

## NT Power NTRZ Conditions of Service Reference Documents:

1. COS-230-04 – “Standard Voltage Offerings”
2. Appendix ‘B’ – “Demarcation Points & Charges for Connection Assets”

<p style="text-align: center;"><b>Newmarket-Tay Power Distribution Ltd.</b></p> <p style="text-align: center;"><b>Conditions of Service</b></p>	<p><b>Number:</b> NT POWER COS-230-04</p> <p><b>Issue Date:</b> July, 2007</p> <p><b>Next Review Date:</b> February, 2020</p>
<p style="text-align: center;"><b>Standard Voltage Offerings</b></p>	

**1. Preamble**

Newmarket-Tay Power Distribution Ltd. (NT POWER) provides various voltages to *Consumers* based on their supply requirements and availability. This section outlines both the primary and secondary voltages that are available.

**2. Primary Voltage**

The primary voltage to be used will be determined by NT POWER for both NT POWER owned and *Consumer-owned substations*. The primary voltage will be 44,000V, delta, three phase, three-wire system, **or** 13,800/8000V, grounded wye, three phase, four-wire system in the Newmarket service area and 8,320/4800V, grounded wye, three phase, four-wire system in the Tay service area.

*Electrical services* with capacity rated at 500 KVA or less are serviced from the 13.8KV system or 8.32KV system, as appropriate. *Electrical services* with capacity rated greater than 500 KVA are fed from the 44 KV system and require a *Consumer-owned substation*.

**3. Secondary Voltage**

13.8 KV and 8.32KV Distribution Systems

Secondary voltages will normally be 120/240V single phase, 120/208V three phase, **or** 600/347V, three phase.

44 KV Distribution System

Secondary voltage will normally be 120/208V **or** 600/347V three phase, four wire wye.

**4. Limit of Supply**

The actual voltage to be used governs the limit of supply capacity for any *Consumer*.

**4.1** 13.8 KV and 8.32KV Distribution Systems - Overhead

General guidelines for supply from existing 13.8 KV overhead street circuits are as follows:

- (i) 120/240V, single phase, up to 75 kVA *demand* load, or
- (ii) 600/347V, three phase, four wire up to 80 kVA *demand* load, or
- (iii) at both 120/240V, single phase, and 600/347V, three phase, up to 100 kVA sum total *demand* load, or
- (iv) 208/120V, three phase, up to 100 kVA *demand* load,

New or upgraded *electrical services* that cannot be adequately serviced from existing overhead transformer banks must be serviced underground.

**4.2** 13.8 KV and 8.32KV Distribution Systems – Underground (Site Specific)

Where a site specific transformer exist or is planned on *private property*;

- (i) 120/240V, single phase, supply is available up to 167 kVA *demand* load, or
- (ii) 208/120V, three phase, four wire, supply is available for loads up to 500 kVA *demand* load, or
- (iii) 600/347V, three-phase, four-wire, supply is available for loads up to 500 kVA *demand* load,

**4.3** 13.8 KV and 8.32KV Distribution Systems - Underground (Public Property)

Where a transformer for common servicing is located on public property, 120/240V, single phase, supply is available up to 100 kVA *demand* load.

**4.4** 44 KV Distribution System

Services rated at greater than 500 kVA *demand* load and less than 30 MVA shall require a 44KV *Consumer-owned substation*.

**APPENDIX 'B'**  
**Demarcation Points & Charges for Connection Assets**  
**(NHLCOS – 210 – 01, NHLCOS – 210 - 02)**

**Residential – Single Service**

<b>Service Type</b>	<b>Ownership Demarcation Point</b>	<b>Standard Allowance</b>	<b>Basic Connection Fee</b>	<b>Variable Connection Fee</b>	<b>Additional Services Fee</b>
Overhead (Not requiring individual transformation facilities)	Top of <i>Consumer's</i> service mast.	Equivalent credit for up to 30m O/H service line from Distributor's supply pole or lines, transformation equipment based on Class average consumption and installation.	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL
Underground (Not requiring transformation facilities on customer's property)	Line side of individual <i>residential service</i> meter base.	Equivalent credit for up to 30m O/H service line from Distributor's supply pole or lines, transformation equipment based on Class average consumption and installation.	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL
Underground (Requiring transformation facilities on customer's property)	Load side of primary fused load break switch. Transformer owned by Distributor.	Equivalent credit for up to 30m O/H service line from Distributor's supply pole or lines, transformation equipment based on Class average consumption and installation.	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL

**Residential – Site Plan Development**

<b>Service Type</b>	<b>Ownership Demarcation Point</b>	<b>Standard Allowance</b>	<b>Basic Connection Fee</b>	<b>Variable Connection Fee</b>	<b>Additional Services Fee</b>
Underground Secondary Service from transformer to meter base.	Line side of individual unit/dwelling meter bases.	None	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL
Underground <i>expansion</i> to <i>distribution system</i> .	Line side of individual unit/dwelling meter bases.	None	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL

**Residential – Subdivision Agreement**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Underground Secondary Service from transformer to meter base.	Line side of individual residential service meter bases.	None	See Appendix C	Actual costs for connection assets and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL
Underground expansion to distribution system.	Line side of individual residential service meter bases.	None	See Appendix C	Actual costs for connection assets and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL

**General Service Less than 50 kW – Single Service**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Overhead	Top of Consumer's service mast	None	See Appendix C	Actual costs for connection assets and installation beyond Basic Connection Fee.	
Underground	Secondary bushings of padmount transformer	None	See Appendix C	Actual costs for connection assets and installation beyond Basic Connection Fee.	

**General Service 50 kW to 500 kW – Site Plan Development**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Underground	Secondary bushings of padmount transformer	None	See Appendix C	Actual costs for connection assets including transformer (located on customer's property), vault, primary supply cables, switches and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL. Changes to existing NHL plant required to service customer.

**General Service 501 kW to 5000 kW – Site Plan Development, Consumer Owned 44kV Substation**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Overhead	Line side of <i>Consumer's</i> 44kV substation terminal pole	None	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Changes to existing NHL plant required to service customer.

**General Service Subdivision**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Overhead expansion of distribution system	Secondary bushings of padmounted transformer OR Line side of <i>Consumer's</i> 44kV substation terminal pole.	None	See Appendix C	N/A	Additional or redesign due to changes in initial proposal and associated re-engineering and re-inspections by NHL. Additional 44kV or 13.8kV circuits.

**Street Lighting**

Service Type	Ownership Demarcation Point	Standard Allowance	Basic Connection Fee	Variable Connection Fee	Additional Services Fee
Overhead Single Service	Tap connection at base of luminaire mounting arm or bracket	None	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL
Underground Single Service	Tap connection in streetlight pole hand-hole.	None	See Appendix C	Actual costs for <i>connection assets</i> and installation beyond Basic Connection Fee.	Additional or redesign due to changes in initial proposal and associated re-inspections by NHL

## NT Power MRZ Conditions of Service Reference Document:

1. Section 3.3 – General Service (Above 50kW)

Provision for metering shall be inspected and approved by the Distributor prior to connection.

The Distributor or Distributor-approved Contractor generally installs all services. All work done shall be as per the specifications of the Distributor and subject to inspection by the Distributor.

*(Refer to section [2.1.4](#) for further inspection details)*

### **3.3 General Service (Above 50 kW)**

#### **3.3.1 General**

This section refers to the supply of electrical energy to General Service Customers requiring a connection with a connected load greater than 50 kW.

#### **3.3.2 Early Consultation**

Detailed regulations cannot be stated which would be applicable to all cases, therefore the Owner will consult with the Distributor in the early planning stages to ascertain the Distributors' requirements.

The Owner shall supply a completed [Electrical Planning Requirements Form](#) to the Distributor well in advance of installation commencement to allow the Distributor time for proper planning, ordering of equipment etc.

#### **3.3.3 Basic Connection Charge**

All costs attributed to the connection of a new General Service customer (Above 50 kW) shall be recovered either as part of the Distributor's revenue requirements or through a basic connection charge to the customer.

#### **3.3.4 Variable Connection Charge**

All costs associated with the installation of connection assets shall be subject to a "variable connection charge". The distributor may recover this amount from a customer through a connection charge or equivalent payment. If an expansion of the distribution system is required to facilitate a connection, the LDC may need to perform an Economic Evaluation to establish the capital contribution required from the Customer. The Customer should review the attached [Distribution Connection Process](#) for further information.

#### **3.3.5 Point of Demarcation**

In all cases the final [Demarcation Point](#) will be the decision of the Distributor.



The Customer must obtain a Demarcation Point Location from the Distributor before proceeding with the installation of any service. Failure to do so may result in the Demarcation Point having to be relocated at the Customer's expense.

Maintenance of the portion of the Primary Service or Secondary Service owned by the Distributor includes repair and like for-like replacement of a wire or cable that has failed irreparably. The Customer is responsible for all civil work, supports, vegetation and landscaping associated with any such repair or replacement of the portion of Secondary Service owned by the Distributor.

The Distributor shall perform the maintenance or replacement of all underground looped cables that form part of the Distribution plant circuits. Following maintenance, surface restoration by the Distributor will include only soil, sod, gravel or asphalt.

Where damage can be shown to be the Owner's liability, maintenance and repair are at the Owners' expense

The Distributor reserves the right to direct the operations of any customer owned switchgear connected to the distribution system including those located beyond the point of demarcation.

### **3.3.5.1 Secondary Service Connections**

A General Service Customer [Demarcation Point](#) for customers above 50 kW is at the secondary side of the transformer, or as otherwise set by the distributor, beyond which the customer bears full responsibility for installation and maintenance.

In some instances, where it is in the best interest of the operation of the distribution system, the Distributor may establish the Delivery point at the top of stack for overhead services or at the meter base for underground services.

The location of the service entrance, routing of duct banks and all other works will be established through consultation with the Distributor. Failure to comply may result in relocation of the service plant at the Owner's expense.

The Demarcation Point might be located on an adjacent property. In such cases, a registered easement must exist.

### **3.3.5.2 Primary Service Connections**

For GS > 50 kW class customers, an electrical requirement in excess of 300 kVA may require a customer owned substation. In some instances primary metering may be required. (Note: 300 kVA is the threshold for a GS > 50 kW customer class).

In General, the Demarcation Point for a General Service Customer with a primary connection is on the primary side of the transformer at the first available distributor owned point of isolation, or as otherwise set by the distributor. This delivery point might be located on an adjacent property from which the

Distributor has an authorized easement. In all cases the final Demarcation Point will be the decision of the Distributor.

The location of the service entrance, termination poles, routing of duct banks, metering facilities, and all other works will be established through consultation with the Distributor. Failure to comply may result in relocation of the service plant at the Owner's expense.

In some circumstances the owner may be required to construct a private pole line. Primary conductors will be terminated complete with cut-out(s) at the Demarcation Point by the Distributor at the owners' expense.

Where a private pole line is to be constructed by the Owner with an approved contractor, this shall be constructed to the ESA and the Distributors' requirements.

Where the customer wishes an underground supply, the customer shall supply and install the underground cables and termination pole complete with primary switch, fuses and lightning arresters. The installation shall be subject to ESA inspection and specific approval of the Distributor. The customer owned termination pole must comply with items as prescribed by the Distributor.

At the Distributors' discretion, the customers' underground service may be connected to a termination pole owned by the distributor. In such cases, the Distributor shall supply and install at the customers expense, any required primary switch, fuses, and lightning arrestors.

### **3.3.6 Supply Voltage**

A General Service building is supplied at one service voltage per land parcel. Depending upon the location of the building the supply voltage will be one of the following:

- *120/240 Volts 1 Phase 3 Wire*
- *120/208 Volts 3 Phase 4 Wire*
- *347/600 Volts 3 Phase 4 Wire*

Depending upon the location of the building Primary supplies to transformers and Customer owned Sub-Stations will be one of the following as determined by the Distributor:

- *2,400/4,160 Volts 3 phase 4 wire*
- *4,800/8,320 Volts 3 phase 4 wire*
- *7,200/12,400 Volts 3 phase 4 wire*
- *8,000/13,800 Volts 3 phase 4 wire*
- *16,000/27,600 Volts 3 phase 4 wire*
- *44,000 Volts – 3 Phase 3 Wire*

The Owner shall make provision to take delivery at one of the nominal utilization voltages as specified by the Distributor. The Owner shall obtain prior approval from the Distributor for the use of any specific voltage at any specific location.