charges.

The Basic Connection is applicable to new services only and existing services that upgrade to a 200 amp. overhead service. All other existing services are assumed to have previously benefitted from the Basic Connection.

When single-family dwellings, semi-detached residential buildings, or townhouses are constructed as part of a residential development, the development will be considered a system expansion and serviced as stated in section **2.1.2 Expansions / Offer to Connect** of this document.

3.1.1 Residential Service Connection to a Building that Lies Along an Existing Distribution System

Limitations

1. The available voltage for residential service connections is 120/240 volt or, 125/216 volt, for a residence or dwelling located in the City of Kitchener's downtown core, network distribution system.
2. The maximum service size for a residential service main is 400 amp. The total maximum amperage of all services connected for a central metering service is 600 amperes.
3. Kitchener-Wilmot Hydro Inc. will supply one service per individual property. Existing properties with more than one service will be required to combine them when any upgrade work is required to any one of the services. Where it is not technically feasible or a critical load is being served (e.g. hospital) as determined by Kitchener-Wilmot Hydro Inc., Kitchener-Wilmot Hydro Inc. may, in its sole discretion, connect additional service(s) on the same property. Additional requirements may be required such as having a civic address for each individual building on the property that has a separate service.
4. Only wire, conduit etc. owned and maintained by Kitchener-Wilmot Hydro Inc. will be attached to the distribution system. No customer owned or supplied equipment is permitted on Kitchener-Wilmot Hydro Inc. poles or structures.

5. There must be no outstanding conditions as stated in section **2.1.3 Connection Denial** prior to service connection.

General Requirements

1. Kitchener-Wilmot Hydro Inc. must receive a signed "Application for Service" package from the Customer or their representative. When the completed application is received, Kitchener-Wilmot Hydro Inc. will prepare a Service Design Layout indicating the specific requirements for service connection. These requirements will include the meter location, point of attachment for our wires and the connection charge, if any.
2. The Customer may be required to supply a Security Deposit to be held by Kitchener-Wilmot Hydro Inc. subject to the conditions stated in section **2.4.3 Deposits** of this document.
3. Address identification must be clearly and permanently displayed on the front of the building prior to the connection of the service.
4. The Customer must arrange for inspection by the Electrical Safety Authority to obtain an Authorization for Connection permit.

Metering Location Requirements

1. Revenue meters must be located outside the residence or dwelling (Downtown Network Customers excluded) at a height of $1.52\text{ m} \pm 0.15\text{ m}$ (5' \pm 6") from finished grade. The meter may be located on the front of the residence or dwelling or within 3 m (10') of the front of the residence or dwelling. The front of the residence or dwelling is typically the side facing a public road allowance as determined by Kitchener-Wilmot Hydro. When a Service Design Layout has been prepared the meter must be located as indicated on that layout.
2. Meters must be located on the street side of fences or other structures with a minimum one square metre area maintained level and clear of clutter. The specified location of the meter must not be altered or its access impeded by landscaping or the building of additions.
3. All meters must remain directly and freely accessible to Kitchener-Wilmot Hydro Inc. staff or authorized agent of Kitchener-Wilmot Hydro Inc.
4. All services connected via underground wire to our distribution system must have a 200-ampere rated meter base. Multiple tenant buildings are subject to the limitations described in section **2.3.7.8 Multiple Tenant Metering**.
5. Upgrading of existing services, with the meter located inside, will require relocation of the meter to the outside as directed by Kitchener-Wilmot Hydro Inc.

6. Upgrading of existing services, when the meter is located in an unacceptable location, will require the meter to be relocated as directed by Kitchener-Wilmot Hydro Inc.
7. No one who is not an agent of Kitchener-Wilmot Hydro Inc. shall be permitted to remove, inspect, or tamper with the meter, wires and associated equipment.
8. Detailed metering requirements are available in section **2.3.7 Metering**.

3.1.1.1 Overhead Connection

Kitchener-Wilmot Hydro Inc. provides a basic connection to all residential customers. The customer is responsible for the installation of all equipment and devices required to support Kitchener-Wilmot Hydro Inc. service conductors. These supports and devices are subject to the Ontario Electrical Safety Code and must be inspected and approved, by the Electrical Safety Authority, prior to service connection. The location of customer owned poles that connect to Kitchener-Wilmot Hydro Inc. wires or equipment will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout prior to their installation.

3.1.1.1.1 Overhead Secondary Service, 100 to 200 amp.

Demarcation Point:

Connection to the customers wires at the service mast head.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- the overhead wire to the demarcation point.
- connections to the customers service wire.
- metering and security devices

Customer:

- service point of attachment
- meter base and conduit
- all poles on private property
- trees and landscaping on private property.

Conditions of Service

- The Customer is responsible for the provision of secure points of attachment on the dwelling and, when required, on customer owned poles. These attachments must provide the required conductor clearances from the ground and a clear path to the point of attachment on the Kitchener-Wilmot Hydro Inc. distribution system.

- The Customer is responsible for the installation of a four-jaw socket meter base.

3.1.1.1.2 Overhead Secondary Service, 400 amp or Central Metered

Demarcation Point:

Connection to the customers wires at the service mast head or the wires to the first customer pole where the circuit divides.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- overhead wire to demarcation point.
- connections to the customers service wire.
- metering and security devices.

Customer:

- service point of attachment.
- meter cabinets and bases.
- trees and landscaping on private property.

Conditions of Service

- The Customer is responsible for the provision of secure points of attachment on the dwelling and, when required, on customer owned poles. These attachments must provide the required conductor clearances from the ground and a clear path to the point of attachment on the Kitchener-Wilmot Hydro Inc. distribution system.
- The Customer is responsible for the installation of a Central Meter Service Stack, or a 400-amp transformer rated, self-contained metering unit located on the line side of a 400 amp. service disconnect.
- When a Central Metering Service Stack is used, the combined rating of all the Customer's service equipment shall not exceed 600 amps.

3.1.1.1.3 Overhead Primary Voltage Service, Pole Mounted Utility Owned Transformer

Demarcation Point:

Connection to the customer's first pole in from the Kitchener-Wilmot Hydro Inc. distribution line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- first span of wire and connectors
- power transformer and transformer grounding

- transformer connections to customer primary and secondary wires
- primary voltage disconnect and protective devices (fuse and surge arrester)
- metering and security devices

Customer:

- all other wire
- all poles on private property
- underground cables and terminations
- metering cabinet or central metering service and attachments
- all secondary voltage installations
- trees and landscaping on private property

Conditions of Service

- The Customer is responsible for the provision of secure points of attachment for the Kitchener-Wilmot Hydro Inc. conductors on the first pole in from the Kitchener-Wilmot Hydro Inc. distribution system. These attachments must provide the required conductor clearances from the ground and a clear path to the point of attachment on the Kitchener-Wilmot Hydro Inc. distribution system.
- The customer is responsible to supply and install an overhead primary pole line or an underground primary cable from the demarcation point to the transformer all in compliance with the Ontario Electrical Safety Code.
- The pole used for the installation of Kitchener-Wilmot Hydro Inc.'s transformer must provide eight feet of clear space above the neutral connection. This pole must be at a minimum class 3 wood pole or equivalent. When a wood pole is not used, the specification of the pole or structure must be submitted to Kitchener-Wilmot Hydro Inc. for approval.
- Metering of this service will conform to metering requirements of Secondary Service Customers.
- Kitchener-Wilmot Hydro Inc. will provide one overhead transformer per property. Customers requiring more than one transformer on the property will be responsible for all transformation on site and must install a suitable pole for the connection of primary metering equipment.

3.1.1.1.4 Overhead Primary Voltage Services, Utility Owned Pad Mounted Transformer

Demarcation Point:

Connection to the customer's first pole in from the Kitchener-Wilmot Hydro Inc. distribution line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- first span of wire and connectors
- power transformer and transformer grounding
- transformer connections to customer primary and secondary wires
- primary voltage disconnect and protective devices (fuse and surge arrester)
- metering equipment and security devices

Customer:

- all other wire
- all poles on private property
- underground cables and terminations
- transformer pad
- all secondary voltage installations
- metering cabinet or central metering service and attachments
- trees and landscaping on private property

Conditions of Service

- The Customer is responsible for the provision of secure points of attachment for the Kitchener-Wilmot Hydro Inc. conductors on the first pole in from the Kitchener-Wilmot Hydro Inc. distribution system. These attachments must provide the required conductor clearances from the ground and a clear path to the point of attachment on the Kitchener-Wilmot Hydro Inc. distribution system.
- The customer is responsible to supply and install an overhead primary pole line or an underground primary cable from the demarcation point to the transformer, all in compliance with the Ontario Electrical Safety Code.
- The concrete pad used for the installation of Kitchener-Wilmot Hydro Inc. transformation must be installed in accordance with Kitchener-Wilmot Hydro Inc. specifications. The transformer support pad is available from Kitchener-Wilmot Hydro Inc. When the transformer pad is not purchased from Kitchener-Wilmot Hydro Inc., the specification of the structure must be submitted to Kitchener-Wilmot Hydro Inc. for approval.
- The cable termination elbow of the primary voltage conductor for connection to the pad mounted transformer must be approved by Kitchener-Wilmot Hydro Inc.
- All termination lugs used for underground secondary voltage connections must be approved by Kitchener-Wilmot Hydro Inc.
- Metering of this service will conform to metering requirements of overhead or underground Secondary Service Customers.

Kitchener-Wilmot Hydro Inc. will provide one pad-mounted transformer per property. Customers requiring more than one transformer on the property will be responsible for all transformation on site and must install a suitable pole for the connection of primary metering equipment.

3.1.1.2 Underground Connection

Kitchener-Wilmot Hydro Inc. provides a basic connection to all residential customers. The Customer is responsible for the installation of all equipment and the provision of a trench/conduit for the installation of Kitchener-Wilmot Hydro Inc. service conductors on private property. The location of the service trench/conduit and, if required, transformation will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout prior to installation.

3.1.1.2.1 Underground Secondary Service, 100 or 200 amp.

Demarcation Point:

Connection to the line side of the customer's meter base.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground wire to the demarcation point
- meter and security devices

Customer:

- meter base and conduit
- trench/conduit, backfill, and landscaping on private property

Conditions of Service

- The Customer is responsible for digging, maintaining, and backfilling a trench for the installation of Kitchener-Wilmot Hydro Inc. service cables. The trench shall be 0.9 m in depth and a minimum of 20 cm wide.
- The Customer shall install sand bedding or duct for installation of the service cables. Sand bedding shall be 150 mm below and above the cables. The duct shall be 100 mm Type DB2 installed with a 3/8 inch polypropylene pulling rope and caps at both ends. The duct is to terminate 1 m from the meter location and at the property line. The remainder of the trench shall be backfilled with native excavated material that is clear of debris, rocks, etc.
- Where service cables cross a driveway or walkway, the cables shall be installed in duct.
- A 75 mm wide caution tape shall be installed in the centre of the trench at a depth equivalent to 300 mm – 450 mm from finish grade.
- The Customer is responsible for the installation of a 200 amp. four-jaw socket meter base.

3.1.1.2.2 Underground Secondary Service, 400 amp. Or Central Metered

Demarcation Point:

The connection to the line side of the customer's 400 amp. transformer rated self-contained metering cabinet.

Ownership & Maintenance Responsibilities:**K-W Hydro:**

- underground wire to demarcation point
- metering and security devices

Customer:

- meter cabinet and conduit
- trench, backfill, and landscaping on private property

Conditions of Service

- The Customer is responsible for digging, maintaining, and backfilling a trench for the installation of Kitchener-Wilmot Hydro Inc. service cables. The trench shall be 0.9 m in depth and a minimum of 20 cm wide.
- The Customer shall install sand bedding or duct for installation of the service cables. Sand bedding shall be 150 mm below and above the cables. The duct shall be 100 mm Type DB2 installed with a 3/8 inch polypropylene pulling rope and caps at both ends. The duct is to terminate 1 m from the meter location and at the property line. The remainder of the trench shall be backfilled with native excavated material that is clear of debris, rocks, etc.
- Where service cables cross a driveway or walkway, the cables shall be installed in duct.
- A 75 mm wide caution tape shall be installed in the centre of the trench at a depth equivalent to 300 mm – 450 mm from finish grade.
- The Customer is responsible for the installation of a Central Meter Service Stack, or a 400-amp transformer rated, self-contained metering unit located on the line side of a 400 amp. service disconnect.
- When a Central Metering Service Stack is used, the combined rating of all of the Customer's service equipment shall not exceed 400 amps.

3.1.1.3 Downtown Network Connections

Downtown Kitchener has an underground distribution system connected as a 125/216 volt, three-phase, four wire network service. Residential Customers whose property is in the downtown core will be serviced from this system at 125/216 volt, single-phase three-wire. The maximum permitted single-phase service size is 200 amps. on this system.

Metering

Downtown Network Customers will install the revenue meter or metering equipment inside the residence or dwelling on the load side of the main disconnecting device. Access arrangements for meter reading and meter maintenance must be made with our Customer Service department.

100 or 200 ampere services require a 5-jaw meter base to be installed.

Table 3.1 - 125/216 Volt Single-Phase Network Services

Service Amp Rating	Voltage	Phase	Wire	Meter Requirements
60	125/216	1	3	100 amp – 5 Jaw socket meter base. The 5 th jaw is to be located at the 9 o' clock position and bonded to the neutral lug via #12 A.W.G.
100	125/216	1	3	
125	125/216	1	3	200 amp – 5 Jaw socket meter base as above
200	125/216	1	3	

Electrical Conduits (Ducts)

The Customer is responsible for the installation of a duct from the property line to the service entrance main disconnecting device. The size and location of the duct will be determined on request for service, or upgrade of service and indicated on a Service Design Layout.

Fault Levels

The Downtown Network system has a nominal fault current rating of 200 kA Sym. RMS. The Customer must ensure that properly rated electrical service equipment is used in the service installation.

3.1.2 Service Upgrades

When a Customer requires the main disconnecting device of an existing service to be increased Kitchener-Wilmot Hydro Inc. will evaluate the adequacy of the existing service wire and transformation and install new conductors and /or transformation to connect the upgraded service in accordance with this document.

3.1.3 New Service Connection Outside of the Existing Distribution System

When a residential/general service connection is requested where no distribution facilities exist, an expansion to the distribution system will be required. Refer to section **2.1.2 Expansions Offer to Connect**. Once the distribution system is in place, the service will be connected as outlined in Section **3. Customer Specific**.

3.1.4 New Service Connection in an Underground Residential Development

These service connections are included as part of an expansion agreement between the Developer and Kitchener-Wilmot Hydro Inc. The point of demarcation of these services is identified in section **3.1.1.2.1 Underground Secondary Service, 100 or 200 amp**. The location of the meter shall be on the same side of the building as the service stub provided for each lot, located no farther back from the front corner of the building than 3 metres (10').

3.1.5 Service Relocations

Relocation of existing metering equipment and/or service wires will require that a location suitable to Kitchener-Wilmot Hydro Inc. is available. A Service Design Layout will be prepared indicating relocation requirements and an estimated cost associated with the relocation. All associated costs, including engineering, civil and electrical works, will be borne by the requesting party.

In new subdivisions, relocations of the proposed meter location and/or service trench identified by the Customer prior to connection must be approved by Kitchener-Wilmot Hydro Inc. All associated costs, including engineering, civil and electrical works, will be borne by the requesting party.

3.2 General Service Class, Three-Phase, Secondary Service

3.2.1 General Service Class

Definition:

A Customer's account will be classified as General Service when the customer does not qualify as either a Residential Class customer or a Large User Class customer. Unmetered connections, though classified as General Services, are connected in accordance with the conditions set out in section **3.8 Unmetered Connections**.

A secondary voltage supply is a service being delivered from Kitchener-Wilmot Hydro Inc. distribution facilities onto a customer's property at voltages less than 750 volts.

3.2.2 Connection Charges

The Customer is responsible for all costs associated with the connection of the service. Kitchener-Wilmot Hydro Inc. will prepare an estimate of the charges to the Customer and include this estimated amount with the Offer to Connect. The Customer may provide a deposit equal to the estimated charges, thereby accepting the Offer to Connect.

When the service is connected, Kitchener-Wilmot Hydro Inc. will reconcile the actual charges with the estimated charges and invoice the customer with the credit or outstanding balance.

When applicable the Customer will also be responsible for the cost to expand Kitchener-Wilmot Hydro Inc.'s distribution system as outlined in section **2.1.2 Expansions / Offer to Connect**.

3.2.3 General Service Connection to a Building that Lies Along an Existing Distribution System

3.2.3.1 General

Limitations

1. The secondary voltage and maximum size of the Customers main disconnecting devices for three-phase secondary service will be as follows:
347/600 v 3 Ø 4 wire – 300 amp
120/208 v 3 Ø 4 wire – 600 amp
125/216 v 3 Ø 4 wire – (Downtown Network) – 1600 amp. (80% rated)
2. Kitchener-Wilmot Hydro will supply one service per individual property. Existing properties with more than one service will be required to combine them when any upgrade work is required to any one of the services. Where it is not technically feasible or a critical load is being served (e.g. hospital) as

determined by Kitchener-Wilmot Hydro Inc., Kitchener-Wilmot Hydro Inc. may, in its sole discretion, connect additional service(s) on the same property. Additional requirements may be required such as having a civic address for each individual building on the property that has a separate service.

3. No customer owned or supplied equipment is permitted on Kitchener-Wilmot Hydro Inc. poles or structures. Only wire, conduit etc. owned and maintained by Kitchener-Wilmot Hydro Inc. will be attached to the distribution system.
4. There must be no outstanding conditions as stated in section **2.1.3 Connection Denial** prior to service connection.

General Requirements

1. Kitchener-Wilmot Hydro Inc. must receive a completed "Service Design Application Form" package from the Customer or their representative (see Appendix A). When the completed application is received Kitchener-Wilmot Hydro Inc. will prepare a Service Design Layout indicating the specific requirements for service connection. These requirements will include the meter location, point of attachment for our wires and the estimated connection charge.
2. A Connection Deposit covering the estimated connection charge will be required prior to construction. Upon completion of the work, the customer will be responsible for the actual construction costs. Kitchener-Wilmot Hydro Inc. will reconcile the actual costs with the estimated costs and shall further invoice or credit the outstanding balance.
3. The Customer must supply a Security Deposit to be held by Kitchener-Wilmot Hydro Inc. subject to the conditions stated in section **2.4.3 Deposits** of this document.
4. Address identification must be clearly and permanently displayed on the front of the building prior to the connection of the service.
5. The Customer must arrange for inspection by the Electrical Safety Authority to obtain an Authorization for Connection permit.

Metering Location Requirements

1. Revenue meters must be located as directed by Kitchener-Wilmot Hydro Inc. and as detailed in section **2.3.7 Metering**.
2. Meters must be located with a minimum 1 square metre area maintained level and clear of clutter. The specified location of the meter must not be altered or its access impeded.

3. All meters must remain directly accessible to Kitchener-Wilmot Hydro Inc. staff.
4. Upgrading of existing services, when the meter is located in an unacceptable location will require the meter to be relocated as directed by Kitchener-Wilmot Hydro Inc.
5. Detailed metering requirements are available in section **2.3.7 Metering**.

3.2.3.2 Overhead Connection

The Customer is responsible for the installation of all equipment and devices required to support Kitchener-Wilmot Hydro Inc. service conductors. These supports and devices are subject to the Ontario Electrical Safety Code and must be inspected and approved prior to service connection. The location of poles that connect to Kitchener-Wilmot Hydro Inc. wires or equipment will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout prior to their installation.

3.2.3.2.1 Overhead Secondary Service, 100 to 600 amp.

Demarcation Point:

Connection to the customers wires at the service mast head.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- the overhead wire to the demarcation point
- connections to the customers service wire
- metering and security devices

Customer:

- service point of attachment(s)
- meter base, cabinets and conduits
- trees and landscaping on private property

Conditions of Service

- The Customer is responsible for the provision of secure points of attachment and, when required, customer owned poles. These attachments must provide the required conductor clearances from the ground and a clear path to the point of attachment on the Kitchener-Wilmot Hydro Inc. distribution system.
- The Customer is responsible for the installation of meter sockets, cabinets, and conduits as directed by Kitchener-Wilmot Hydro Inc.

3.2.3.3 Underground Connection

The customer is responsible for the installation of all equipment and the provision of a duct structure for the installation of Kitchener-Wilmot Hydro Inc. service conductors on private property. The location of the duct structure will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout prior to installation. All three-phase, four-wire, services will be installed in conduit in a concrete encased duct structure.

3.2.3.3.1 Underground Secondary Service 100 to 600 amp.

Demarcation Point:

Electrical:

The wire to the line side connectors of the customer's meter base or main disconnecting device.

Civil:

Duct/pull box structure at the customer's property line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground wire to the electrical demarcation point
- pole riser and duct bank to the civil demarcation point
- meter and security devices on private property

Customer:

- meter base and attachments
- duct bank/structure and landscaping

Conditions of Service

- The Customer is responsible for construction of a duct bank containing two 100 mm Type II PVC, DB ducts encased in a minimum of 75 mm of concrete terminating in the service as per Kitchener-Wilmot Hydro Inc. Specification C5560 or C5899. The ducts must be installed with a 3/8 inch polypropylene pulling rope and caps at both ends. The duct bank/structure is to terminate at the customers service entrance and at the property line.
- The Customer is responsible for the installation of meter sockets, cabinets, and conduits as directed by Kitchener-Wilmot Hydro Inc.

3.2.3.3.2 Underground Network Secondary Service 100 to 1600 amp.

Demarcation Point:

Electrical:

The wire to the line side connectors of the customer's main disconnecting device.

Civil:

Duct/pull box structure at the customer's property line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground wire to the electrical demarcation point
- duct bank to the civil demarcation point
- meter and security devices on private property

Customer:

- meter base and attachments
- duct bank/structure and landscaping

Conditions of Service

- The Customer is responsible for the installation of a duct bank from the property line to the service entrance main disconnecting device. The size, number and location of the ducts will be determined on request for service, or upgrade of service, and indicated on a Service Design Layout.
- The Customer is responsible for the installation of meter sockets, cabinets, and conduits as directed by Kitchener-Wilmot Hydro Inc.

Fault Levels

The Downtown Network system has a nominal fault current rating of 200 kA Sym. RMS. The Customer must ensure that properly rated electrical service equipment is used in the service installation.

3.3 General Service Class, Three-Phase, Primary Voltage Service Transformation < 5,000kVA

3.3.1 Customer Information

Definitions:

A Customer's account will be classified as General Service when the customer does not qualify as either a Residential Class customer or a Large User Class customer.

A primary voltage service is a connection to Kitchener-Wilmot Hydro Inc. distribution facilities onto a customer's property at voltages greater than 750 volts.

Customer owned substations are a collection of transformers and switchgear located in a suitable room, enclosure or vault owned and maintained by the customer, and supplied at primary voltage.

This section addresses Primary Voltage, Three-Phase, General Service Class Customers with up to 5,000 kVA of transformation located on the customer's property.

3.3.2 Connection Charges

The Customer is responsible for all costs associated with the connection of the service. Kitchener-Wilmot Hydro Inc. will prepare an estimate of the charges to the Customer and include this estimated amount with an Offer to Connect. The Customer may provide a deposit equal to the estimated charges, thereby accepting the Offer to Connect.

When the service is connected Kitchener-Wilmot Hydro Inc. will reconcile the actual charges with the estimated charges and invoice or credit the customer with the outstanding balance.

When applicable, the Customer will also be responsible for the cost to expand the Kitchener-Wilmot Hydro Inc. distribution system as outlined in section **2.1.2 Expansions / Offer to Connect.**

3.3.3 Transformation General

3.3.3.1 Supply

Kitchener-Wilmot Hydro Inc. will provide transformation to General Service Class Customers less than 5 MVA subject to the following:

- a) Kitchener-Wilmot Hydro Inc. will supply and install transformation to a maximum of 1,500 kVA per transformer location, room, enclosure or pad-mount foundation on the 13.8/8 kV or 27.6/16 kV distribution systems.
- b) Transformer supply from the 8.3/4.8 kV and 27.6/16 kV distribution systems will be determined through an engineering study. Typically, Kitchener-Wilmot Hydro Inc. can supply up to 500 kVA of transformation on the 8.3/4.8 kV system.
- c) When one property requires more than one transformer and/or more than 1,500 kVA of transformation, Kitchener-Wilmot Hydro Inc. will install transformation in multiple locations, rooms/vaults, enclosures, or pad-mount foundations, in a looped, underground connection to a maximum of 5,000

kVA per property. Transformation will be serviced from a loop supply consisting of switching equipment and primary underground cable unless approved otherwise by Kitchener-Wilmot Hydro Inc.

Customers may supply and install their own transformation in accordance with the Ontario Electrical Safety Code. Kitchener-Wilmot Hydro Inc. will Offer to Connect Customer owned transformation consistent with the points of demarcation stated in sections **3.3.5 Overhead** and **3.3.6 Underground**.

Transformation Owned by Kitchener-Wilmot Hydro Inc.

1. Kitchener-Wilmot Hydro Inc. transformation must be installed on a pole or in a room/vault or enclosure as specified by Kitchener-Wilmot Hydro Inc.
2. The maximum size of transformation supplied by Kitchener-Wilmot Hydro Inc. from the various distribution systems is as follows:

Table 3.2 - Maximum KWH Supplied Transformation

Transformer Type	Secondary Voltage (V)	Maximum Transformer Size Supplied by KWHI (kVA)		
		Distribution Voltage (kV)		
		8.3	13.8	27.6
Overhead	208Y/120	225	225	225
	600Y/347	225	225	225
Room/Vault Or Enclosure	208Y/120	500	1500	750
	600Y/347	500	1500	(750*)
Pad-Mount	208Y/120	N/A	N/A	N/A
	600Y/347	N/A	1500	1500

*Only for existing 8.3 kV installations converted to 27.6 kV supply. All new 600Y/347V services from the 27.6 kV supply shall be pad-mounted transformers only.

3. System fault levels for secondary voltage supplied by Kitchener-Wilmot Hydro Inc. are as follows;

**Table 3.3 -System Fault Levels For
Service Voltages 120/208 & 125/216 V**

Maximum Main Switch Amp	Maximum Transformer Capacity kVA	Nominal Transformer Impedances	Nominal System Fault Current kA
600	150	2.3	18
800	225	2.3	26
1000	300	3.7	26
1200	300	3.7	26
1400	500	3.7	36
1600	500	3.7	36
1800	500	3.7	36
2000	750	3.7	54
2500	750	3.7	54
3000	1000	3.7	72
4000	1000/1500	3.7	72/108
5,000 @ 80% Rating	1500	3.7	108

**Table 3.4 - System Fault Levels For
Service Voltage 347/600 V**

Maximum Main Switch Amp	Maximum Transformer Capacity kVA	Nominal Transformer Impedances %	Nominal System Fault Current kA
400	300	1.5	20
600	500	1.5	35
800	750	2.3	35
1000	750	2.3	35
1200	1000	3.7	35
1600	1500	3.7	40

Customer Owned Transformer Requirements

1. When a Customer elects to install their own transformer, the installation must meet the Ontario Electrical Safety Code and a connection authorization must be issued by the Electrical Safety Authority prior to commissioning of the customer's equipment.
2. Kitchener-Wilmot Hydro Inc. will specify the primary voltage required for connection.
3. Kitchener-Wilmot Hydro Inc. will install secondary voltage metering when the secondary voltage is consistent with those supplied by the utility and the Customer is installing only one transformer.
4. Kitchener-Wilmot Hydro Inc. will install, in the Customer's duct bank, primary voltage cables from a Kitchener-Wilmot Hydro Inc. pole to the line side of the Customer's equipment, for transformation up to 2500 kVA on the 13.8 kV system or up to 5000 kVA on the 27.6 kV system.
5. Customer owned transformation greater than 2500 kVA on the 13.8 kV system must be connected via an overhead connection to the Kitchener-Wilmot Hydro Inc. distribution system.
6. System fault levels for primary voltage supply are as follows;

Table 3.5 – System Fault Levels for Primary Voltage Supply

Voltage kV	Nominal System Fault Level MVA	Nominal Phase to Ground Fault Level kA
27.6/16	800	8.5
13.8/8	500	8.5
8.32/4.8	75	5.5

3.3.3.2 Transformer Rooms / Vaults

Transformer Rooms/Vaults, when required, must be constructed in accordance with the Ontario Building Code. The typical requirements of Kitchener-Wilmot Hydro Inc. are documented in our specification C5553, C5554 and C5555. Transformer rooms must have the doors open to an area accessible to our vehicles with a suitable roadway. When the transformer room is located below grade an access well must be provided as outlined in our specification C5559. Kitchener-Wilmot Hydro Inc. is responsible for the maintenance and repairs of the transformers and wiring owned by the utility but not the Transformer Room(s) or any other structure that forms part or is part of the Customer's building.

3.3.3.3 Transformer Enclosures

Transformer Enclosures, when required, must be constructed in accordance with the typical requirements of Kitchener-Wilmot Hydro Inc. which are documented in our specification B8336 or B8352. Transformer enclosures must be in an area accessible to our vehicles with a suitable roadway. Kitchener-Wilmot Hydro Inc. is responsible for the maintenance and repairs of the transformers and wiring owned by the utility but not the Transformer Enclosure(s) or any other structure that forms part or is part of the Customer's structure or building.

3.3.3.4 Pad-Mount Transformer Foundations

Pre-cast concrete foundations for three-phase pad-mount transformers, when required, must be supplied and installed in accordance with the requirements of Kitchener-Wilmot Hydro Inc. which are documented in our specification D8820. Kitchener-Wilmot Hydro Inc. will supply and deliver the foundations to the Customer's site at the Customer's expense. The transformers are to be located such that a minimum of 3.0 m working space is provided on all four sides. Transformers must be located adjacent to an asphalt or gravel driveway for access, and protected from vehicular traffic. Kitchener-Wilmot Hydro Inc. is responsible for maintenance and repairs of the transformers and wiring owned by the utility but not the foundation or other structures that form part of the installation.

3.3.3.5 Switchrooms

Switchrooms, when required, must be constructed in accordance with the requirements of Kitchener-Wilmot Hydro Inc. and the Ontario Building Code. The typical requirements of Kitchener-Wilmot Hydro Inc. are documented in our specification C5604. Switchrooms must have the doors open to an area accessible to our vehicles with a suitable roadway. Kitchener-Wilmot Hydro Inc. is responsible for the maintenance and repairs of the high-voltage switches, fuse cabinets, and wiring owned by the utility but not the Switchrooms or any other structure that forms part or is part of the Customer's building.

3.3.3.6 Underground Switchgear Vaults

Pre-cast Underground Switchgear Vaults and Covers, for submersible switchgear and related protective devices, when required, must be supplied and installed in accordance with the requirements of Kitchener-Wilmot Hydro Inc. which are documented in our specifications C9095, C9096, C9097, B9098, and D9101. The Underground Switchgear shall be located adjacent to a driveway or parking lot for access, and provided with a minimum of 3.0 m working space on all four sides. Switchgear Vaults shall be protected from vehicular traffic. Kitchener-Wilmot Hydro Inc. is responsible for maintenance and repairs of the submersible switchgear, protective devices and wiring owned by the utility, but not the vault and cover or other structures that form part of the installation.

3.3.4 General Service Connection Limitations and Requirements

Limitations

1. Kitchener-Wilmot Hydro will supply one service per individual property. When the total connected transformation exceeds 1500 kVA an underground looped system complete with switching equipment is required where Kitchener-Wilmot Hydro Inc. maintains ownership of the transformers. Existing properties with more than one service will be required to combine them when any upgrade work is required to any one of the services on the property. Where it is not technically feasible or a critical load is being served (e.g. hospital) as determined by Kitchener-Wilmot Hydro Inc., Kitchener-Wilmot Hydro Inc. may, in its sole discretion, connect additional service(s) on the same property. Additional requirements may be required such as having a civic address for each individual building on the property that has a separate service.
2. Kitchener-Wilmot Hydro Inc. will provide one overhead transformer per property. Customers requiring more than one transformer on the property will be responsible for all transformation on site and must install a suitable pole for the connection of our primary metering equipment.
3. No customer owned or supplied cables or equipment is permitted on Kitchener-Wilmot Hydro Inc. line poles or structures. Only wire, owned and

maintained by Kitchener-Wilmot Hydro Inc. will be attached to the distribution system save and except primary voltage overhead conductors when specified by Kitchener-Wilmot Hydro Inc.

4. There must be no outstanding conditions as stated in section **2.1.3 Connection Denial** prior to service connection.

General Requirements

1. Kitchener-Wilmot Hydro Inc. must receive a completed "Service Design Application Form" package from the Customer or their representative to begin design work on the service connection (See Appendix A). When the completed application is received, Kitchener-Wilmot Hydro Inc. will prepare a Service Design Layout indicating the specific requirements for service connection. These requirements will include the meter location, point of attachment for our wires and an estimate of the connection charge.
2. The Customer must supply a connection deposit to be held by Kitchener-Wilmot Hydro Inc. subject to the conditions stated in section **3.3.2 Connection Charges**.
3. Address identification must be clearly and permanently displayed on the building prior to the connection of the service.
4. The Customer must arrange for an Authorization for Connection from the Electrical Safety Authority prior to connection of the service.

Metering Location Requirements

1. Revenue meters will be located as directed by Kitchener-Wilmot Hydro Inc. and as detailed in section **2.3.7 Metering**.
2. Meters must be located with a minimum 1 square metre area maintained level and clear of clutter. The specified location of the meter must not be altered or its access impeded.
3. All meters must remain directly accessible to Kitchener-Wilmot Hydro Inc. staff.
4. Upgrading of existing services, when the meter is located in an unacceptable location, will require the meter to be relocated as directed by Kitchener-Wilmot Hydro Inc.
5. Detailed metering requirements are available in section **2.3.7 Metering**.

Power Supply from Downtown Secondary Network System

1. Commercial projects in the Downtown area which require power less than 500 kW will be supplied from the existing 216Y/125 volt Downtown Network System. Kitchener-Wilmot Hydro Inc. will provide one 216Y/125 volt source of supply.
2. When transformers are required to be installed to supply the project, the Developer must supply space satisfactory to Kitchener-Wilmot Hydro Inc., within the development for the distribution transformers, as well as the necessary duct system from the transformer area to the distribution facilities on the road allowance.
3. Where the main service entrance equipment exceeds 800 amp. rating the Developer must supply a bus stub connection into the distribution transformer area.
4. The metering of the project may be bulk or individual at the discretion of the Developer. The location for the metering equipment will be subject to the approval of Kitchener-Wilmot Hydro Inc.
5. The right is reserved by Kitchener-Wilmot Hydro Inc. to revise the 500 kW estimated demand limitation depending on economic and engineering considerations, with respect to the distribution facilities in the area.

Power Supply from Downtown 13.8 kV Loop System

1. Commercial projects which will have a power demand in excess of 500 kW are to be supplied from the Underground 13.8 kV Downtown Loop Systems.
2. Kitchener-Wilmot Hydro Inc. will provide a single 13.8 kV loop supply source for each block of 2500 kW load (estimated demand). The Developer will be required to install a substation(s) for each block of 2500 kW load.
3. If the Developer requires duplicate supply facilities for each block of 2500 kW load, these facilities, including any additional metering equipment, can be supplied at the Developer's cost.
4. The Developer will be required to supply space within the development for Kitchener-Wilmot Hydro Inc.'s 13.8 kV switching equipment. This space must not be subjected to flooding conditions, and its location must be acceptable to Kitchener-Wilmot Hydro Inc.

5. Kitchener-Wilmot Hydro Inc. will supply and install the necessary distribution facilities required on any public road allowance. The Developer will supply and install any duct system required from the switching locations to the distribution facilities within the public road allowance. Such installations will be subject to the inspection and approval of Kitchener-Wilmot Hydro Inc.
6. Kitchener-Wilmot Hydro Inc. will supply and install the 13.8 kV loop cables from the Switching locations to the distribution facilities within the public road allowance and charge the Developer 100% of the costs involved.
7. Kitchener-Wilmot Hydro Inc. will supply and install the 13.8 kV loop switching equipment and protective devices required at the switching locations. The Developer will be responsible for the cost of the protective devices.
8. The Developer will supply and install any duct system required from the switching location to the Developer's substation. The installation will be subject to the inspection and approval of Kitchener-Wilmot Hydro Inc.
9. Kitchener-Wilmot Hydro Inc. will supply and install the 13.8 kV cables for the Switching location to the Developer's substation and charge the Developer 100% of the cost involved.
10. The entire installation must conform to the requirements of the Electrical Safety Authority Inspection Department where applicable.
11. The Developer will be required to supply space for Kitchener-Wilmot Hydro Inc. metering equipment. Bulk metering will be required for each project, or alternatively individual metering may be installed by the Developer at his cost.
12. Where two or more substations are installed, standard metering equipment will be installed for each substation by Kitchener-Wilmot Hydro Inc. Alternatively, summation metering equipment can be installed at the option of the Developer. The Developer will be assessed the difference in cost between the standard metering equipment and the summation metering equipment.
13. Developers have the option to provide their own transformers or have Kitchener-Wilmot Hydro Inc. supply the transformer(s) subject to the size and voltage limitations outlined in Section **3.3.3.1**.

14. The Developer will own and maintain the following facilities:

- any duct systems within the development
- the space allocated for Kitchener-Wilmot Hydro Inc.'s switching equipment
- the substations
- any individual sub-metering equipment where a bulk meter is utilized.

15. Kitchener-Wilmot Hydro Inc. will own and maintain the following facilities:

- the 13.8 kV switching equipment
- the 13.8 kV loop cables from the facilities on the road allowance to the switching locations
- the 13.8 kV cables from the switching locations to the substations
- allowance to the switching locations
- the facilities within the road allowance
- the metering equipment
- power transformer(s) (if provided by Kitchener-Wilmot Hydro Inc.).

16. The right is reserved by Kitchener-Wilmot Hydro Inc. to revise the 500 kW estimated demand limitation depending on economic and engineering considerations, with respect to the distribution facilities in the area.

3.3.5 Overhead Connection to Kitchener-Wilmot Hydro Inc. Distribution System

The Customer is responsible for the installation of all equipment and devices required to support Kitchener-Wilmot Hydro Inc. service conductors. These supports and devices are subject to the Ontario Electrical Safety Code and must be inspected and approved prior to service connection. The location of poles that connect to Kitchener-Wilmot Hydro Inc. wires or equipment will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout prior to their installation.

Where hybrid overhead and underground connection arrangements are installed for the connection of Utility supplied transformation greater than 225 kVA, the Customer must supply and install all primary voltage underground wire. The Customer must also install primary and secondary voltage terminations in accordance with Kitchener-Wilmot Hydro Inc. specifications and directions.

The Customer will supply and install all secondary conductors. Kitchener-Wilmot Hydro Inc. will provide isolation of the primary supply to allow the owner or contractor to work safely on the primary cable dip pole. Kitchener-Wilmot Hydro must approve all secondary conductor used for interface with our distribution transformers.

3.3.5.1 Overhead Primary Voltage Service, Utility Owned Transformation up to 225 kVA (Pole Mounted)

Demarcation Point:

Connection to the customer's first pole in from the Kitchener-Wilmot Hydro Inc. distribution line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- first span of wires and connectors
- power transformer and transformer grounding
- transformer connections to customer primary and secondary wires
- primary voltage disconnect and protective devices (fuses and surge arresters)
- metering equipment and security devices

Customer:

- all primary and secondary wire
- all poles on private property
- metering cabinet or metering service and attachments
- all secondary voltage installations
- trees and landscaping on private property

Conditions of Service

- The pole used for the installation of Kitchener-Wilmot Hydro Inc. transformation must provide eight feet of clear space above the neutral connection. This pole must be at a minimum 45ft class 3 wood pole or equivalent. When a wood pole is not used, the specification of the pole or structure must be submitted to Kitchener-Wilmot Hydro Inc. for approval.
- The customer's first service pole must be located within 30m of the closest connection point on Kitchener-Wilmot Hydro Inc.'s distribution system.
- Metering of this service will conform to metering requirements of Secondary Service Customers.
- The customer's pole line construction requires an Authorization for Connection from the Electrical Safety Authority.

3.3.5.2 Overhead Primary Voltage Service, Utility Owned Transformation 300 to 1500 kVA (Radial Feed)

Demarcation Point:

Connection to the customer's first pole in from Kitchener-Wilmot Hydro Inc. distribution line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- first span of wires and connectors
- power transformer and transformer grounding
- primary voltage disconnect and protective devices (fuses and surge arresters)
- metering equipment and security devices

Customer:

- all primary and secondary voltage wire and cable
- all other connectors (connection to transformer must be to Kitchener-Wilmot Hydro Inc. specifications)
- all poles on private property
- transformer vault/room or enclosure or pad-mount foundation
- metering cabinet or metering service and attachments
- all secondary voltage installations
- trees and landscaping,
- duct/trench and backfill on private property.

Conditions of Service

- Transformer must be pad-mounted or installed in above grade vault.
- Metering of this service will conform to metering requirements of Secondary Service Customers.
- The customer's first service pole must be located within 30m of the closest connection point on Kitchener-Wilmot Hydro Inc.'s distribution system.
- The customer's pole line construction requires an Authorization for Connection from the Electrical Safety Authority.

3.3.5.3 Overhead Primary Voltage Service, Customer Owned Transformation up to 5,000 kVA

Demarcation Point:

Connection to the customer's fused load-interrupter switch on the first pole in from the Kitchener-Wilmot Hydro Inc. distribution line.

Ownership & Maintenance Responsibilities:

K-W Hydro:

- first span of wires and connectors
- metering equipment and security devices

Customer:

- all primary and secondary voltage wire and cable
- power transformer(s) and transformer grounding
- all poles on private property
- primary voltage disconnect device and fusing
- metering cabinet or metering service and attachments
- trees and landscaping,
- duct/trench and backfill on private property

Conditions of Service

- Metering of this service will conform to metering requirements of Secondary Service Customers when only one transformer is installed. Where multiple transformers are installed Kitchener-Wilmot Hydro Inc. will install primary voltage metering at the ingress point.
- The customer's first service pole must be located within 30m of the closest connection point on Kitchener-Wilmot Hydro Inc.'s distribution system.
- The Customer's pole line construction requires an Authorization for Connection from the Electrical Safety Authority.

3.3.6 Underground Connection to Kitchener-Wilmot Hydro Inc. Distribution System

The Customer is responsible for the installation of all duct structures required to support Kitchener-Wilmot Hydro Inc. service conductors. These duct structures are subject to the Ontario Electrical Safety Code and must be inspected and approved by both Kitchener-Wilmot Hydro Inc. and the Electrical Safety Authority prior to service connection. The location of poles that connect to Kitchener-Wilmot Hydro Inc. wires or equipment will be determined by Kitchener-Wilmot Hydro Inc. and indicated on a Service Design Layout.

The Customer will supply and install all secondary conductors. Kitchener-Wilmot Hydro Inc. will connect one set of secondary conductors between Kitchener-Wilmot Hydro Inc. transformers, and the customer's main disconnecting device or

bus stub. Kitchener-Wilmot Hydro must approve all secondary conductor and lugs used by the customer as being suitable for connection to the Kitchener-Wilmot Hydro Inc. transformer(s).

Kitchener-Wilmot Hydro will provide and install road crossings on public property as required, at the expense and discretion of Kitchener-Wilmot Hydro Inc. A pull box at the customer's property line will normally provide the demarcation between a road crossing and the customers duct structure.

If the riser pole is located on the same side of the road as the property to be serviced, the customer must construct the duct bank/structure to the property line. Kitchener-Wilmot Hydro Inc. will construct the duct structure on public property.

3.3.6.1 Underground Primary Voltage Service, Utility Owned Transformer up to 225 kVA (Pole Mounted)

Demarcation Point:

Electrical:

secondary voltage connections at the transformer

Civil:

duct/pull box structure at customer's property line

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground primary voltage cable(s)
- all primary voltage pole riser hardware
- duct structure from the property line to the Utility distribution system
- power transformer and transformer grounding
- primary and secondary connections at transformer
- metering equipment and security devices

Customer:

- all poles on private property
- all secondary voltage wire and cable installations
- duct/pull box structure on customer's property
- metering cabinet or metering service and attachments
- landscaping on private property

3.3.6.2 Underground Primary Voltage Service, Utility Owned Transformation up to 1500 kVA (Radial Feed)

Demarcation Point:

Electrical:

secondary voltage connections at the transformer

Civil:

duct/pull box structure at customer's property line

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground primary voltage cable(s)
- all primary voltage pole riser hardware
- duct structure from the property line to the Utility distribution system
- power transformer and transformer grounding
- primary and secondary connections at transformer
- metering equipment and security devices

Customer:

- all secondary voltage cable or a bus stub and installations
- duct/pull box structure on customer's property
- transformer vault/room or enclosure or pad-mount foundation
- metering cabinet or metering service and attachments
- landscaping on private property

3.3.6.3 Underground Primary Voltage Service, Utility Owned Transformation up to 5 MVA (Loop Feed)

Demarcation Point:

Electrical:

secondary voltage connections at the transformer(s)

Civil:

duct/pull box structure at customer's property line

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground primary voltage cable(s)
- all primary voltage pole riser hardware
- primary voltage switches, fuse cabinets and switchgear used in the loop connection
- duct structure from the property to Utility distribution system

- power transformers and transformer grounding
- primary and secondary connections at transformer locations
- metering equipment and security devices

Customer:

- all secondary voltage cable or bus stubs
- duct/pull box structure on customer's property and transformer vaults/rooms or enclosures or pad-mount foundations
- metering cabinet or metering service and attachments
- all secondary voltage installations
- duct structure, switchgear vaults/rooms or enclosures and landscaping on private property

3.3.6.4 Underground Primary Voltage Service, Customer Owned Transformer(s) up to 2500 kVA on 13.8 kV System or 5000 kVA on 27.6 kV System (Radial Feed)

Demarcation Point:

Electrical:

primary voltage supply connections at disconnecting device

Civil:

duct/pull box structure at customer's property line

Ownership & Maintenance Responsibilities:

K-W Hydro:

- underground primary voltage wires to the primary disconnecting device
- all primary voltage pole riser hardware
- duct structure from the property line to Utility distribution system
- primary connections at the primary disconnecting device
- metering equipment and security devices

Customer:

- all secondary voltage wire or a bus stub and installations
- duct/pull box structure on customer's property
- power transformer(s)
- primary voltage disconnecting device and fusing
- landscaping on private property

Conditions of Service

- Metering of this service will conform to metering requirements of Secondary Service Customers when only one transformer is installed. Where multiple transformers are installed Kitchener-Wilmot Hydro Inc. will install primary voltage metering at the ingress point.

- The customer's installation requires an Authorization for Connection from the Electrical Safety Authority.

3.4 Large User Class, Three-Phase, Primary Voltage, Transformation > 5,000kVA

Individual customers whose monthly measured maximum demand (kW) averaged over the most recent 12 consecutive months is equal to or greater than 5,000kW shall be classified as a Large Use Customer.

The installation of Customer owned transformation > 5,000 kVA requires a detailed engineering study to be completed by Kitchener-Wilmot Hydro Inc. to determine distribution system compatibility. The ability of Kitchener-Wilmot Hydro Inc. to connect this load and the associated costs will be provided to the customer in an Offer to Connect as set out in the Ontario Energy Board's Distribution System Code and this Conditions of Service document.

When applicable, the Customer will also be responsible for the cost to expand the Kitchener-Wilmot Hydro Inc. distribution system as outlined in section 2.1.2 Expansions / Offer to Connect.

3.5 Embedded Generation

3.5.1 General

This section applies to renewable and non-renewable embedded generators. Facilities are categorized according to size as set forth in the Distribution System Code, outlined in the following table:

Table 3.6

Embedded Generation Facility Classification	Name-plate Rated Capacity
Micro-Embedded Generation Facility	10 kW or less
Capacity Allocation Exempt Small Embedded Generation Facility	(a) 250 kW or less connected to a less than 15 kV line; and (b) 500 kW or less connected to a 15 kV or greater line; (c) does not include a Micro-Embedded Generation Facility.
Small Embedded Generation Facility	(a) 500 kW or less connected to a less than 15 kV line; and (b) 1 MW or less connected to a 15 kV or greater line; (c) does not include a Micro-Embedded Generation Facility.
Mid-sized Embedded Generation Facility	Name-plate rated capacity of 10 MW or less and: (a) more than 500 kW connected to a less than 15 kV line; and (b) more than 1 MW connected to a 15 kV or greater line.
Large Embedded Generation Facility	Greater than 10 MW

Section 3.5 does not apply to the connection or operation of an emergency backup generation facility. See Section 2.3.6 for the requirements of connecting or operating an emergency backup generator.

3.5.2 Connection Process

Kitchener-Wilmot Hydro Inc. has created a Generation Connection Overview which contains the following information:

- (a) the process for having a generation facility connected to the Kitchener-Wilmot Hydro Inc. distribution system, in compliance with the Distribution System Code, including any form necessary for the application;
- (b) information regarding any approvals from the ESA, the IESO, OEB, OPA, or a transmitter that are required before Kitchener-Wilmot Hydro Inc. will connect a generation facility to its distribution system;
- (c) the technical requirements for being connected to the Kitchener-Wilmot Hydro Inc. distribution system including the metering requirements; and
- (d) the standard contractual terms and conditions for being connected to the Kitchener-Wilmot Hydro Inc. distribution system.

The Generation Connection Overview, on-line applications, program details and technical requirements are posted on the Kitchener-Wilmot Hydro Inc. website at

<https://www.kwhydro.on.ca/en/residential/Customer-Owned-Generation.asp>

Kitchener-Wilmot Hydro Inc. requires all Customers wishing to connect embedded generation facilities to its distribution system to execute a Connection Agreement, in accordance with the OEB's Distribution System Code. Connection of embedded generators shall be provided where technically feasible. The cost sharing responsibilities of Kitchener-Wilmot Hydro Inc. and the Customer for the connection and related protections to ensure the safety of the public, employees and security of the system will be in accordance with the Distribution System Code. Furthermore, an Operating & Maintenance Agreement must be signed between Kitchener-Wilmot Hydro Inc. and the embedded generator, in accordance with the OEB's Distribution System Code.

Administrative and technical requirements can be found in the Distribution System Code ("DSC") Sections 6.2.5 through 6.2.30, at the Ontario Energy Board website (<https://www.oeb.ca/>).

3.5.3 Net Metering Program for an Embedded Generation Facility

Kitchener-Wilmot Hydro Inc., as a way to encourage conservation, supports eligible Customers wishing to participate in the Ontario Net Metering Program. Net metering is available to any Kitchener-Wilmot Hydro Inc. customer who generates electricity primarily for their own use. The following conditions must be met to be deemed an eligible Customer in the Net Metering program:

- the electricity generated is primarily for the Customers own use;
- the electricity is generated solely from a renewable energy source such as wind, water, solar or agricultural biomass;

- the electricity generated is conveyed to the Customer's own consumption point without reliance on the Kitchener-Wilmot Hydro Inc. distribution system.
- The on-site energy storage device installed by the Customer is allowed for Net Metering program.

To participate in the Net Metering program the Customer must contact Kitchener-Wilmot Hydro Inc. and meet all the parallel generation requirements for Connecting Micro-Generation Facilities (10 kW or less) or Other Generation Facilities (greater than 10 kW), as applicable to the generator size.

A bi-directional revenue meter is required to record energy flow in both directions. For generating facilities with combined nameplate capacity in excess of 50kW, an additional revenue meter (generator meter) is required to be connected in series with the generator.

Kitchener-Wilmot Hydro Inc. Policy for the Net Metering Program is posted, as amended from time to time, on the Kitchener-Wilmot Hydro Inc. website at

<https://www.kwhydro.on.ca/en/residential/Customer-Owned-Generation.asp>

3.5.4 Facilities Standby Charge

The facilities standby charge will apply to load displacement generating projects that require Kitchener-Wilmot Hydro Inc. to provide standby power in the event that the load displacement facility is offline. Under these circumstances, Kitchener-Wilmot Hydro Inc. is required to maintain sufficient capacity to supply the maximum demand of the host site being serviced.

Costs associated with reserving part of the distribution system to be ready to supply backup power to an Embedded Load Displacement Facility will be recovered in the form of a facilities standby charge.

The facilities standby charge will be applied to the coincident peak load delivered by the generator on a per kilowatt basis and billed monthly. For facilities without a generator revenue meter, facility standby charge will be applied to the potential backup load (generator nameplate capacity) on a per kilowatt basis and billed monthly whether backup power is taken or not.

3.5.5 Metering for Generation

The Customer shall consult with Kitchener-Wilmot Hydro Inc. for all embedded generator metering installations on the generation facility. The Customer who owns the generation facility shall pay full costs associated with such metering. The metering for Generation will be owned and maintained by Kitchener-Wilmot Hydro Inc.

The location of the embedded generator metering shall be adjacent to the existing service metering or at a different location if approved in advance by Kitchener-Wilmot Hydro Inc. See Section 2.3.7.1 for the general metering requirements.

Generation facilities that may receive energy from Kitchener-Wilmot Hydro Inc. distribution system, such as station usage of backup supply shall be placed in the appropriate rate class and billed for the energy consumed as a load customer.

The following tables are typical metering installations for embedded generators used by Kitchener-Wilmot Hydro Inc.

Table 3.7 - Metering for Embedded Generators

Generator Capacity	Generator Service Amp Rating	Service Voltage	Phase	Wire	Meter Requirements
≤ 50 kW	≤ 200A	120/240V	1	3	200 amp bi-directional meter with 4 Jaw socket meter base
	> 200A, ≤ 400A	120/240V	1	3	A 400 amp Transformer rated, self-contained bi-directional meter with mounting device.
	≤ 200 A	120/208V	1	3	200 amp bi-directional meter with 5 Jaw socket meter base
	≤ 200 A	120/208V	2 or 3	4	200 amp bi-directional meter with 7 Jaw socket meter base, disconnect switch required at both sides.
	> 200A, ≤ 400A	120/208V	1 - 3	4	Meter base to be 13 Jaw. See Section 2.3.7.2 Current Transformer Boxes.
> 50kW	-	-	3	4	Project specific, to be determined / approved by Kitchener-Wilmot Hydro Inc.

3.6 Embedded Wholesale Market Participant

Under the IESO “Market Rules for the Ontario Electricity Market”, Chapter 2, section 1.2.1, “No persons shall participate in the IESO-administered markets or cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid unless that person has been authorized by the IESO to do so”.

All Embedded Wholesale Market Participants, within the service jurisdiction of Kitchener-Wilmot Hydro Inc., once approved by the IESO, are required to inform Kitchener-Wilmot Hydro Inc. of their approved status in writing, 90 days prior to their participation in the Ontario Electricity market. A Wholesale Market Participant shall enter into an Embedded Wholesale Market Participant Agreement in a form acceptable to Kitchener-Wilmot Hydro Inc. Until such time as the Wholesale Market Participant executes such an Agreement with Kitchener-Wilmot Hydro Inc., the Wholesale Market Participant shall be deemed to have accepted and agreed to be bound by all of the terms and conditions of any operating agreement and schedule delivered to it from time to time by Kitchener-Wilmot Hydro Inc.

3.7 Embedded Distributor

An Embedded Distributor is a licensed distributor who is provided with electricity by Kitchener-Wilmot Hydro Inc.

All Embedded Distributors within the service jurisdiction of Kitchener-Wilmot Hydro Inc. are required to inform Kitchener-Wilmot Hydro Inc. of their status in writing 90 days prior to the supply of energy from Kitchener-Wilmot Hydro Inc. The terms and conditions applicable to the connection of an Embedded Distributor shall be included in the Embedded Distributor Agreement with Kitchener-Wilmot Hydro Inc.

An Embedded Distributor shall enter into an Agreement in a form acceptable to Kitchener-Wilmot Hydro Inc. Until such time as the Embedded Distributor executes such an Agreement with Kitchener-Wilmot Hydro Inc., the Embedded Distributor shall be deemed to have accepted and agreed to be bound by all of the terms and conditions of any operating agreement and schedule delivered to it from time to time by Kitchener-Wilmot Hydro Inc.

3.8 Unmetered Connections

Unmetered connections to Kitchener-Wilmot Hydro Inc.’s distribution facilities are permitted at the sole discretion of Kitchener-Wilmot Hydro Inc. Kitchener-Wilmot Hydro Inc. will determine the appropriate energy consumption and rate class to be billed to the Customer. All connection costs for the installation of un-metered services will be the responsibility of the Customer.

Unmetered connections are to be installed in accordance with the Conditions of Service as set out in this document and meet the requirements of the Ontario Electrical Safety Code.

Typical unmetered services include but are not limited to the following:

- Municipal Street Lighting
- Walkway Lighting
- Decorative Lighting
- Traffic Signals
- Bus Shelter Advertisements
- Communications Power Supplies
- Telephone Booths

3.8.1 Unmetered Load Customer Rights and Obligations

Unmetered load customers have the following rights and obligations:

- The rights to request information regarding estimated load and price data from Kitchener-Wilmot Hydro Inc.
- The rights to request changes to information on file with respect to their unmetered load.
- An obligation to provide Kitchener-Wilmot Hydro Inc. with the load data required and evidence to support the estimated data before any connection to the distribution system is made.

3.8.2 Unmetered Load Connection and Data Update Process

When Kitchener-Wilmot Hydro Inc. agrees to an unmetered load connection to its distribution system, the following applies.

3.8.2.1 New Connection

It is Kitchener-Wilmot Hydro Inc.'s intention to meter all new service connections. In cases where loads are small and non-variable, Kitchener-Wilmot Hydro Inc. at its sole discretion may permit connection of the load without a meter. The Customer shall follow the general requirements as outlined in Section 3.2.3. In addition to the general requirements, the Customer shall provide detailed manufacturer information and documentation with regard to electrical demand and expected hours of operation of the proposed unmetered load. Kitchener-Wilmot Hydro Inc. may require, at its sole discretion, that the Customer provides at its sole cost, a load study acceptable to Kitchener-Wilmot Hydro Inc. in order to determine energy consumption. The load study may be from a certified laboratory or in-field meter measurements. Where the customer has previously conducted a load study for similar equipment with another distributor, Kitchener-Wilmot Hydro Inc. will consider accepting the results in-lieu of further load study after detailed review.

3.8.2.2 Existing Connection

The unmetered load customer has an obligation to notify Kitchener-Wilmot Hydro Inc. of any change to the unmetered load. The Customer shall notify Kitchener-Wilmot Hydro Inc.'s Engineering Department prior to making any changes to existing equipment or adding new equipment that is supplied by the unmetered connection. The Customer shall provide detailed evidence and documentation to substantiate the requested changes. Kitchener-Wilmot Hydro Inc. may require, at its sole discretion that the Customer provides at its sole cost a load study acceptable to Kitchener-Wilmot Hydro Inc. in order to determine energy consumption. Where the customer has previously conducted a load study for similar equipment with another distributor, Kitchener-Wilmot Hydro Inc. will consider accepting the results in-lieu of further load study after detailed review. Kitchener-Wilmot Hydro Inc. reserves the right to convert an unmetered load to a metered load if an update to the equipment results in the characteristics of the existing load being modified (e.g. from non-variable to variable).

After verifying the updated unmetered load data, Kitchener-Wilmot Hydro Inc. will revise the customer billing data and communicate the changes to the customer. Each billing period, Kitchener-Wilmot Hydro Inc. will calculate the appropriate energy consumption based on the updated data that has been filed by the unmetered load customer. This will be calculated as the sum of the products of the quantity of each type of device multiplied by the agreed upon load attributed to such device. This calculated energy consumption will be used within Kitchener-Wilmot Hydro Inc.'s billing system and have the appropriate rates applied as per the currently effective rate order as approved by the Ontario Energy Board.

Other changes that may impact unmetered load customers such as cost allocation studies will be communicated to the customer in a timely manner via letter, email, Kitchener-Wilmot Hydro Inc.'s website, stakeholder sessions or bill insert.

3.8.3 Demarcation Points (Excluding Street Lighting)

The customer has ownership and maintenance responsibility for all equipment downstream of the demarcation point.

Overhead

Where the Customer's attachments are on Kitchener-Wilmot Hydro Inc.'s distribution poles, or where the Customer's structure is supplied by an overhead service line, the demarcation point is the top of the Customer's service mast.

Underground

Where the Customer's attachments are not on Kitchener-Wilmot Hydro Inc.'s distribution poles and the Customer's structure is supplied by an underground service cable, the demarcation point is the Customer's disconnect switch at the Customer's structure.

3.8.4 Demarcation Points – Street Lighting

The customer has ownership and maintenance responsibility for all equipment downstream of the demarcation point.

Overhead

Where the street light circuit is supplied from an overhead circuit, the demarcation points are; at the line side of the service entrance switch or relay for group-controlled lights and at the in-line fuse disconnect for individually controlled lights.

Underground

Where the street light circuit is supplied from an underground circuit, the demarcation point is at the line side of the service entrance switch or at the transformer secondary terminals.

3.8.5 Pole Attachments

Third Party Customers (including Canadian telecommunication carriers with wire line and wireless components) wishing to attach to poles owned by Kitchener-Wilmot Hydro Inc. are required to apply in writing to the Corporation for authorization or approval.

The Customer will enter into an agreement with Kitchener-Wilmot Hydro Inc. prior to installing any customer-owned wires or apparatus on poles or other equipment owned by Kitchener-Wilmot Hydro Inc. Kitchener-Wilmot Hydro Inc. reserves the right to refuse attachments to its poles.

3.9 Temporary Service Connections

Temporary service connections are to facilitate applications such as construction projects and outdoor shows, and are limited to one supply connection per property.

Temporary service connections will be surveyed every 12 months. Should the service still be required after the 12-month period, Kitchener-Wilmot Hydro Inc. will charge the temporary service customer all costs associated with any extension granted.

All costs to connect and remove the temporary service must be provided, in the form of a cash deposit, before connection. The Offer to Connect will specify if the deposit is a firm price, or an estimate which will be reconciled with the actual cost after the service is installed and a removal allowance applied to the final charge.

Temporary services are subject to the inspection procedures of the Electrical Safety Authority. Any disconnection requested by the Electrical Safety Authority will be done immediately with the customer responsible for all costs incurred by Kitchener-Wilmot Hydro Inc.

Section 4

Glossary of Terms

4 Section 4: Glossary of Terms

In this document:

“Accounting Procedures Handbook” means the handbook approved by the Board and in effect at the relevant time, which specifies the accounting records, accounting principles and accounting separation standards to be followed by the distributor;

“Act” means the Ontario Energy Board Act, 1998, S.O. 1998, C. 15, Schedule B;

“Affiliate Relationships Code” means the code, approved by the Board and in effect at the relevant time, which among other things, establishes the standards and conditions for the interaction between electricity distributors or transmitters and their respective affiliated companies;

“ancillary services” means services necessary to maintain the reliability of the IESO-controlled grid; including frequency control, voltage control, reactive power and operating reserve services;

“bandwidth” means a distributor’s defined tolerance used to flag data for further scrutiny at the stage in the VEE process where a current reading is compared to a reading from an equivalent historical billing period. For example, a 30 percent bandwidth means a current reading that is either 30 percent lower or 30 percent higher than the measurement from an equivalent historical billing period will be identified by the VEE process as requiring further scrutiny and verification;

“basic connection” means a new residential 120/240V, 200 amp. overhead, single-phase, secondary service including transformation capacity, standard revenue metering, 30 metres overhead conductor.

“Board” means the Ontario Energy Board;

“Central Metering Service” means a metering installation where instrument transformers are installed on the supply side of customer disconnects;

“Code” means the Distribution System Code;

“complex metering installation” means a metering installation where instrument transformers, test blocks, recorders, pulse duplicators and multiple meters may be employed;

“Conditions of Service” means the document developed by Kitchener-Wilmot Hydro Inc. in accordance with subsection 2.3 of the Distribution Systems Code that describes the operating practices and connection rules for the distributor;

“connection” means the process of installing and activating connection assets in order to distribute electricity to a customer;

“Connection Agreement” means an agreement entered into between a distributor and a person connected to its distribution system that delineates the conditions of the connection and delivery of electricity to that connection;

“connection assets” means that portion of the distribution system used to connect a customer to the existing main distribution system, and consists of the assets between the point of connection on a distributor’s main distribution system and the ownership demarcation point with that customer;

“consumer” means a person who uses, for the person’s own consumption, electricity that the person did not generate;

“Corporation Board” means the Board of Directors of Kitchener-Wilmot Hydro Inc.;

“customer” means a person that has contracted for or intends to contract for connection of a building. This includes developers of residential or commercial sub-divisions;

“demand meter” means a meter that measures a consumer’s peak usage during a specified period of time;

“demarcation point” this point is the demarcation of responsibility for ownership, repair and maintenance of electrical equipment used to service the property;

“Disconnect/Collection Trip” is a visit to a customer’s premises by an employee or agent of Kitchener-Wilmot Hydro Inc. to demand payment of an outstanding amount, or to shut off or limit distribution of electricity to the customer failing payment;

“disconnection” means a deactivation of connection assets that results in cessation of distribution services to a consumer;

“distribute”, with respect to electricity, means to convey electricity at voltages of 50 kilovolts or less;

“distribution losses” means energy losses that result from the interaction of intrinsic characteristics of the distribution network such as electrical resistance with network voltages and current flows;

“distribution loss factor” has the meaning described to it in the Retail Settlement Code;

“distribution services” means services related to the distribution of electricity and the services the Board has required distributors to carry out, for which a charge or rate has been approved by the Board under section 78 of the **Act**;

“distribution system” means a system for distributing electricity, and includes any structures, equipment or other things used for that purpose. A distribution system is comprised of the main system capable of distributing electricity to many customers and the connection assets used to connect a customer to the main distribution system;

“Distribution System Code” means the code, approved by the Board, and in effect at the relevant time, which, among other things, establishes the obligations of a distributor with respect to the services and terms of service to be offered to customers and retailers and provides minimum technical operating standards of distribution systems;

“distributor” means a person who owns or operates a distribution system;

“Distributor Consolidated Billing” means Kitchener-Wilmot Hydro Inc. will issue a bill to a Retailer Customer under this billing option. Kitchener-Wilmot Hydro Inc. is responsible for customer non-payment risk;

“Electricity Act” means the **Electricity Act, 1998**, S.O. 1998, c.15, Schedule A;

“Energy Competition Act” means the **Energy Competition Act, 1998**, S.O. 1998, c. 15;

“Electrical Safety Authority” or **“ESA”** means the person or body designated under the **Electricity Act** regulations as the Electrical Safety Authority;

“embedded distributor” means a distributor that is provided electricity by a host distributor. In this document, an embedded distributor may or may not be a Wholesale Market Participant;

“embedded generator” or **“embedded generation facility”** means a generator whose generation facility is not directly connected to the IESO-controlled grid but instead is connected to a distribution system;

“embedded load displacement generator” or **“embedded load displacement facility”** means generation installed behind the customer’s meter that is used to partially or fully replace the customer’s electricity needs and is connected to the distribution system. Excess generated electricity may be exported to the grid.

“embedded retail generator” means an embedded generator that settles through a distributor’s retail settlements system and is not a wholesale market participant;

“embedded wholesale consumer” means a consumer who is a wholesale market participant whose facility is not directly connected to the IESO-controlled grid but is connected to a distribution system;

“embedded wholesale generator” means an embedded generator that is a wholesale market participant;

“emergency” means any abnormal system condition that requires remedial action to prevent or limit loss of a distribution system or supply of electricity that could adversely affect the reliability of the electricity system;

“emergency backup” means a generation facility that has a transfer switch that isolates it from a distribution system;

“enhancement” means a modification to an existing distribution system that is made for purposes of improving system operating characteristics such as reliability or power quality or for relieving system capacity constraints resulting, for example, from general load growth;

“expansion” means an addition to a distribution system in response to a request for additional customer connections that otherwise could not be made; for example, by increasing the length of the distribution system;

“four-quadrant interval meter” means an interval meter that records power injected into a distribution system and the amount of electricity consumed by the customer;

“generate” with respect to electricity, means to produce electricity or provide ancillary services, other than ancillary services provided by a transmitter or distributor through the operation of a transmission or distribution system;

“generation facility” means a facility for generating electricity or providing ancillary services, other than ancillary services provided by a transmitter or distributor through the operation of a transmission or distribution system, and includes any structures, equipment or other things used for that purpose;

“generator” means a person who owns or operates a generation facility;

“geographic distributor,” with respect to a load transfer, means the distributor that is licensed to service a load transfer customer and is responsible for connecting and billing the load transfer customer;

“good payment history” where a residential customer has been serviced by an electricity or gas distributor in Canada for 12 consecutive months, and has not received more than 1 disconnection notice, has not had more than 1 pre-authorized payment or cheque returned due to insufficient funds, or, a "Disconnect/Collection Trip" has not occurred. Where a non-residential customer in a <50 kW demand rate class has been serviced by an electricity or gas distributor in Canada for 5 years and has not received more than 1 disconnection

notice, has not had more than 1 pre-authorized payment or cheque returned due to insufficient funds, or, a "Disconnect/Collection Trip" has not occurred. Where a non-residential customer in a >50 kW demand, or >5,000 kW demand rate class has been serviced by an electricity or gas distributor in Canada for 7 years, and has not received more than 1 disconnection notice, has not had more than 1 pre-authorized payment, or cheque returned due to insufficient funds, or, a "Disconnect/Collection Trip" has not occurred. For all rate classes, some of the service must have been within the last 24 consecutive months;

“good utility practice” means any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry in North America during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgement in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good practices, reliability, safety and expedition. Good utility practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in North America;

“holiday” means a Saturday, Sunday, statutory holiday, or any day as defined in the Province of Ontario as a legal holiday;

“host distributor” means the distributor who provides electricity to an embedded distributor;

“IESO” means the Independent Electricity System Operator established under the Electricity Act;

“IESO-Controlled Grid” means the transmission systems with respect to which, pursuant to agreements, the IESO has authority to direct operation;

“interval meter” means a meter that measures and records electricity use on an hourly or sub-hourly basis;

“Large Volume Customer” is a general service customer with monthly demand in a 12 month period greater than 50 kW;

“load transfer” means a network supply point of one distributor that is supplied through the distribution network of another distributor and where this supply point is not considered a wholesale supply or bulk sale point;

“load transfer customer” means a customer that is provided distribution services through a load transfer;

“Market Rules” means the rules made under section 32 of the **Electricity Act**;

“Measurement Canada” means the Special Operating Agency established in August 1996 by the **Electricity and Gas Inspection Act**, 1980-81-82-83, c. 87, and Electricity and Gas Inspection Regulations (SOR/86-131);

“meter service provider” means any entity that performs metering services on behalf of a distributor;

“meter installation” means the meter and, if so equipped, the instrument transformers, wiring, test links, fuses, lamps, loss of potential alarms, meters, data recorders, telecommunication equipment and spin-off data facilities installed to measure power past a meter point, provide remote access to the metered data and monitor the condition of the installed equipment;

“metering services” means installation, testing, reading and maintenance of meters;

“MIST meter” means an interval meter from which data is obtained and validated within a designated settlement timeframe. MIST refers to “Metering Inside the Settlement Timeframe;”

“MOST meter” means an interval meter from which data is only available outside of the designated settlement timeframe. MOST refers to “Metering Outside the Settlement Timeframe;”

“Ontario Energy Board Act” means the **Ontario Energy Board Act, 1998**, S.O. 1998, c.15, Schedule B;

“operational demarcation point” means the physical location at which a distributor’s responsibility for operational control of distribution equipment including connection assets ends at the customer;

“ownership demarcation point” means the physical location at which a distributor’s ownership of distribution equipment including connection assets ends at the customer;

“performance standards” means the performance targets for the distribution and connection activities of the distributor as established by the Board pursuant to the Act and in the Rate Handbook;

“physical distributor,” with respect to a load transfer, means the distributor that provides physical delivery of electricity to a load transfer customer, but is not responsible for connecting and billing the load transfer customer directly;

“point of supply,” with respect to an embedded generator, means the connection point where electricity produced by the generator is injected into a distribution system;

“rate” means any rate, charge or other consideration, and includes a penalty for late payment;

“Rate Handbook” means the document approved by the Board that outlines the regulatory mechanisms that will be applied in the setting of distributor rates;

“Regulations” means the regulations made under the **Act or the Electricity Act**;

“retail”, with respect to electricity means,

- a) to sell or offer to sell electricity to a consumer
- b) to act as agent or broker for a retailer with respect to the sale or offering for sale of electricity, or
- c) to act or offer to act as an agent or broker for a consumer with respect to the sale or offering for sale of electricity.

“Retail Settlement Code” means the code approved by the Board and in effect at the relevant time, which, among other things, establishes a distributor’s obligations and responsibilities associated with financial settlement among retailers and customers and provides for tracking and facilitating customer transfers among competitive retailers;

“retailer” means a person who retails electricity;

“Retailer Consolidated Billing” means Kitchener-Wilmot Hydro Inc. will not issue a bill to a Retailer Customer under this billing option. The Retailer is responsible for issuing the bill to the customer and for customer non-payment risk;

“Satisfactory Credit Check” means a payment history from a major credit reporting agency showing prompt payment and no bankruptcies, judgements or delinquencies for the required time period of the relevant customer rate class;

“secondary service” with respect to a distributor, means voltage supplies from the distributors system is less than 750 volts;

“service area,” with respect to a distributor, means the area in which the distributor is authorized by its license to distribute electricity;

“Small Volume Customer” means residential customers and general service customers with monthly demand in a 12 month period of 50 kW or less;

“Standard Supply Service” means that all existing Kitchener-Wilmot Hydro Inc. customers are Standard Supply Service (SSS) customers until Kitchener-Wilmot Hydro Inc. is informed by a Retailer licensed by the Ontario Energy Board of their switch to a competitive electricity supplier. Kitchener-Wilmot Hydro Inc. will supply SSS customers’ electricity at wholesale market prices;

“total losses” means the sum of all energy losses including distribution system losses, supply facility losses and unaccounted for energy;

“transmission system” means a system for transmitting electricity, and includes any structures, equipment or other things used for that purpose;

“Transmission System Code” means the code, approved by the Board, that is in force at the relevant time, which regulates the financial and information obligations of the Transmitter with respect to its relationship with customers, as well as establishing the standards for connection of customers to, and expansion of a transmission system;

“transmit”, with respect to electricity, means to convey electricity at voltages of more than 50 kilovolts;

“transmitter” means a person who owns or operates a transmission system;

“unaccounted for energy” means all energy losses that cannot be attributed to distribution losses. These include measurement error, errors in estimates of distribution losses and unmetered loads, energy theft and non-attributable billing errors;

“unmetered loads” means electricity consumption that is not metered and is billed based on estimated usage;

“validating, estimating and editing (VEE)” means the process used to validate, estimate and edit raw metering data to produce final metering data or to replicate missing metering data for settlement purposes;

“wholesale buyer” means a person that purchases electricity or ancillary services in the IESO-administered markets or directly from a generator;

“wholesale market participant”, means a person that sells or purchases electricity or ancillary services through the IESO-administered markets;

“wholesale settlement cost” means costs for both competitive and non-competitive services billed to a distributor by the IESO or a host distributor, or provided by an embedded retail generator or by a neighbouring distributor;

“wholesale supplier” means a person who sells electricity or ancillary services through the IESO-administered markets or directly to another person, other than a consumer.

Section 5: Appendices

5 Section 5: Appendices

Appendix “A”: Service Design Application Form

For the New Account

Application, see

**Kitchener-Wilmot Hydro Inc.'s
website**

www.kwhydro.ca



ENGINEERING DEPARTMENT
T: 519-745-4771
F: 519-745-0643

SERVICE DESIGN APPLICATION FORM

* Mandatory Fields

Property Owner / Developer:

Company Name	*	<input type="text"/>			
Contact	*	<input type="text"/>			
Address:	Civic #:	*	<input type="text"/>	Unit #:	<input type="text"/>
	Street Name:	*	<input type="text"/>		
	City/Twp.:	*	<input type="text"/>		
	Province:	*	<input type="text" value="ON - Ontario"/>		
	Postal Code:	*	<input type="text"/>		
Phone #	Cell Phone:		<input type="text"/>		
	Business Phone:	*	<input type="text"/>	ext.	<input type="text"/>
	Fax:	*	<input type="text"/>		
E-mail:	<input type="text"/>				

Consultant:

Company Name	<input type="text"/>				
Contact	<input type="text"/>				
Address:	Civic #:		Unit #:	<input type="text"/>	
	Street Name:	<input type="text"/>			
	City/Twp.:	<input type="text"/>			
	Province:	<input type="text" value="ON - Ontario"/>			
	Postal Code:	<input type="text"/>			
Phone #	Cell Phone:	<input type="text"/>			
	Business Phone:	<input type="text"/>	ext.	<input type="text"/>	
	Fax:	<input type="text"/>			
E-mail:	<input type="text"/>				

Electrical Contractor:

Company Name	<input type="text"/>		
Contact	<input type="text"/>		
Address:	Civic #:	<input type="text"/>	Unit #: <input type="text"/>
	Street Name:	<input type="text"/>	
	City/Twp.:	<input type="text"/>	
	Province:	<input type="text" value="ON - Ontario"/>	
	Postal Code	<input type="text"/>	
Phone #	Cell Phone:	<input type="text"/>	
	Business Phone:	<input type="text"/>	ext. <input type="text"/>
	Fax:	<input type="text"/>	
E-mail:	<input type="text"/>		

Service Information:

1. Type of Building:	<input type="text"/>		
2. Address of site:	Civic #:	<input type="text"/>	Unit #: <input type="text"/>
	Street Name:	<input type="text"/>	
	City/Twp.:	<input type="text"/>	
	Postal Code	<input type="text"/>	
3. Size of electrical service required:	* <input type="radio"/> Single-Phase <input type="radio"/> Three-Phase		
	* <input type="text"/>	Amps	<input type="text"/> Volts
4. Estimated Maximum Demand:	* <input type="text"/> kVA		
5. Estimated date of service connection:	* <input type="text"/>		
6. Number of meters required for the new service:	* <input type="text"/>		
7. Overhead / Underground service:	* <input checked="" type="radio"/> Overhead <input type="radio"/> Underground		
8. Drawings -	* A Site Plot Plan		
	* A single line diagram of the proposed service indicating provisions for metering		
Calculations -	* Servicing Load Calculations		

Note: We will require an electronic copy of these drawings. The files can be e-mailed to me at jtheriault@kwhydro.ca. These files are to be sent as an AutoCAD Release 2012 or older, Dwg. or Dxf. Files - required. I can receive files up to 10 Meg in size.

Appendix “B”: Schedule of Distribution Rates and Specific

Service Charges

For latest approved OEB rates,

see

Kitchener-Wilmot Hydro Inc.'s

website

www.kwhydro.ca

Appendix “C” : Schedule of Other Regulated Rates

For latest approved OEB rates,

see

Kitchener-Wilmot Hydro Inc.'s

website

www.kwhydro.ca

Appendix “D” : Summary of Changes for Latest Revision

Updates to Conditions of Service Fifth Issue

Kitchener-Wilmot Hydro Inc. has updated its Conditions of Service document to address clarity of information and to incorporate minor changes.

The following is a summary of the key changes to the document and where to find them.

Section 1: Introduction

1.5 Contact Information

The office hours were adjusted to reflect current hours of operation.

Section 2: Distribution Activities (General)

2.1.1 Building That Lies Along

Clarification of the definition of a building that “lies along” the distribution system.

2.2.2 Disconnection & Reconnection – Account Arrears

Clarification was made regarding notification and disconnection due to account arrears, including the dates that a service could be disconnected.

2.3.2.2.4 Outage Reporting

New section – details when KWHI may update customers or news organizations on outages and restoration efforts. This section lists the website address of KWHI's outage map.

2.3.6 Back-up Generators

Added requirements for meter base plug-in transfer device and restrictions as to who can utilize the devices.

2.4.1 Service Connection

Deleted a section detailing the regulated charges for retail services.
Deleted a section that stated RRRP charges are set by the OEB.

2.4.3.1 Account Security Deposits

Wording changed to reflect the maximum amount that may be collected as a security deposit. Removed references to bi-monthly billing and Retailer Consolidated Billing.

2.4.4 Billing

Removed reference to bi-monthly billing.

2.4.5 Payments

Added clarity to acceptable forms of cash that may be received.
Added credit/debit cards accepted by collectors on a Disconnection trip.

2.5 Customer Information

Condensed section to remove irrelevant information.

Section 3: Customer Class Specific

3.1.1 Residential Service Connection to a Building that Lies Along an Existing Distribution System

The total maximum amperage of all services connected for a central metering service is increased to 600 amperes from 400 amperes.

3.1.1.1.2 Overhead Secondary Service, 400 amp or Central Metered

When a Central Metering Service Stack is used, the combined rating of all the Customer's service equipment has been increased to "shall not exceed 600 amps" from 400 amps.

3.1.1.1.3 Overhead Primary Voltage Service, Pole Mounted Utility Owned Transformer

Added KWHI is responsible for the ownership and Maintenance of primary voltage disconnect and protective devices (fuse and surge arrester).

3.1.1.1.4 Overhead Primary Voltage Services, Utility Owned Pad Mounted Transformer

Added KWHI is responsible for the ownership and Maintenance of primary voltage disconnect and protective devices (fuse and surge arrester).

3.3.5.2 Overhead Primary Voltage Service, Utility Owned Transformation 300 up to 1500 kVA (Radial Feed)

Added as a Condition of Service that the transformer must be pad-mounted or installed in above grade vault.

3.5.3 Net Metering Program for an Embedded Generation Facility

Added a requirement that the energy Storage device installed by the customer must be allowed for the Net Metering Program. Add a requirement for generating facilities with a combined nameplate capacity in excess of 50kW an additional revenue meter is required to be connected in series with the generator.

3.5.4 Facilities Standby Charge

Clarification as to the calculation of the charge added to section. Changed Embedded Generator to Embedded Load Displacement Facility.

Appendix "A"

New Account Application was removed and instead directed to KWHI's website.