NETWORK TASMAN

DISTRIBUTION CODE

Effective From 1 December 1998

TABLE OF CONTENTS

DC1. INTRODUCTION

DC1.1. BACKGROUND

As part of the terms and conditions for connection, and in the interests of other Users connected to the Distribution Network, this document specifies the technical requirements which must be complied with by Users connecting and operating their equipment on premises connected to the Distribution Network.

This document, the Distribution Code, sets out these terms and conditions. It covers three broad areas:

- technical requirements for connection
- requirements for operational contact
- requirements for long-term planning

It is also a statement of assurance to the Users of the network of how they can expect the network to be operated and managed.

In addition to complying with the Distribution Code, Users of the Distribution Network will be required to comply with the Electricity Regulations 1997 and any amendments thereof, and Codes of Practices promulgated under these Regulations.

This document is primarily a technical document and is to be read in conjunction with Use of System Agreements, Conveyancing Agreements, Connection Agreements as appropriate.

DC1.2. SCOPE

The Distribution Code comprises a Network Connection Code (DC2), a Network Operating Code (DC3), Contingency Planning (DC4), System Tests (DC5) and Embedded Generation (DC6).

DC1.3. DEFINITIONS

In this Distribution Code, the following terms shall have the following meanings unless the context otherwise requires:

Act	The Electricity Act 1992 and amendments thereto.
Active Power	The product of voltage and in-phase component of alternating current (measured in kilo-watts (kW) or mega-watts (MW)).

Apparatus	All electrical machines, fittings, and appliances.
Apparent Power	The product of voltage and alternating current (measured in kilo-volt-amperes (kVA) or mega-volt-amperes (MVA)).
Authorisation	The formal sanction, preferably given in writing, to undertake specified tasks that have a specific meaning in safety management systems.
Back-up Protection	That protection system which will open a fault-current interrupting device in the absence of the correct operation of the primary protection system.
Black Start	The procedure necessary for a generator to recover from a total or local system shutdown.
Black Start Capabilities	The ability of a power station to commence generating without the need for a power supply external to power station.
Central Dispatch	The dispatch of generating units by Trans Power.
Certificate of Compliance	A certificate issued in accordance with Regulation 39, Electricity Regulations 1997.
Civil Emergency	A state of national, regional or local civil defence emergency as declared by the appropriate civil defence controller.
Connection Agreement	Means an agreement between the Customer and the Distributor for the provision of Line Function Services.
Control Centre	A location for the control and operation of all or part of the Distribution Network, the Trans Power transmission system, or the system of a User.
Control Person	A person who has been nominated by Network Tasman, Trans Power or a User to be responsible for controlling and co-ordinating system operations, including all health and safety requirements in hazard identification and emergencies that will apply to people in the place of work and people in the vicinity of the place of work.
Conveyancing Agreement	Means an agreement between the Retailer and the Distributor for the provision of Conveyancing Services.
Customer	Means a purchaser of Line Function Services either directly from Network Tasman or indirectly through a Retailer.

Customer Installation	Means any Fittings owned or used by a Customer (except Distributor's Equipment) that form all or part of a system for conveying electricity from the Customer's Network Connection Point to where the electricity may be consumed.
Demand	The electricity demand expressed in kVA/MVA, kW/MW or kVAr/MVAr of apparent power, active power and reactive power respectively.
Distribution Network	Means the Distributor's system including all Fittings comprising that system to convey electricity from the Network's Point or Points of Supply and which terminates at the Customer's Network Connection Point.
Distributor	A person or organisation who supplies Line Function Services.
Electrical Code of Practice	An Electrical Code of Practice issued pursuant to the Electricity Regulations 1997.
Embedded Generator	A person or organisation who generates electricity and whose generating units are directly connected to a Distribution Network.
Embedded Network Operator	Means an entity that operates a public or private network for supply to itself or other parties.
Event	An unscheduled or unplanned (although it may be anticipated) occurrence on or relating to a system, including, without limiting that general description, faults, incidents and breakdowns and adverse weather conditions being experienced.
Generator	Any other person or Organisation that generates and supplies electricity to the Retailer or EMCO.
Good Industry Practice	Means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances and includes adherence to the principles laid out in any code of practice generally adopted by the electrical industry.
High Voltage	Any line voltage exceeding 1000 volts ac or 1500 volts dc.

kVA	Kilo-volt-ampere (1000 volt-amperes)
kW	Kilo-watt (1000 watts).
Line Function Services	The provision, operation and maintenance of electric lines, substations, related equipment and all other services necessary for the conveyance of electricity from Generators to Customers' Network Connection Points including the procuring of contracts with TPNZ for the connection of the Distributor's Network, the provision of a Load Control Service and the allocation of Losses.
Load Control Service	The function of reducing or interrupting a part or all of a Customer's supply of electricity on the basis agreed between the Retailer and Distributor at the date of this agreement or such other basis as may be agreed between the Distributor and the Retailer with the principal purpose of optimising TPNZ charges and minimising existing and future network capacity requirements.
Low Voltage	Any line voltage exceeding 32 volts ac or 115 volts dc, but not exceeding 1000 volts ac or 1500 volts dc.
MVA	Mega-volt-ampere (1,000,000 volt-ampere)
MVAr	Mega-var (1,000,000 vars).
MW	Mega-watt (1,000,000 watts).
Network Connection Point	The point of connection at which a supply of electricity may flow between the Distribution Network and the Customer's Installation as defined by the Distributor.
Network Point of Supply	The point or points of connection between the Distribution Network and Trans Power's network or any Generator or any other distribution network through which the Distribution Network receives a supply of electricity.
Network Standards	The Network Tasman Network Extension Design Standards, Network Extension Construction Standards, Network Extension Arrangement Drawings and Network Extension Component Drawings.
New Capacity Agreement	Means an agreement between the Distributor and the Retailer or the Customer (as appropriate) to supply new capacity or upgraded capacity or other requirements of the Distribution Network to meet the needs of the Retailer or the Customer.

Normal Operating Frequency	The number of alternating current cycles per second, expressed in hertz, at which the system normally operates, ie 50 Hertz.
Operational Boundary	The boundary between the equipment operated by Network Tasman or a User and the equipment operated by another, as specified in the relevant site responsibility schedules.
Operational Diagram	A schematic representation of the HV apparatus and the connection to all external circuits at a connection point, incorporating its numbering, nomenclature and labeling.
Outage	Removal of equipment from service, generally to permit maintenance or other work to be undertaken.
Ownership Boundary	The boundary between the equipment owned by Network Tasman and the equipment owned by the User.
Planned Outage	A pre-planned outage of generating plant, or of part of the Trans Power transmission system, or of part of a Distribution Network.
Point of Connection	The point of interconnection of a User and includes all Network Connection Points.
Power Factor	The ratio of active power to apparent power.
Power Station	An installation comprising one or more generating units, even where sited separately, which are owned and/or controlled by the same Generator and may reasonably be considered as being managed as one power station.
Protection	The provisions for detecting abnormal conditions in a system and initiating fault clearance, or actuating signals or indications.
Quality of Supply	A satisfactory supply of electricity pursuant to this Code and the Electricity Regulations 1997.
Reactive Power	The product of voltage and current and the sine of the phase angle between them, which is normally measured in Kilo-vars (kVAr) or Mega-vars (MVAr).
Regulations	Regulations made pursuant to the Electricity Act 1992.
Retailer	Means an Electricity Supply Business which uses the Distribution Network for the purpose of conveying electricity it is selling to Customers whether with or without Line Function Services it is selling.

Superimposed	Those electrical signals carried on a Distribution Network for the purpose Signals of information transfer or load management.
System	A network running at various voltages.
System Control	The administrative and other arrangements established to maintain as far as possible the proper safety and security of a system.
System Tests	Those tests which involve simulating conditions or the controlled application of irregular, unusual or extreme conditions on the total system or any part of it, but not including routine testing, commissioning or recommissioning tests.
Top-Up	The supply of electricity to a User on a continuing or regular basis to make good any shortfall between the User's total supply requirements and that met from other sources.
Total System	The Trans Power transmission system and the Distribution Networks and any other transmission or Distribution Networks connected to these at a particular time in either of the North Island or the South Island of New Zealand respectively.
TPNZ	Transpower New Zealand Ltd, its successors and permitted assigns.
TPNZ Network	The electricity transmission network owned and operated by TPNZ.
Use of System Agreement	An agreement between the Retailer and the Distributor for the provision of Line Function Services.
User	Any person or organisation using the Distribution Network, but excluding Trans Power. It includes all customers with Connection Agreements, embedded generators, Retailers, and Embedded Network Operators.
User System	Any system owned by a User including Customer Installations, generating units, Distribution Networks, equipment connecting generating units or Distribution Networks.
User With Own Generation	A User with one or more generating units connected to the customer's system providing all or part of the customer's

electricity requirements, and which may use the Distribution Network for the transport of any surplus of electricity being exported.

DC2. NETWORK CONNECTION CODE

DC2.1. INTRODUCTION

The Network Connection Code (DC2) defines the conditions and standards applicable to all User Systems connected or proposed to be connected to the Network Tasman Distribution Network.

DC2.2. NETWORK CONNECTION BACKGROUND INFORMATION

DC2.2.1. Connection Arrangements

The design of connections between the Distribution Network and User's System shall be in accordance with DC2 and Network Tasman's Network Standards, and may include such modification as approved in writing by Network Tasman.

When an application for connection is made via a Network Connection Application, Network Tasman will determine available capacity from the Distribution Network, and will notify the User of the voltage to which the User will be connected in accordance with its normal practice for the type of load to be supplied. Network Tasman may on occasion specify a different connection voltage in order to avoid potential disturbance caused by the User's Apparatus to other Users of the Distribution Network, or for other technical reasons, or may agree alternative methods for minimising the effects of disturbing loads.

If sufficient capacity is not available it will be necessary for the User to enter into a New Capacity Agreement with Network Tasman.

Before approving a Network Connection Application it will be necessary for Network Tasman to be reasonably satisfied in writing that the User's System will comply with all appropriate requirements of the Distribution Code.

Network Tasman's approval of the connection of a Customer's Installation is conditional on:

a) the agent or contractor nominated to carry out the Connection Services having been previously accredited by Network Tasman

b) the installation complying with Network Tasman's connection requirements.

c) the installation having a valid Certificate of Compliance.

d) full compliance with the Distribution Code.

DC2.2.2. Information Requirements of Network Tasman

The following information should be provided to Network Tasman when a connection is requested on the Network Connection Application form. Should a preliminary examination of this data indicate that more detailed information is required, this shall be provided to Network Tasman upon request.

For supplies at Low Voltage it is normally possible to assess whether a proposed connection is acceptable, and to determine the necessary supply arrangements, from analysis of the following limited data:

a) maximum current requirements (A) and number of phases (refer DC2.2.4);

b) type and electrical loading of equipment to be connected, eg. number and size of motors, including maximum starting currents and electrical heating arrangements;

c) the date when the connection is required;

d) proposed NCP address.

For supplies other than at Low Voltage, it is necessary for the following additional information to be provided.

a) All types of Demand;

(i) maximum Active Power requirement;

(ii) maximum and minimum Reactive Power requirements;

(iii) type of load and control arrangements, eg controlled rectifier or larger motor drives with maximum starting currents;

(iv) maximum load on each phase at the time of maximum Demand;

(v) the maximum harmonic currents to be imposed on the Distribution Network.

b) Fluctuating Loads:

Details of the cyclic variation, and where applicable the duty cycle, of Active Power (and Reactive Power, if appropriate), in particular.

(i) the rates of change of Active Power and Reactive Power, both increasing and decreasing;

(ii) the shortest repetitive time interval between fluctuations in Active Power and Reactive Power,

(iii) the magnitude of the largest step changes in Active Power and Reactive Power, both increasing and decreasing.

In some cases, more detailed information such as an indication of the pattern of build up of load and a proposed commissioning programme may be required.

c) Capacitors and Inductors:

Details will be required of capacitor banks and reactors connected at High Voltage which could affect the Distribution Network. Sufficient detail is required for the following:

(i) to verify that controlling equipment of the Distribution Network is suitably rated; and

(ii) to show that the performance of the Distribution Network will not be impaired.

DC2.2.3. Network Connection Points

The Network Connection Point (NCP) is the point of connection of the Customer's installation with Network Tasman's Distribution Network. At the NCP, there is a fuse in each phase conductor, the rating of which determines the maximum capacity available to the Customer Installation from the network.

The location of the Network Connection Point will be determined by Network Tasman and will be where practicable as close as possible to the boundary of the Customers' premises and in general not on private land. However in cases where two or more Customer Installations share the same premises, or where High Voltage network lines cross on to private land, then the Network Connection Point for the Customer's installation may be on private property. Network connection fuses may not be removed, replaced, repaired or in any other way interfered with other than by Network Tasman accredited personnel.

For all new installations, Network Connection Point fuses will only be mounted within Network Tasman service pillars, on network poles or within Network Tasman substation enclosures.

Note: the NCP is not necessarily located at the Point of Supply as defined in the Act.

DC2.2.4. Standard Supply Capacities and Supply Details

Standard supply capacities up to -150 KVA are as follows:

Group 0

Single Phase up to 20A

Group 1

Single Phase 60A

Two Phase 40A

Three Phase 30A

Group 2

Two Phase 60A

Three Phase 40A

Three Phase 50A

Three Phase 60A

Three Phase 80A

Three Phase 100A

Three Phase 125A

Three Phase 160A

Three Phase 200A

Three Phase 250A

In rural areas electrical installations will generally be either two or three phase. Single phase supply in rural areas is available only for installations with total loads less than 5kW and where the prior written consent of Network Tasman has been obtained.

Where the supply is two or three phases, then the load must be balanced as equally as possible across the phases. Any costs associated with correction of phase balancing is to the Customer's account.

Supply of capacities of above 150 kVA are maximum Demand metered and capacity charges are not determined by supply fuse rating in these cases.

Network Tasman reserves the right to determine the availability of capacity for all new or capacity upgrade requests.

DC2.2.5. Temporary Supplies

Where temporary metered supply boxes are connected to Network Tasman's network they must meet the requirements of the Electricity Regulations 1997. Responsibility for the operation and safety of the temporary supply is with the User.

DC2.2.6. Specification of Equipment, Overhead Lines and Underground Cables

Network Tasman reserves the right to determine the suitability of standards proposed for equipment connected to the Distribution Network. Design and construction must comply with the current Network Tasman Network Standards which are separately documented and publicly available.

DC2.3. NETWORK CONNECTION DESIGN CONSIDERATIONS

DC2.3.1. Security

The Distribution Network and any User System connected to that System shall be designed to be consistent with the Asset Management Plan and the Risk Management Plan of Network Tasman, any relevant statutory Laws, Regulations and Electrical Codes of Practice and with this Distribution Code. Where any User System does not comply, Network Tasman may disconnect the non complying User System from the Distribution Network.

DC2.3.2. Frequency and Voltage

The Distribution Network and any User Systems connected to that System shall be designed to enable the Normal Operating Frequency and voltages to be supplied to Users, and to comply with statutory Regulations and Electrical Codes of Practice.

DC2.3.3. System Disturbances and Waveform Distortion

Distortion of the System voltage waveform caused by certain types of equipment may result in annoyance to other Users of the Distribution Network or damage to connected Apparatus. In order to limit these effects the following shall apply to Users' loads connected to the Distribution Network:

a) voltage fluctuations shall comply with the limits set out in statutory Regulations and Electrical Codes of Practice, and related NZ standards;

b) the harmonic content of any load shall comply with the limits of the New Zealand Electrical Code of Practice for Harmonic Levels (ECP36:1993) and any subsequent amendments;

c) motor starting shall comply with the Committee Report on Motor Starting Current for AC Motors published by the ESANZ Engineers' Institute (now EEA NZ) February 1982;

d) voltage flicker for all installations completed after 1 April 1993 shall comply with Australian Standards on Disturbances in mains supply networks (AS2279).

Under special circumstances Network Tasman may consider other limits or levels.

Under fault and circuit switching conditions the rated frequency or voltage may fall or rise transiently.

DC2.3.4. Short Circuit Ratings

The short circuit rating of User's equipment at the Network Connection Point should not be less than the design fault level of the Distribution Network.

The Network Tasman 11kV and 6.6kV networks are designed for a maximum short circuit level of 250MVA ie 22kA at 6.6kV and 13kA at 11kV. Customer Installations which take supply at 11kV or 6.6kV shall be designed for a 250MVA prospective short circuit level.

Low voltage supplies taken direct from the terminals of a transformer shall have installations designed for the prospective short circuit levels of the following table:

Transformer kVA (3 phase)	PSC Amps
15	1000
30	1500
50	2000
100	4000
200	6500
300	9500

400	11000
500	15000
750	22000
1000	28000

Information on the maximum prospective short circuit current at any proposed point of supply is available on request to Network Tasman.

DC2.3.5. Earthing

The arrangements for connecting the System with earth shall be designed to comply with the requirements of the Regulations, Electrical Codes of Practice and NZ Standards as may be applicable.

Design practice for multiple earth neutral System of earthing shall comply with Good Industry Practice. The specification of associated equipment shall meet the voltages and fault levels which will be imposed on the equipment as a result of the method of earthing.

Users shall take precautions to limit the occurrence and effects of circulating currents in respect of the neutral points connected with earth where there is more than one source of energy.

DC2.3.6. Voltage Regulation and Control

Any extension or connection to the Distribution Network shall be designed in such a way that it does not adversely affect the voltage control employed by Network Tasman.

DC2.3.7. Protection

The Distribution Network and the System of any User connected to the Distribution Network shall incorporate protective devices in accordance with any relevant Regulations, Electrical Codes of Practice and NZ Standards.

In order to ensure satisfactory operation of the Distribution Network, Network Tasman reserves the right to determine the Protection Systems, operating times, discrimination and sensitivity at the Ownership Boundary.

The User's arrangements for protection, including types of equipment and Protection settings, must be compatible with Network Tasman Network Standards. In particular:

a) maximum clearance times must be within the limits established by Network Tasman in accordance with Protection rating and equipment short circuit rating;

b) in connecting to the Distribution Network, the User should be aware that auto-reclosing or sequential switching features may be in use on the Distribution Network. Network Tasman will, on request, provide details of auto-reclosing or sequential switching features in order that the User may take this into account in the design of the User's System, including Protection arrangements;

c) the User should be aware that the Protection arrangements on the Distribution Network may cause disconnection of one phase only of a three phase supply for certain types of faults.

d) Embedded Network Operators are liable for damage and consequential losses within the Embedded Network and on Network Tasman's network for interruptions caused through use of fuse Protection rather than earth leakage circuit breakers.

DC2.3.8. Substations on Customers Premises

In some cases the supply applied for by a prospective Customer or an increased supply applied for by an existing Customer is assessed to represent Demand which in the opinion of Network Tasman's Network Manager cannot reasonably be made available from the local works. In these cases the Customer shall provide and maintain at their cost (if any) acceptable accommodation for a substation, lines, cables or other equipment on the Customers premises. Easement/s in Gross to Network Tasman's minimum requirements covering the 'electrical works' will be required. These may also be required on adjacent properties depending on the access route to the property requiring new or upgraded supply.

A fenced pad type substation may be installed where access to the substation area is not open to the public. Where access is open to the public, a padmount transformer or fully enclosed concrete kiosk substation will be required.

In such situations supply is given at the Low Voltage fuses of the substation.

Unimpeded vehicle/mobile plant access to the substation for the repair or removal of the transformer and other Network Tasman property must be maintained at all times.

Where 11kV cables and mains cables are to be covered by concrete they must be installed in ducts unless acceptable alternative access is available.

DC2.3.9. Equipment at Ownership Boundary

All equipment at the Ownership Boundary shall meet the design principles contained in this Code. Connection for entry to and exit from the Distribution Network shall incorporate a means of disconnection of the User's installation by Network Tasman.

DC2.4. CUSTOMER INSTALLATION TECHNICAL REQUIREMENTS

DC2.4.1. Ripple Control

Network Tasman operates a 475Hz and 317 Hz ripple control System on its Distribution Network. All electrical installations must at all times present a high impedance to these frequencies.

Where Users install capacitors on their installations, these capacitors must be designed to avoid affecting any signals which Network Tasman uses for its System management purpose. Network Tasman reserves the right to require the User to provide any necessary corrective measures if the Users capacitors interfere with Network Tasman's signals. Advice for installation of capacitors is available from Network Tasman.

DC2.4.2. Superimposed Signals

Use of the Distribution Network is restricted to the conveyancing of electricity. Use of the Distribution Network for mains borne signaling or communication purposes including power line carrier of any frequency requires the separate agreement of Network Tasman.

DC2.4.3. Power Factor

The Power Factor of any installation greater than 15kVA capacity, shall not be less than 0.95. All new connections or increased capacity installations must comply with this requirement before the Network Connection Application will be approved.

The Power Factor of Customer Installations may be corrected by using correction of individual appliances or by bulk correction at the Customer’s switchboard.

Where bulk Power Factor correction is utilised, then Power Factor controllers are required to ensure that the Power Factor is not leading even at light loads.

Approved ripple signal blocking equipment must be fitted to bulk correction installations, with blocking chokes installed on each step of all phases. Blocking chokes will also be required at other installations where in the opinion of Network Tasman, the installation causes an unacceptable lowering of ripple injection signal voltage or absorption of ripple signal current. In all instances, ripple blocking will be installed at the User's cost.

Network Tasman reserves the right to charge existing connected Users a network penalty in addition to the normal electricity charges after 12 months notice has been given by Network Tasman to correct the Power Factor of his/her installation.

DC2.4.4. Mains

The recommended residential service mains is copper neutral screen with a minimum cross sectional area of 16mm2 or aluminium equivalent. All service mains shall be appropriate for the load group required and shall comply with NZS3000:1997.

Mains cables shall be installed in accordance with the applicable regulatory, industry and local authority standards.

DC2.4.5. Water Heaters

All water heating installations must comply with the requirements of NZS 4602 and 4603:1986 or equivalent, and must be installed to the requirements of the relevant building codes.

The following recommended minimum standards apply to water heater cylinders connected to Network Tasman's Controlled Tariffs:

Water Saver	Cylinder Capacity	Element Rating
Single Bedroom Residence	135 Litres	1000W
Multi Bedroom Residence	180 Litres	2000W
Night Only		
Minimum Cylinder Size	270 Litres	3000W

DC2.4.6. Motor Starting

Except where alternative arrangements are agreed in writing between Network Tasman and the User, all motor starting is to comply with

the “ESEANZ Committee Report on Motor Starting Currents for AC Motors” dated February 1982, or as subsequently amended.

Reduced current starters are required for all motors greater than those in the Table below unless otherwise authorised by the Network Manager.

Size Limitations Of Motors That May Be Started Direct On Line

	Rural	**Urban Residential**	**Urban Non Residential**
Single Phase	0.75kW (1hp)	1.5kW (2hp)	2.2kW (3hp)
Three Phase	4.0kW (5.3hp)	4.0kW (5.3hp)	7.5kW (10hp)

Rural, Urban and Residential zonings are as zoned in the Local Authority District Plan.

DC2.4.7. Welders

Welders rated at 5kVA or under are classed as portable appliances and may be operated at 230V. Welders rated over 5kVA shall be supplied from two phases, shall comply with BS 638 and shall be corrected to 0.8 Pf.

Operation of welders shall comply with the Australian Standards on Disturbances in Supply Networks AS 2279.

DC3. NETWORK OPERATING CODE

DC3.1. INTRODUCTION

The Network Operating Code deals with various operational matters affecting Users, including the provision of forecasts of likely Demand, the planning of System Outages and generating plant Outages, the reporting of operational changes and Events, safety matters, and procedures for dealing with contingencies.

The cost responsibility for any alteration or addition to the Distribution Network required for compliance with the Distribution Code is part of the commercial arrangements between the parties concerned and is not included in this Code.

Information exchanged for planning purposes is confidential to the parties holding the information. In many cases this will comprise sensitive commercial information and must be treated accordingly.

The objectives are:

a) to enable the Distribution Network to be planned, designed and constructed to operate economically, securely and safely;

b) to facilitate the use of the Distribution Network by others and to specify a Quality of Supply to be provided;

c) to establish technical conditions which facilitate the interfacing of Systems at points of entry to and exit from the Distribution Network;

d) to formalise the exchange of planning data; and

e) to provide sufficient information for a User to assess opportunities for connection and to plan and develop its Systems in order to maintain compatibility with the Distribution Network.

DC3.2. PLANNING INFORMATION

This section of the Distribution Code details the planning information to be exchanged between Network Tasman and Users, or, where appropriate, between Network Tasman and a Retailer on behalf of Users.

DC3.2.1. Requirements From Network Tasman

Network Tasman will provide all System parameters reasonably required for planning by the User. All reasonable costs incurred in obtaining this information shall be to the account of the User.

DC3.2.2. Requirements For Electricity Retailers And Other Users

Users of the Distribution Network must provide sufficient planning data/information and safety management requirements as requested by Network Tasman from time to time, to enable Network Tasman to comply with technical and legislative requirements.

A User must give adequate notice of any significant changes to its System or operating regime to enable Network Tasman to prepare its development plan, budget for, and implement any necessary System modifications.

Reactive Compensation Plant

A User shall provide Network Tasman with information on any reactive compensation plant connected to the Distribution Network, other than at Low Voltage, including:

a) the MVAr capacitive or inductive rating of the equipment and operating range if variable;

b) details of any automatic control logic;

c) the Point of Connection to the Distribution Network.

Where attenuation of load control or any other Superimposed signals has occurred, or is seen as a possibility, as a result of reactive equipment installed on the Low Voltage System, the information required in clauses (a) to (c) above may be required to be provided for the Low Voltage System.

Lumped Network Susceptance

The User shall provide Network Tasman with details of the equivalent lumped network susceptance of the User's System referred back to the connection with the Distribution Network when reasonably requested by Network Tasman in writing.

Fault Infeeds

Provided it is reasonably available or accessible, information shall be exchanged between Network Tasman and the User on fault infeed levels at the Point of Connection with the Distribution Network in the form of:

a) the maximum and minimum 3 phase symmetrical and phase-earth short circuit infeed;

b) in the case of interconnected Systems, adequate equivalent network information.

Demand Transfer Capability

Information shall be exchanged on Demand transfer capability where the same Demand may be supplied from alternative Distributor or User Network Connection Points. This shall include the proportion of Demand normally fed from each Points of Connection and the arrangements for transfer under Outage conditions.

Transient Overvoltage Effects

For a User's busbars connected to the Distribution Network, sufficient details may need to be exchanged with respect to the User/Network Tasman Ownership Boundary to enable an assessment, where necessary, to be made of transient overvoltage effects.

DC3.3. OPERATIONAL LIAISON

DC3.3 sets out the requirements for the exchange of information in relation to operations on the Distribution Network, or the System of any User connected to the Distribution Network. It does not seek to deal with any actions arising from the exchange of information, but merely with that exchange.

DC3.3.1. Nomination of Officers

Network Tasman and each User to whom this section of the Distribution Code applies will nominate personnel having the knowledge and experience required to operate the Distribution Network and the System of the User connected to the Distribution Network and will agree communication channels to ensure the effectiveness of the exchange of information specified herein.

DC3.3.2. Planned Outages and Events

Requirement to Notify

In the case of a Planned Outage or Event on the System of a User which has an operational effect on the Distribution Network, the User will notify Network Tasman in accordance with this Code.

Form of Notification

A notification under this section of the Distribution Code shall be of sufficient detail to describe the Planned Outage or Event and shall include the name of the individual reporting the operation or Event.

Timing of Notification

Notification of an Planned Outage or Event shall be given as soon as possible after the occurrence of the Planned Outage or Event, or the time that an Event is known of or anticipated by the notifying party. A notification of a Planned Outage will be given as far in advance as possible, and in any case shall be given in sufficient time to reasonably allow the recipient to consider and assess the implications and risks arising.

DC3.3.3. Significant Incidents

Reporting Procedure

Where an Event on the System of a User, has had a significant effect on the Distribution Network, the Event shall be reported in writing to Network Tasman. Such an Event will be termed a significant incident.

For the purposes of this section of the Distribution Code, the term "Event" is deemed to include those emergency operations which a User may initiate in response to particular abnormal circumstances which may arise on the System.

In the case of an Event which has been reported verbally to Network Tasman and subsequently has been determined by Network Tasman to be a significant incident, a written report will be given to Network Tasman by the User, in accordance with this document.

Joint Investigations

Where a significant incident has been declared and a report submitted under this Code, either party or parties may request in writing that a joint investigation be carried out.

A joint investigation will take place only where agreed by all parties affected by it. The form and rules of the procedure shall be agreed by the parties involved. Any Joint Investigation under this Code is separate from any inquiry which may be carried out under any disputes resolution procedure or to comply with any statutory requirements.

DC3.3.4. Numbering and Nomenclature

New Apparatus

When Network Tasman or a User intends installing Apparatus on a site having an Ownership Boundary, the proposed numbering and/or nomenclature to be adopted for the Apparatus must be notified to the other owners. The notification will be made in writing to the other owners and will consist of an Operational Diagram incorporating the proposed new Apparatus to be installed, and its proposed numbering.

The notification will be made to the other owners prior to the proposed installation of the Apparatus. In the event that agreement cannot be reached between Network Tasman and the other owners, Network Tasman, acting reasonably, shall have the right to determine the numbering and nomenclature to be applied at that site.

Existing Apparatus

Network Tasman and/or every User shall supply Network Tasman and/or every other User, on request, with details of the numbering and nomenclature of Apparatus on sites having an Ownership Boundary. Network Tasman and every User shall be responsible for the provision and erection of clear unambiguous labeling showing the numbering and nomenclature of its Apparatus on sites having an Ownership Boundary.

Changes to Existing Apparatus

Where Network Tasman or User needs or wishes to change the existing numbering or nomenclature of any of its Apparatus on any site having an Ownership Boundary, the provisions of DC3.3.4 - New Apparatus - shall apply, with any amendments necessary to reflect that only a change is being made.

Where a User changes the numbering and/or nomenclature of its Apparatus, the User will be responsible for provision and erection of clear and unambiguous labeling.

Where Network Tasman changes the numbering and/or nomenclature of its Apparatus, Network Tasman will be responsible for the provision and erection of clear and unambiguous labeling.

DC3.4. SAFETY CO-ORDINATION

DC3.4 specifies the safety management system criteria to be applied by Network Tasman to meet statutory requirements such as the "General Safety Handbook Electricity Industry April 1995" and "Safety Rules Electricity Industry April 1995" (as amended or its successor code), other legislative requirements and other relevant Codes, imposed on owners and operators of the Distribution Network.

Similar criteria and standards of safety management systems are required to be provided by other Users of the Distribution Network when carrying out work or tests at the operational interface with the Distribution Network.

DC3.4.1. Objective

The objective is to establish requirements with a view to ensuring safety of persons working on the Distribution Network and at or across operational and Ownership Boundaries.

DC3.4.2. Procedure

This section of the Distribution Code is to be applied by Network Tasman and all Users.

Safety Management Systems

An approved Health & Safety Handbook specifying the principles and procedures, and where appropriate, the documentation to be applied, so as to ensure the health and safety of all who are liable to be working or testing on the Distribution Network, or on Apparatus connected to it, will be established by Network Tasman and Users as specified in DC3.4.

Operational Boundaries and Principles

At sites or locations where an Operational Boundary exists, the Health & Safety Handbook to be adopted and the time for adoption, shall be jointly agreed to in writing. This will include provision for Control Persons who have the knowledge and experience to operate to the Health & Safety Handbook in use by field personnel where appropriate.

A system of documentation shall be maintained by Network Tasman and the User which records the inter-System safety precautions taken when:

a) work or testing is to be carried out on High Voltage plant and/or Apparatus across the Operational Boundary,

b) isolation and/or earthing of the other's System is needed.

Where relevant, copies of the Health & Safety Handbook and related documentation shall be exchanged between Network Tasman and Users for each Operational Boundary, and also if appropriate, for each working occasion.

The safety management system must include the provision for written Authorisation of the training, knowledge and experience of personnel concerned with the control, operation, work, or testing of Apparatus forming part of, or connected to, the Distribution Network.

Authorised Personnel

Each individual Authorisation shall indicate the class of operation and/or work permitted, and the section of the System to which the Authorisation applies.

Environmental Safety

Arrangements shall be made to ensure site safety and security, as required by site. Arrangements shall be made by all parties to ensure that personnel are warned by an appropriate means, of hazards specific to any site, before entering any area of the site. Where these risks include contamination or similar, suitable decontamination facilities and procedures shall be provided and used.

DC3.4.3. System Control

Control Responsibilities

Network Tasman and Users shall jointly agree and set down in writing schedules specifying the responsibilities for System Control of equipment. These shall ensure that only one party is responsible for any item of plant or Apparatus at any one time.

Network Tasman and each User shall at all times have nominated a person or persons responsible for the control and co-ordination of safety from the System pursuant to this section of the Distribution Code.

Control Documentation

Network Tasman and Users shall maintain a suitable system of documentation which records all relevant Planned Outages and Events that have taken place on the Distribution Network or any other System connected to it, and the co-ordination of relevant safety precautions for work.

System Diagrams

Diagrams illustrating sufficient and up to date information for the Control Person to carry out their duties safely shall be exchanged by Network Tasman and the User and supported by written documentation prior to energising any System alteration or addition.

Communications

Suitable communication systems shall be established between Network Tasman and Users to ensure the control function is carried out in a safe and secure manner.

Network Tasman and Users will establish 24 hour availability of personnel with suitable Authorisation where the joint operation requirements demand it.

DC3.4.4. Responsibility

Ownership, Operation and Maintenance Schedules

Schedules specifying the responsibilities for ownership, operation and maintenance shall be jointly agreed to in writing by Network Tasman and Users for each location where an operational interface or joint responsibilities exist.

Maintenance of Schedules and Diagrams

All schedules and diagrams shall be maintained by Network Tasman and Users and exchanged as necessary to ensure they reflect the current agreements and network configuration.

DC3.5. SYSTEM LOAD CONTROL

DC3.5 is concerned with the provisions for Demand control under emergency conditions to be made by Network Tasman or the User with Systems connected to the Distribution Network. Procedures are established to enable Network Tasman either in its own right or following a request from Trans Power, to achieve a reduction in Demand in order to avoid a breakdown or overload of any part of the Total System or the Distribution Network. The following methods of reducing Demand are dealt with:

a) voltage reduction;

b) User Demand management;

c) User disconnection;

d) automatic low frequency disconnection;

e) emergency manual User disconnection.

DC3.5.1. Procedures

This section of the Distribution Code applies to Network Tasman and Users, including Embedded Generators. Implementation of Demand control by Network Tasman may affect Customers of Retailers, and where applicable, contractual arrangements between Retailers and their Customers should reflect this.

Demand control may take the forms outlined below.

Operational System Load Reduction

Network Tasman will arrange, within the Distribution Network, procedures to reduce load in a controlled manner by reducing voltage and/or disconnecting Customers or portions of Customer loads.

A system of warnings may be contained within the load reduction procedures to give notice, wherever practicable, of implementation of load reduction measures beyond normal operational or economically based Demand control measures which may be detailed in a Connection Agreement. Connection Agreements shall make reference to such load reduction procedures.

Where Demand control is required to be exercised by Network Tasman upon request from Trans Power in order to safeguard the Total System, it will be necessary for such Demand control to be instituted promptly.

Automatic Disconnection of Demand Through Low-Frequency Detectors

Network Tasman shall not be responsible for any low frequency disconnection operations initiated by Trans Power, even if such arrangements were made in consultation with Network Tasman.

Emergency Manual Disconnection of Demand

If requested by Trans Power, or for its own purposes, Network Tasman may arrange to have available an emergency manual disconnection procedure. The procedure will be designed to be called upon to operate irrespective of System frequency.

Contractual arrangements between Retailers and their Customers should reflect the possibility of emergency disconnection of load.

DC3.5.2. Normal Load Management

The safe and secure operation of the Distribution Network is dependent on the current Load Control regime. In the short to

medium term, this regime is necessary to maintain the level of charges specified by Network Tasman in agreement with Retailers.

The charges specified in agreements with Retailers are effectively discounted from the uncontrolled levels and any significant reduction of the Load Control service is likely to result in a reduction of this effective discount.

Current Control Regime

Network Tasman offers a Load Control Service for the following appliances in Domestic premises.

storage-type water heaters

permanently wired storage space heaters

electric kilns

spa/swimming pools

storage heaters

The above appliances may be disconnected as controlled supplies during the months of May, June, July, August and September. This period is chosen both to minimise the charges payable to Trans Power and to match the design capacity of the Network. Accordingly this period may vary from time to time.

If the above appliances are not controlled then the Customer's Installation will be assessed at a higher effective control period Demand than would otherwise be the case and a correspondingly higher line charge will apply to the Network Connection Point.

Additionally the Load Control Service may be operated to meet the requirements of the Electricity Retailers for tariff switching and in the event of a material reduction of electricity availability, the Load Control Service may be operated for the Retailers.

Other Applications of Load Control

Load control may be used further to reduce the Network load in the event of emergencies occurring on the Network or on Trans Power's Network.

Retailers should note that as a condition of its supply from Trans Power, Network Tasman has agreed to the manual tripping of specified 33 kV feeders in the event of generation failures or failure on the Trans Power Network. The Retailers are offered the opportunity to participate in the selection of the specified feeders.

The Retailers should note that Network Tasman is willing to consider developments of the Load Control Service which will enable it to offer the Retailers options to match its future tariff structure.

DC4. CONTINGENCY PLANNING

DC4.1. INTRODUCTION

This section of the Distribution Code covers requirements for assisting the re-start or operating of the Total System in abnormal situations which require co-ordination between Trans Power, Network Tasman and Users, with a common approach to give uniformity of priorities. It also specifies requirements to be met during periods of declared Civil Emergencies.

DC4.2. SYSTEM RECOVERY PROCEDURES

The Total System may experience complete or partial shutdown in situations where a major fault has a cascading effect through this System, or where there has been a significant loss of generation. In such situations, System recovery must be co-ordinated in such a way that ensures it is carried out in a minimum of time. To this end, Network Tasman is required to follow the procedures laid down in the relevant Trans Power connection codes and to liaise with Trans Power when taking any action which may have an impact on the Trans Power transmission System.

Where generation has been lost completely, start-up of those Embedded Generators subject to Central Dispatch and which have been identified as having Black Start Capability shall be the responsibility of Trans Power.

The start-up of Embedded Generators not subject to Central Dispatch and which have Black Start Capability shall be co-ordinated by Network Tasman, with due notification being given to Trans Power. Where there is sufficient generating capacity available by configuring Network Tasman's Distribution Network appropriately, Network Tasman shall establish stable "islands of supply" around particular Generators.

The strategy to be applied in the above circumstances shall be documented by Network Tasman.

DC4.3. CIVIL EMERGENCIES

Network Tasman has an obligation to carry out certain Civil Emergency duties related to its Distribution Network. Under such emergencies the actions of Network Tasman and all parties connected either directly or indirectly to the Distribution Network will

be governed by the procedures laid down in the relevant portions of the Civil Defence Act 1983.

DC5. SYSTEM TESTS

DC5.1. INTRODUCTION

DC5 specifies Network Tasman's requirement to test and/or monitor its Distribution Network to ensure that Users are not operating outside the technical parameters required by any part of this Distribution Code.

DC5.2. COSTS OF TESTS

At the discretion of Network Tasman, a charge may be levied on Users for the carrying out of System Tests requested by the Customer and on such terms as may be agreed with the Customer.

DC5.3. PROCEDURES

The testing and monitoring relates to two aspects of the Distribution Network, namely Quality of Supply and Network Connection Point parameters. System test procedures shall be carried out in accordance with Network Tasman's standard procedures unless agreed otherwise by Network Tasman.

DC5.3.1. Quality of Supply

Network Tasman from time-to-time will test and/or monitor the Quality of Supply at various points on its Distribution Network. Specific testing and/or monitoring may be initiated by request of the User

Where the results of such tests show that the User is operating outside the technical parameters specified in any part of the Distribution Code, or of any other statutory regulation or Electrical Code of Practice, the User will be informed accordingly.

Where the User requests, a re-test can be carried out and witnessed by a User representative.

A User shown to be operating outside limits specified in this document will immediately, or within such time as may be agreed with Network Tasman, remedy the situation or disconnect from its System any Apparatus causing the problem. Continued failure to remedy the situation may result in the User being disconnected from the Distribution Network until they can warrant this Code will be complied with.

DC5.3.2. Network Connection Point Parameters

Network Tasman will from time-to-time monitor the effect of the User on the Distribution Network. The monitoring will normally be related to the amount of power and Reactive Power transferred across the Network Connection Point. Where the User is exporting to or importing from the Distribution Network Active Power and Reactive Power in excess of the parameters in the Use of Systems Agreement, Network Tasman will inform the User of, and where appropriate demonstrate the results of such monitoring.

Where the User requires increased Active Power and Reactive Power in excess of the physical capacity of the Network Connection Point, the User will restrict power transfers to the limits specified in the Use of Systems Agreement until a modified Use of Systems Agreement has been applied for from Network Tasman and physically established.

DC6. REQUIREMENTS FOR EMBEDDED GENERATION

DC6.1. INTRODUCTION

DC6 is applicable to all existing or prospective Generators, including Users With Own Generation having plant operating in parallel with the Distribution Network. It is recognised that some existing Generators may not comply at present with all the requirements of this section, and in such cases Network Tasman will advise the Generator which requirements these are. The Generators shall take reasonable steps to comply with these requirements within a time frame acceptable to Network Tasman. All prospective Generators must complete a Network Connection Application and Network Tasman will determine in its sole discretion whether or not connection is acceptable.

DC6.2. GENERATION CONNECTION ARRANGEMENTS

The design of connections between the Distribution Network and a Generator shall be subject to the approval of Network Tasman who at its sole discretion will determine the standards deemed acceptable.

When an Network Connection Application is made, and Network Tasman in its sole discretion determines transfer capacity, Network Tasman will agree with the Generator the voltage to which the Generator will be connected. Network Tasman may on occasion specify a different connection voltage for technical reasons, or may have additional requirements as a consequence of the voltage at connection.

Before entering into a Connection Agreement it will be necessary for Network Tasman to be reasonably satisfied in writing that the Generator will comply with all appropriate requirements of the Distribution Code.

DC6.3. GENERAL REQUIREMENTS

Embedded Generators connected at or below 11kV and with a station output not in excess of 1 MW shall, as a minimum requirement, comply with the requirements of such statutory Regulations and Electrical Codes of Practice as may be applicable. Their presence shall not restrict switching on the System.

Embedded Generators connected at a higher voltage or of a larger capacity shall, in addition to the minimum requirements, comply with the general principles of the Trans Power Connection Codes and the particular requirements of Network Tasman.

DC6.4. INFORMATION TO BE PROVIDED

Embedded Generators will fall within three basic classes for which minimum information as outlined below shall be provided to Network Tasman by the Generator. The classes are:

a) Generator with embedded generating plant connected at a voltage level of 11kV or below with a station capacity less than 1 MW.

b) Generator with embedded generating plant connected at a voltage level greater than 11kV or with a station capacity greater than 1 MW and up to 25 MW.

c) Generator with embedded generating plant with a station capacity in excess of 25 MW.

Network Tasman will, subject to the User agreeing to meet the reasonable costs, use the information provided to model the Distribution Network and to decide what method of connection will need to be employed and the voltage level at which the connection should be made.

DC6.5. INFORMATION REQUIRED

DC6.5.1. Information Required from all Embedded Generators

It will be necessary for each Generator to provide to Network Tasman information on the generating plant and the proposed interface arrangements between the generating plant and the Distribution Network. The following information shall be required by Network Tasman before entering into an agreement to connect generating plant onto the Distribution Network:

a) Generating Plant Data

(i) terminal volts (kV);

(ii) rated kVA;

(iii) rated kW;

(iv) maximum Active Power sent out (kW max) Reactive Power requirements (kVAr), if any;

(v) type of generating plant - synchronous, asynchronous, etc;

(vi) type of prime mover,

(vii) anticipated operating regime of generation, eg continuous, intermittent, peak lopping;

(viii) fault level contribution (for large machines, this may be covered by the details listed in DC5.4.2);

(ix) method of voltage control;

(x) Generator transformer details, as applicable;

(xi) requirements for Top-Up supplies and/or standby supplies.

b) Interface Arrangements

(i) the means of synchronisation between the Distribution Network and the User's System;

(ii) details of arrangements for connecting with earth that part of the Generator's System directly connected to the Distribution Network;

(iii) the means of connection and disconnection which are to be employed;

(iv) precautions to be taken to ensure the continuance of safe conditions should any earthed neutral point of the Generator's System operated at HV become disconnected from earth.

DC6.5.2. Additional Information Required from Large Embedded Generators

This section applies to Embedded Generators connected at voltages greater than 11kV or of capacity greater than 1 MW and details the technical and design information requirements not specifically covered above. The following information shall be requested by Network Tasman:

a) Technical Data

(i) generating plant information (impedances p.u. on rating);

Type of prime mover

Rated MVA

Rated MW

Generator MW/MVAr capability chart (at lower voltage terminals)

Type of excitation System

Inertia constant MW secs/MVA (whole machine)

Stator resistance

Direct axis reactances Sub-Transient

Transient

Synchronous

Quadrature axis reactances Sub-Transient

Synchronous

Time constants direct axis Sub-Transient & Transient

Quadr.Axis

Sub-Transient (stating either open or short circuit Time constant)

Zero sequence Resistance
Reactance
Negative sequence Resistance
Reactance
Generator transformer
Resistance
Reactance
MVA Rating

Tap arrangement

Vector group

Earthing

(ii) automatic voltage regulator,

A block diagram for the model of the AVR System including the data on the forward and feedback gains, time constants and voltage control limits.

(iii) speed governor and prime mover data,

A block diagram for the model of the generating plant governor detailing the governor flyball, if applicable, and System Control and turbine time constants, together with the turbine rating and maximum power.

b) Capacity and Standby Requirements;

(i) registered capacity and minimum generation of each generating unit and Power Station in MW;

(ii) generating unit and Power Station auxiliary demand (Active Power and Reactive Power) in MW and MVAr, at registered capacity conditions. For Users with own generation, this should include Top-Up requirements;

(iii) generating unit and Power Station auxiliary demand (Active Power and Reactive Power) in MW and MVAr, under minimum generation conditions. For Users with own generation, this should include Top-Up and standby requirements.

DC6.5.3. Additional Information for Trans Power Requirements

Generators are required to supply such information as requested by Trans Power. It will be the responsibility of the Generator to provide the information required to Network Tasman. Network Tasman will pass on the information to Trans Power.

DC6.6. TECHNICAL AND PERFORMANCE REQUIREMENTS

For embedded generating plant in excess of 50 MW and those subject to Central Dispatch, the electrical requirements will be those detailed in the Trans Power Code. For generation not subject to Central Dispatch, the electrical parameters required to be achieved at the generating unit terminals are defined according to the connection method and will be specified by Network Tasman. The output power should not be affected by voltage or frequency changes in the permitted operating range.

DC6.7. CONTROL ARRANGEMENTS

Network Tasman will specify if a continuously acting fast response automatic excitation control system is required to control the generating unit voltage without instability over the entire operating range of the generating unit or Power Station. This will be dependent on the size and type of generating plant or Power Station and the Distribution Network to which it is connected.

DC6.8. PROTECTION, ISLANDING AND BLACK START CAPABILITY

DC6.8.1. Co-ordination with Existing Protection

The Protection associated with embedded generating plant shall co-ordinate with the Protection associated with the Distribution Network as follows:

a) for generating plant directly connected to the Distribution Network, the Generator must meet the target clearance times for fault current flowing from the Distribution Network, in order to reduce to a minimum the impact on the Distribution Network of faults on circuits owned by the Generator. Network Tasman will ensure that the Protection settings meet its own target clearance times. The target clearance times are specified by Network Tasman;

b) the settings of any Protection controlling a circuit breaker, or operating values of any automatic switching device at any Point of Connection with the Distribution Network, shall be approved by Network Tasman;

c) it will be necessary for the generating plant Protection to co-ordinate with any auto-reclose settings specified by Network Tasman;

d) any generating unit or Power Station connected to the Distribution Network will be required to withstand, without tripping, the negative phase sequence loading incurred during the clearance of a close-up phase-to-phase fault by System Back-up Protection which will be within the plant short time rating on the Distribution Network.

DC6.8.2. Islanding

It is conceivable that a part of the Distribution Network to which Embedded Generators are connected can, during emergency conditions, become detached from the rest of the System. It will be necessary for Network Tasman to decide, dependent on local network conditions, if it is desirable for the Embedded Generators to continue to generate onto the islanded System. If no facilities exist for the subsequent resynchronisation with the rest of the Distribution Network the Embedded Generator will, under Network Tasman's instruction, ensure that the generating plant is disconnected for resynchronisation.

Under emergency conditions, there is an expectation that some generation will continue to operate outside the statutory frequency limits. However, for Embedded Generators connected to the Distribution Network at a voltage level less than 33kV, it is likely that this could mean connection within an automatic low frequency load

disconnection zone. Consequently, Embedded Generators should ensure that all Protection on generating plant should have settings to co-ordinate with those on the automatic low frequency load shedding equipment. Information on this equipment will be provided by Network Tasman on request.

DC6.8.3. Black Start Capability

Embedded Generators shall notify Network Tasman if their generating plant has a restart capability without connection to an external power supply.

DC6.9. COMMISSIONING TESTS

Where generating plant requires connection to the Distribution Network in advance of the commissioning date for the purposes of testing, the Generator must comply with the requirements of the Connection Agreement. The Generator shall provide Network Tasman with a commissioning programme for prior approval.