

Northpower Electricity Network Standard

Conditions for Contractors Constructing Services

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Table of Contents

| | |
|---|---|
| 1. Introduction | 2 |
| 2. References..... | 2 |
| 3. Definitions | 2 |
| 4. Authorisation to Undertake Work on Northpower's Network..... | 3 |
| 5. Service Construction | 3 |
| 5.1. General Requirements..... | 3 |
| 5.2. Excavating up to Pillars and Poles..... | 3 |
| 6. Electrical Isolation | 5 |
| 7. Metering..... | 5 |
| 8. Connection to the Network and Livening..... | 5 |
| 9. Inspections and Audits | 5 |

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Document Purpose

This standard details Northpower Networks requirements and standards for contractors constructing services to be connected to Northpower's electricity network.

1. Introduction

The purpose of this document is to define the Network standards and minimum requirements by which services may be constructed and connected to the Northpower Electricity Network. This document sets out policy for service construction. Specific detail of engineering design and materials to be used are contained in other documents within the Electricity Network Standards Manual. Northpower Network will not allow connection of any service for which these minimum requirements have not been met and or where such connection is considered to put the integrity of the Network at risk.

2. References

| Reference | Details |
|--------------|---|
| ENS 5.1.10 | New Service Connections |
| ENS 5.2.30 | Streetlight Installation and Replacement |
| ENS 5.2.36 | Supply Options for Low Voltage Customers |
| EOP 2.4.2 | Working near Lines and poles (to be written) |
| EOP 2.4.5 | Authorisations Issued to Outside Contractors |
| ENS 1.6.5.1 | NZECF 34 NZ Electrical Code of Practice for Electrical Safe Distances |
| Plan 2y138s1 | Duct Installation Verification |

3. Definitions

- **Certificate of Compliance** has the meaning as defined in the Electricity Regulations.
- **Connected** means the service has been connected to the Network but not energised.
- **Connection Point** or point of connection are the fuses where the service main is connected to the Network
- **Contractor** means a person or company which undertakes work for another party.
- **Corridor Access Request (CAR)** means an application to the roading authority to carry out work within the road corridor.
- **Easement** means a surveyed description in the form of a plan and accompanying documentation which has been legally registered against a Certificate of Land Title.
- **Livened** means the service has been energised at the design voltage.
- **Permanent disconnection** means the physical disconnection of the service from the Network line connection including the removal of all metering and equipment that is the property of Northpower.
- **Point of Supply** has the meaning as set out in the Electricity Amendment Act 2001.
- **Restriction for Excavating Near Poles** is provided by Northpower following a satisfactory stability assessment of the pole and provides permission for a contractor to excavate up to a pole.
- **Service Main** means an electricity line supplying a consumer (s) which will not become Northpower owned. This can be HV and/or LV lines.

- **Temporary disconnection** means the opening of an isolation device or fuse (s) to de energise the consumer's installation and premise.
- **Works** means an electricity line supplying a consumer (s) which will become Northpower owned.

4. Authorisation to Undertake Work on Northpower's Network

Only Contractors who have an appropriate authorisation, from Northpower, for the work to be undertaken, have authority to work on any Network reticulation or equipment. The conditions for all such access to the Network must be complied with before any work is undertaken. However, a Contractor who does not have authorisation may install privately owned Service Mains up to the point of supply but not into the supply pillar or cabinet or up the supply pole.

Northpower maintains a register of all persons who have authorisation to work on the Northpower Network. Specific details are documented and notified to authorised persons. Refer to the Operations Manual OM 2.4.5 Authorisations Issued to Outside Contractors.

5. Service Construction

5.1. General Requirements

The Contractor will ensure that the following Network requirements have been met:

- Network capacity is sufficient
- A connection point is available
- The correct connection point is utilised
- The correct phasing is utilised
- Network isolation equipment is available
- Provision made for installation of metering and control equipment
- Voltage drop is within required limits
- Ownership of all parts of the service is clear
- Legal access to the network

The contractor and the construction of the service must comply with the requirements of the following and any amendments:

- Northpower's Electrical Network Standards Manual
- AS/NZS 3000 Electrical Installations (Australian & NZ wiring rules)
- NZ Electrical Codes of Practice
- Electricity (Safety) Regulations
- Electricity Act 1992
- Roothing Authority Requirements (District Council or NZ Transport Authority)

The Contractor must provide or arrange confirmation that all requirements have been met before the service can be connected to Northpower's network.

5.2. Excavating up to Pillars and Poles

A contractor may excavate up to the pillar, cabinet or pole (subject to restrictions) that has the connection point (fuses) and then Northpower, an authorised contractor or contractor under Northpower supervision can then bring the cable or duct into the pillar or cabinet, or run the cable up the pole.

A contractor may excavate within the road corridor from the property boundary directly out to the connection point provided the distance is less than 10 meters without obtaining a specific Corridor Access Request.

The contractor should obtain a Corridor Access Request from the roading authority if the connection point is more than 10 meters from the boundary or if the service cable is to be laid along the road.

When digging within 450 mm of buried power cables, pillars or other underground services trenches are to be hand dug.

If digging a trench less than 300 mm deep and 300 mm wide close to a pole there are no restrictions provided that the cable is in a duct encased in concrete.

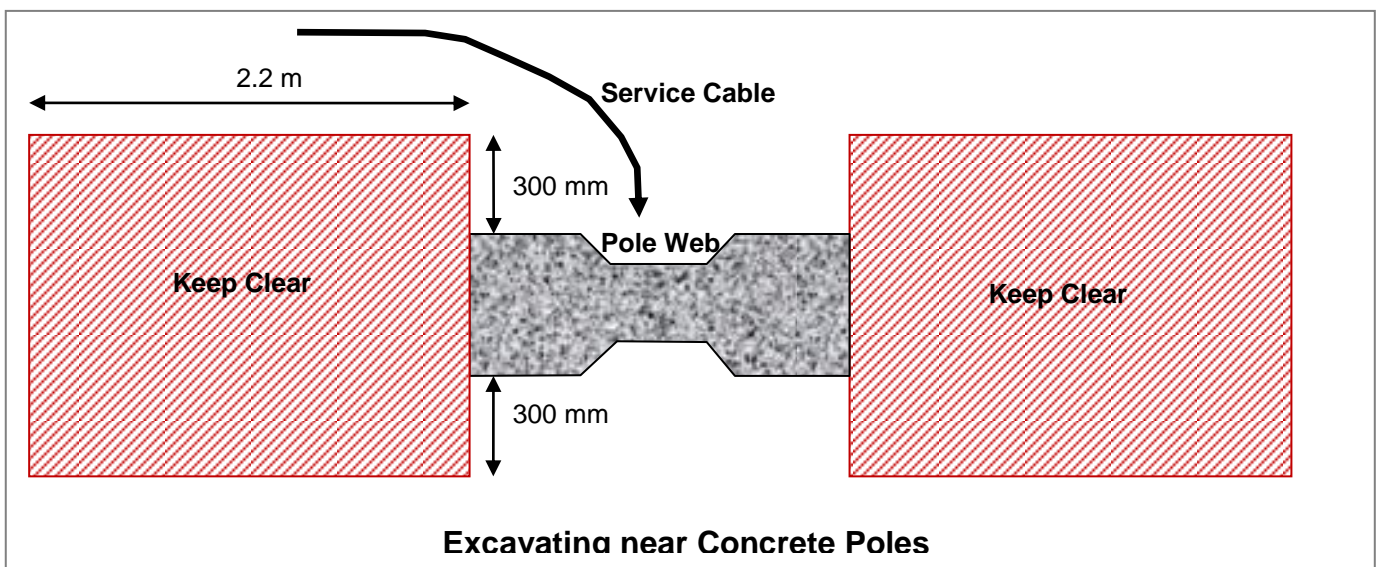
When digging within 2.2 meters of a power pole at a depth of greater than 300 mm a **Restriction for Excavating near Poles** is to be obtained from Northpower and the following requirements are also to be met:

- Ensure that excavation of the trench will not destabilise the pole
- The trench is to have a maximum width of 300 mm
- The cable is to be buried to a minimum depth of 500 mm
- The trench should have a maximum depth of 750 mm (recommended depth is 600 mm)
- The trench is to be dug up to the web of concrete poles (in some cases the approach direction may be specified)
- Keep clear of the area around the ends of concrete pole within 300 mm to the side and 2.2 m to the ends (refer to diagram)
- Wood poles should be approached from a direction where there is no pull from overhead line. i.e. avoid approaching from the same direction as any attached overhead lines.
- Any additional requirements specified in the Restriction for Excavating near Poles.

The standard layout for ducts installed to poles and pillars is shown on plan 2Y138s1 Duct Installation Verification. Ducts should be laid at the required depth right up to the pole or pillar. On completion of the work an as built sketch of the duct installation is to be provided on a copy of plan 2Y138s1.

Note that these requirements apply to the following poles.

- Northpower owned poles
- Telecommunications poles owned by Chorus that support electricity reticulation
- Privately owned poles that support reticulation crossing a formed road.



6. Electrical Isolation

A service must have provision to enable electrical isolation from Northpower's Network. Such isolation points must be provided for each connected consumer individually and provide for permanent or temporary disconnection of the electricity supply and for electrical protection in case of an electrical fault occurring on the service. A suitable means of isolation is to be provided appropriate to the installation voltage and specific engineering design, of the service to be connected. The provision and installation of such isolation devices will be at the reticulation owner's expense and all materials used must comply with Northpower's list of approved materials and equipment.

Where a single service has two or more ICP's or consumers connected each ICP must be able to be separately disconnected with a lockable switch or sealable fuse installed before the metering equipment.

7. Metering

Revenue metering and control equipment can be provided and installed by Northpower. Metering installed in the customer's premises can also be supplied by the electricity retailer and installed by their authorised contractor.

Any metering equipment installed in Northpower pillars, cabinets or other accommodation is to be installed by Northpower.

Customer's may provide their own check metering beyond the revenue metering. However, the check meter must be clearly marked as 'check meter only'.

8. Connection to the Network and Livening

A formal application should be made to Northpower to initiate any connection to the Network. An 'Application for Network connection or Alteration to Supply' should be completed, either on the form or in Northpower's website, and submitted to Northpower.

Where the connection requires Northpower Contracting's involvement, a quotation will be provided. An 'Acceptance of Quote' should be signed, a suitable deposit paid and other 'Terms and Conditions' met before the work can proceed.

All connection and livening work will be chargeable to the party requesting the work.

Services can be connected and livened once the following has been completed:

- A service request is provided by an electricity retailer
- A Network approval from Northpower
- A Certificate of Compliance has been provided by the contractor
- All other relevant standards, codes and acts have been met

Note that any installations that include generation equipment that can feed into Northpower's network will also require the following:

- Inspection by a registered electrical inspector.
- A check by Northpower to ensure compliance with network standards

9. Inspections and Audits

Northpower can provide a registered electrical inspection service if required. Note that this work is chargeable.

If, following a Network quality audit, any work completed by a contractor is found to be not to comply with the required standards, code, acts and other requirements, the contractor will be required to rectify any issues and cover any follow up compliance checks at their cost.