

# Defined operating and maintenance terms and abbreviations

**TRANSPOWER APPROVED STANDARD**

**Implementation date: December 2014**

**COPYRIGHT © 2014 TRANSPOWER NEW ZEALAND LIMITED. ALL RIGHTS RESERVED.**

*This document has been prepared solely for Transpower's purposes in relation to Transpower's assets. Transpower may vary or update the document from time to time. No liability or responsibility for the application of the information in this document to third party assets, nor for accuracy or completeness of the information (either in relation to third party assets or Transpower's assets) is accepted by Transpower. A third party must use its own judgement in applying the information contained in this document and not rely on such information.*

*Any breach of the above obligations may be restrained by legal proceedings seeking remedies including injunctions, damages and costs.*

---

## PREFACE

Following feedback on **issue 10**, changes that have occurred in *issue 11* are listed in **Appendix B**.

### CONTACT

*This document is the responsibility of Grid Performance, Operations and Maintenance Advisory Group, Transpower New Zealand Limited, Wellington. If you have any queries please contact the Operations and Maintenance Advisory Manager. If you would like to make suggestions to improve this standard, please use the "Controlled Document Feedback Form" located on the Controlled Document homepage of the Transpower website.*

### CONFIDENTIALITY

*All information disclosed in this document that is not general public knowledge must be treated as strictly confidential and may not be used or disclosed except for the purpose of developing documentation for the benefit of Transpower.*

### LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY

*Transpower New Zealand Limited makes no representation or warranties with respect to the accuracy or completeness of the information contained in the document. Unless it is not lawfully permitted to do so, Transpower specifically disclaims any implied warranties of merchantability or fitness for any particular purpose and shall in no event be liable for, any loss of profit or any other commercial damage, including, but not limited to, special, incidental, consequential or other damages.*

### MINIMUM REQUIREMENTS

*The requirements set out in Transpower's standards are minimum requirements that must be complied with by service providers, including designers and other consultants. The service provider is expected to implement any practices which may not be stated but which can reasonably be regarded as good practices relevant to the purpose of this standard. Transpower expects service providers to improve upon these minimum requirements where possible and to integrate these improvements into their procedures and quality assurance plans.*

**CONTENTS**

<b>PREFACE</b> .....	<b>2</b>
<b>1. PURPOSE</b> .....	<b>4</b>
<b>2. POLICY REQUIREMENTS</b> .....	<b>4</b>
<b>3. REFERENCES</b> .....	<b>4</b>
<b>4. TERMS AND DEFINITIONS</b> .....	<b>4</b>
4.1 General.....	4
4.2 Defined terms.....	4
<b>5. STANDARD ABBREVIATIONS</b> .....	<b>24</b>
5.1 Logging and operating sequence abbreviations.....	24
5.2 Other abbreviations.....	26
<b>A SUMMARY OF CHANGES</b> .....	<b>29</b>
<b>B CONTROLLED DOCUMENT FEEDBACK FORM</b> .....	<b>30</b>

## 1. PURPOSE

To define the meaning of terms and list the abbreviations used in power system operation and maintenance verbal and written communications.

## 2. POLICY REQUIREMENTS

Safe, secure and efficient provision of operating and maintenance services by all parties involved with the operation and maintenance of the power system through the consistent use of the relevant terms and abbreviations and a clear understanding of their meaning as defined in this Standard.

## 3. REFERENCES

TP.AG 10.11 *Standard Site Abbreviations*

Code *Electricity Industry Participation Code*

SM-EI *Safety Manual – Electricity Industry*

## 4. TERMS AND DEFINITIONS

### 4.1 General

- (a) Only those defined terms and abbreviations that are used in approved Transpower Standards and Service Specifications are included in this document.
- (b) The writers and reviewers of Standards and Service Specifications must:
  - (i) use the terms and definitions and abbreviations as published here, or;
  - (ii) if new defined terms and abbreviations need to be created use the approved change process to ensure the new terms and abbreviations are included in this document.
- (c) Each time a Standard or Service Specification is reviewed, a check of all defined terms and abbreviations must be made to ensure that they have the meaning defined in this document.
- (d) New terms and abbreviations will be added to this Standard on the day approved Standards or Service Specifications are issued or reissued.
- (e) All defined terms and abbreviations used in Standards and Service Specifications must be bolded.

### 4.2 Defined terms

#### Notes:

1. *Definitions for terms followed by "(SM-EI)" are taken directly from the current "Safety Manual – Electricity Industry".*
2. *Definitions for terms followed by "(Code)" are taken directly from the current "Electricity Industry Participation Code".*
3. *Defined terms, abbreviations and references listed in this Standard are bolded.*

Term	Definition
<b>access permit (SM-EI):</b>	The permit for access to, and work on or within the relevant minimum approach distance of, <b>equipment</b> that has been <b>isolated</b> for work other than testing under a <b>test permit</b> . Under an <b>access permit</b> , the recipient and their work party have temporary access for work activities to specific <b>isolated equipment</b> , which is in a defined state (relevant minimum approach distance is that which would apply if the <b>equipment</b> were <b>live</b> ).
<b>actioner:</b>	The person who checks, then actions, an operating sequence. This includes the Operating Sequence Controller and any Field Operator.

Term	Definition
<b>affected designated transmission customer:</b>	A designated transmission customer who has assets physically connected to the assets which are the subject of a planned <b>outage</b> or an unplanned <b>outage</b> .
<b>annual outage plan:</b>	Compilation of windows for routine maintenance and planned projects for the next financial year ahead from 1 <sup>st</sup> of July to the 30 <sup>th</sup> of June
<b>approved (SM-EI):</b>	<p>Having an asset owner's or employer's endorsement for a specified function or purpose.</p> <p><i>Notes:</i></p> <ol style="list-style-type: none"> <li>1. <i>When related to <b>equipment</b> such as portable <b>earths</b>, it shall be of suitable rating and design for the conditions of use, proven by test, and of a type either provided by the asset owner or employer and/or endorsed for use by the electricity industry or any industry sector.</i></li> <li>2. <i>In Note 1 the word "<b>equipment</b>" is used with its usual meaning.</i></li> </ol>
<b>assurance (SM-EI):</b>	<p>A statement made by the <b>employee</b> controlling <b>equipment</b> isolation points to the <b>issuer</b> of an access or <b>test permit</b> that:</p> <ol style="list-style-type: none"> <li>(a) <b>Safety measures</b> have been applied as specified; and</li> <li>(b) Those <b>safety measures</b> will remain in place until the <b>issuer</b> instructs otherwise.</li> </ol> <p><i>Note: Where practicable the statement shall be in writing.</i></p>
<b>asset owner (Code):</b>	Means a participant who owns assets used for the generation or conveyance of electricity and persons who operate such assets and, in the case of part C, includes consumers with a point of connection to the grid.
<b>automatic under frequency load disconnecting (Code):</b>	Disconnecting <b>demand</b> by devices detecting <b>grid system</b> frequency below a pre-set value and initiating automatic disconnection of <b>network feeders</b> .
<b>auto-reclose:</b>	The automatic reclosure of a circuit breaker after a predetermined time following a fault tripping.
<b>available for service:</b>	A declaration made by the <b>Grid Asset Controller</b> to the Security Coordinator that defined <b>grid system equipment</b> is <b>available for service</b> .
<b>black start (Code):</b>	Means an ancillary service required to enable a generating unit <b>isolated</b> from a grid to be <b>livened</b> and connected to the grid.
<b>blind spot:</b>	The <b>conductors</b> between a CB and the associated CT which may not be effectively protected unless dedicated Blind Spot Protection is installed.
<b>bus (busbar):</b>	A low impedance <b>conductor</b> to which several other <b>conductors</b> can be separately connected.
<b>bus section disconnecter:</b>	A <b>disconnecter</b> in series between two bus sections.

Term	Definition
<b>circuit breaker:</b>	A switching device, capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified time and breaking currents under specified abnormal conditions such as those of short circuit.
<b>circuit breaker lock-out:</b>	The status of a CB deliberately prevented from operating due to the action of a monitoring or protection device.
<b>commissioned:</b>	The operational state of <b>equipment</b> which has undergone the <b>commissioning</b> process and is brought under the normal <b>operational control</b> of a <b>Grid Asset Controller</b> .
<b>commissioning:</b>	The process of bringing new or reinstalled <b>equipment</b> into normal power system <b>operation</b> .
<b>commissioning controller:</b>	The person appointed by the designated project service provider who co-ordinates the real time on site <b>commissioning</b> activities.
<b>commissioning plan:</b>	A document that is used to plan and control the process of connecting <b>uncommissioned equipment</b> to, or withdrawing <b>equipment</b> from, the power system.
<b>compact switchgear assembly:</b>	A switching device which has an internal <b>circuit breaker</b> , <b>disconnecter</b> and <b>earth switch</b> (and CTs).
<b>compensate:</b>	<b>Operation</b> of a synchronous condenser or generating set as a synchronous condenser.
<b>competency certificate:</b>	A certificate endorsed by an employer that defines functions an <b>employee</b> is <b>competent</b> to undertake.
<b>competent (SM-EI):</b>	An <b>employee</b> is <b>competent</b> when they can demonstrate to their employer, at any time, that they have the necessary knowledge, skills and experience to carry out the work safely and to the standards used by the employer.
	<p>Notes:</p> <ol style="list-style-type: none"> <li data-bbox="655 1480 1407 1704">1. <i>The standard that the employer uses for assessing competence shall comply with regulatory requirements and shall, as a minimum, be an industry standard where such a standard is available. However, for <b>issuer</b> and recipient competence, the asset owner will set the standard or will recognise an industry standard or the employer's own standard.</i></li> <li data-bbox="655 1704 1407 1805">2. <i>Where qualifications are a legal pre-requisite for determining competence, such qualifications will be included in the standard.</i></li> <li data-bbox="655 1805 1407 1872">3. <i>Competence shall be regularly assessed so that the employer can be confident that competence is being maintained.</i></li> <li data-bbox="655 1872 1407 1998">4. <i>Competence for significant activities or roles is recorded in Documentation of Competence. A <b>competent employee</b> may need to also hold other documentation, e.g. a licence or a certificate of competence under appropriate regulations.</i></li> </ol>

Term	Definition
<b>compiler:</b>	The person who plans, compiles, checks and approves the <b>operating sequence</b> on an <b>operating form</b> .
<b>compliance:</b>	Means ensuring that the requirements of legislation are met by Transpower.
<b>conductor (SM-EI):</b>	Bare <b>conductor</b> or <b>conductor</b> not insulated to full working voltage (unless the context conveys another meaning). <b>Conductor</b> includes conductive parts.
<b>connection assets:</b>	Any grid asset at a connection node other than voltage support <b>equipment</b> that is for grid voltage support purpose and has not been installed at a customer's request.
<b>connected party (Code):</b>	Any person who has assets physically connected to the <b>grid assets</b> .
<b>constraint (Code):</b>	Means a limitation in the capacity of the grid to convey electricity caused by limitations in capability of available assets forming the grid; or limitations in the performance of the integrated power system.
<b>contingent event (Code):</b>	Clause 12.3, Chapter 1 Policy Statement, describes " <b>contingent events</b> " as the following: <b>Contingent events:</b> Events where the impact, probability of occurrence and estimated cost and benefits of mitigation are considered to justify implementing policies that are intended to be incorporated into the scheduling and <b>dispatch</b> processes pre-event. Examples are set out in Clause 12.4 of Chapter 1 of the <b>Code</b> .
<b>continuous signal receive:</b>	In distance protection schemes a signal-receive operating continuously to provide minimum time tripping for faults.
<b>control equipment:</b>	<b>Equipment</b> used directly for control of primary system <b>equipment</b> e.g. automatic voltage regulators and temperature monitors used on power transformers.
<b>control room (Code):</b>	Means the location at which asset owners have facilities to accept operational instructions from the <b>system operator</b> and to act on those instructions.
<b>controlled area:</b>	A fenced area around <b>station</b> buildings for which entry is possible only via a magnetic swipe card, key or remote controlled gate.
<b>controller:</b>	The person, located at a <b>control room</b> , who has the ( <b>dispatch</b> customer's) authority to exercise normal <b>operational control</b> of power system <b>equipment</b> in real time.
<b>dead band:</b>	A characteristic of an automatic control system, e.g. governor or voltage regulator, within which a change of value of an input signal may take place without causing a perceptible change in output signal. Sometimes referred to as dead zone.

Term	Definition
<b>decommissioned:</b>	<b>Equipment</b> permanently disconnected from the power system.
<b>de-energised (Electrical) (SM-EI):</b>	Not connected to any source of electrical supply but not necessarily at zero voltage, e.g. may have an induced voltage.
<b>demand (Code):</b>	A measure of the rate of consumption of electrical energy.
<b>disable:</b>	Prevent the functioning, e.g. of a protection and/or control system.
<b>discharged (electrical):</b>	Short circuited and/or connected to earth in such a manner as to ensure an effective dissipation of stored electrical energy.
<b>disconnector:</b>	A switch that, when in the open position, provides isolation in accordance with specified requirements.
<b>disconnecting circuit breaker:</b>	A <b>circuit breaker</b> where the disconnecting function is designed into the main contact separation when locked in the open position.
<b>dispatch (Code):</b>	Means the process of: <ul style="list-style-type: none"> <li>(a) pre-<b>dispatch</b> scheduling to match expected supply with expected <b>demand</b>, and to allocate ancillary service offers and transmission offers to match expected grid conditions; and</li> <li>(b) rescheduling to meet forecast <b>demand</b>; and</li> <li>(c) issuing instructions based on the pre-<b>dispatch</b> schedule and the real time conditions to manage resources to meet the actual <b>demand</b>.</li> </ul>
<b>dispatch customer</b>	Any person who receives <b>dispatch</b> services from the <b>system operator</b> , or who may affect those services, and includes any person who is one or more of an ancillary service provider, an asset owner, a direct consumer, an energy injection customer, an energy off-take customer, a <b>generator</b> , the <b>grid asset owner</b> or a <b>network manager</b> .
<b>dispatch instructions (Code):</b>	An instruction formulated and issued by the <b>system operator</b> in accordance with clause 13.72 of Sub part 2 of Part 13 of the <b>Code</b> .
<b>distance to fault</b>	Line impedance % value used in nonogram calculation to determine the most probable fault location giving the closest towers on a faulted circuit.
<b>disturbance recorder:</b>	A device that continuously monitors electrical analogue and/or digital information. In the event of a disturbance this information is recorded/ stored and available for subsequent analysis.
<b>documentation of competence (SM-EI):</b>	Documentation which: <ul style="list-style-type: none"> <li>(a) Has a personal identifier, e.g. name, address, preferably</li> </ul>



Term	Definition
	<p>a photograph;</p> <p>(b) Records the specified roles for which the <b>employee</b> is deemed <b>competent</b>. The documentation shall:</p> <p>(i) describe the competence levels achieved by the <b>employee</b></p> <p>(ii) define any limits on the type of work that can be carried out by the <b>employee</b> and/or the place in which it may be done</p> <p>(iii) contain for each competence, the date of the last assessment and the date of the next assessment.</p> <p><i>Notes:</i></p> <p>1. <i>The documentation may relate to a specific competence, e.g. working unsupervised in a <b>restricted area</b>, or for several types of competence.</i></p> <p>2. <i>The documentation is normally issued to the <b>employee</b> by the employer.</i></p>
<b>drop load test:</b>	A test involving the sudden removal of load from a generator to measure speed rise and to test the operation of overspeed and other protective devices.
<b>dropper:</b>	A short length of <b>conductor</b> making a connection between a HV bus (or other item of <b>equipment</b> ) and an item of <b>equipment</b> situated below that bus etc.
<b>earth fault factor (Code): IEC 50 (604-03-06)</b>	At a given location of a three-phase system, and for a given system configuration, the ratio of the highest r.m.s. phase-to-earth power frequency voltage on a healthy phase during a fault to earth affecting one or more phases at any point on the system to the r.m.s. value of phase-to-earth power frequency voltage which would be obtained at the given location in the absence of any such fault.
<b>earthed (SM-EI):</b>	Effectively connected to the general mass of earth.
<b>earthing device (SM-EI):</b>	An <b>approved</b> device for temporarily earthing <b>isolated equipment</b> for work access. <i>Note: Such devices include earth switches, earthing trucks and <b>approved portable earths</b>.</i>
<b>earths:</b>	A generic term for the apparatus used for earthing.
<b>embedded assets:</b>	Any <b>equipment</b> and plant which is physically connected to a <b>network</b> and which is:
	<p>(a) Capable of generating:</p> <p>(i) greater than five MW of electricity, or;</p> <p>(ii) equal to or less than five MW and which in the reasonable opinion of the <b>system operator</b>, may affect the security, power quality or <b>operation</b> of the <b>grid system</b> and the <b>system operator</b> has given notice to the relevant <b>network</b> manager accordingly, or;</p>

Term	Definition
	(b) Capable of consuming an amount of electricity which, in the reasonable opinion of the <b>system operator</b> , may affect the security, power quality or <b>operation</b> of the <b>grid system</b> and the <b>system operator</b> has given notice to the relevant <b>network</b> manager accordingly.
<b>employee (SM-EI):</b>	Any person who is required to work in accordance with <b>SM-EI</b> regardless of for whom the person works.
<b>enable:</b>	Restore the functioning: e.g. of a protection and/ or control system, after that system has been <b>disabled</b> .
<b>energised (SM-EI):</b>	Electrically <b>livened</b> , or connected to or containing some other source of energy, e.g. steam, compressed air, hydraulic energy, etc.
<b>energy co-ordinator:</b>	The Transpower <b>employee</b> who manages the <b>dispatch</b> processes at the <b>generator/ transmission grid interface</b> .
<b>ensure (SM-EI):</b>	In the context of access and <b>test permits</b> means: (a) To be accountable for the requirement being carried out; (b) To carry out the requirement personally or have it carried out by another person.
<b>equipment (Code):</b>	Means any of: (a) assets or a <b>network</b> physically connected to the grid; (b) assets or a <b>network</b> forming part of the grid; (c) assets or a <b>network</b> not physically connected to the grid but which, in the reasonable opinion of Transpower, can affect the management, security, operation or performance characteristics of the grid; or (d) other <b>equipment</b> not physically connected to the grid but which, in the reasonable opinion of Transpower, can affect the security or <b>operation</b> of the grid, or power quality.
<b>equipment (SM-EI):</b>	Apparatus, transmission/ distribution lines, cables, and circuits or plant (electrical, mechanical, civil) that can be <b>removed from service</b> and which, when it is <b>removed from service</b> , if <b>energised</b> or put back into service inadvertently, could be a hazard to <b>employees</b> and other persons. <i>Notes:</i> 1. Such <b>equipment</b> is typically fixed in location, and used for the generation, transmission and distribution of electricity. 2. Instead of this defined meaning, the term " <b>equipment</b> " is also used in a few places in these rules with its usual general meaning, e.g. personal protective <b>equipment</b> . Such <b>equipment</b> is typically personal protective <b>equipment</b> , mobile or portable <b>equipment</b> and is used for maintenance or construction. Where the term is used with its usual general meaning, this is noted unless the meaning is obvious.
<b>feeder:</b>	A circuit which provides a direct connection to a customer.

Term	Definition
<b>field operator:</b>	Actions <b>operating sequences</b> under the instruction of the <b>Operating sequence Controller</b> .
<b>forced outage (emergency and standby power systems):</b>	A power <b>outage</b> that results from the failure of a system component, requiring that it be taken out of service immediately either automatically or by manual switching operations, or an <b>outage</b> caused by improper <b>operation of equipment</b> or human error. This type of power <b>outage</b> is not directly controllable and is usually unexpected.
<b>gas flooding area:</b>	Any area, space or enclosure that is subject to deliberate flooding by a non-flammable gas, e.g. machine enclosures, switch rooms, etc.
<b>gas free (SM-EI):</b>	A condition where the gas concentration in air is below the gas free limit.
<b>gas free limit (SM-EI):</b>	The lower of the published threshold limit value for the gas in air, or 25 % of the lower explosive limit of the gas in air.
<b>gas hazard area (SM-EI):</b>	The defined area or location in which leakage of a flammable gas or gas mixture into the air may cause the concentration in air of the gas or gas mixture to exceed the gas free limit.
<b>generating set:</b>	A single rotating machine transforming mechanical or thermal energy into electricity.
<b>generator (Code):</b>	Means a person who owns generating units connected to a <b>network</b> , or any person who acts, in respect of part G, part H and part J, on behalf of any person who owns such generating units, and includes embedded <b>generators</b> , intermittent <b>generators</b> and co- <b>generators</b> .
<b>grid asset controller:</b>	A Transpower employee who carries out power system equipment operating and/or control functions to the requirements of the System operator and grid asset owner.
<b>grid outage coordinator</b>	A Transpower <b>employee</b> who liaises with connected parties on maintenance and <b>commissioning</b> activities and obtains their agreement for the proposed work <b>outages</b> .
<b>grid outage planner</b>	A Transpower employee who collates approved plant requests submitted for contractor service provider access to power system equipment and produces efficient and appropriate operating documentation for use by the Grid Asset Controller in accordance with Transpower Service Specifications and other approved Transpower instructions.
<b>good industry practice (Code):</b>	In relation to transmission, means the exercise of that degree of skill, diligence, prudence, foresight and economic management, as determined by reference to good international practice, which would reasonably be expected from a skilled and experienced asset owner engaged in the management of a transmission <b>network</b> under conditions comparable to those

Term	Definition
	applicable to the grid consistent with applicable law, safety and environmental protection. The determination is to take into account factors such as the relative size, duty, age and technological status of the relevant transmission <b>network</b> and the applicable law.
<b>grid asset owner (Code):</b>	Transpower New Zealand Limited.
<b>grid assets (Code):</b>	Means assets and other works (including land and buildings) owned or operated by Transpower, which form part of the grid or are required to support the grid.
<b>grid emergency (Code):</b>	Means a situation where: <ul style="list-style-type: none"> <li data-bbox="659 689 1407 891">(a) in the reasonable opinion of the <b>system operator</b>, one or more of the events set out in clause 5(1) of technical code B of schedule 8.3 of part 8 has occurred, or is reasonably expected to occur and urgent action is required of the <b>system operator</b> or participants to alleviate the situation; or</li> <li data-bbox="659 891 1407 987">(b) independent action (as set out in clause 9(2) of technical code B of schedule 8.3 of part 8) is required of a participant to alleviate the situation.</li> </ul>
<b>grid emergency notice (Code):</b>	A notice issued by the <b>system operator</b> in accordance with technical code B of Schedule 8.3 of Part 8 of the <b>Code</b> .
<b>grid exit point:</b>	A point of connection where electricity may flow out of the grid.
<b>grid interface (c):</b>	Means the assets used to make a connection to the grid (as the case may be), including associated protection, control and communication systems. The term includes the interface between assets forming part of the grid.
<b>grid system</b>	That part of the New Zealand electric power system which electrically interconnects any or all points of service.
<b>high voltage (HV) (SM-EI):</b>	Any voltage exceeding 1000 V a.c. or 1500 V d.c.
<b>hot work (SM-EI):</b>	Any activity liable to produce a spark, hot metal or a naked flame. Activities designated as hot work include grinding, gas cutting, welding, drilling, use of a heat gun and any other activity which could provide an ignition source.
<b>HV metalclad switchgear:</b>	<b>High voltage</b> switchgear in which the circuit breaker, <b>feeder</b> connection, busbar connection and ancillary items are located in separate metal-partitioned compartments. The compartments incorporate air or compound, or SF <sub>6</sub> gas insulation that may provide phase segregation.
<b>incomer:</b>	A circuit breaker that connects a transformer to a supply bus (usually the LV CB).

Term	Definition
<b>induction (electrical):</b>	The phenomenon causing voltage to be present in a <b>conductor</b> (line, bus, etc.) due to the influence of an adjacent <b>energised conductor</b> . <b>Induction</b> can produce very <b>high voltages</b> . This includes both electro-magnetic and electro-static effects.
<b>industry procedures (SM-EI):</b>	Procedures that are recognised by the electricity industry generally, or by a particular sector of the industry, including service providers working for the industry, as being the recommended method of achieving the required outcome in a way that avoids harm to any <b>employee(s)</b> and to other persons.
<b>interconnection assets:</b>	Any grid asset that is not a connection asset, or an HVDC asset.
<b>interested participant:</b>	A participant that has given Transpower notice pursuant to clause 3.2.3 of Part F of the <b>Code</b> that it wishes to be consulted in respect of a planned <b>outage</b> of specified <b>interconnection assets</b> .
<b>interruptible demand:</b>	<b>Demand</b> which, by agreement between the <b>system operator</b> and an ancillary service provider, may be disconnected without prior warning for the purposes of security of the <b>grid system</b> .
<b>intertrip:</b>	A signalling system whereby a signal initiated at one <b>station</b> trips a CB at another <b>station</b> .
<b>islanded operation:</b>	The condition when a section of the power system is disconnected from and operating independently of the remainder of the power system.
<b>isolate (verb):</b>	To deliberately disconnect <b>equipment</b> . Examples of this are: (a) Opening of a <b>disconnect</b> ; (b) Removal of VT secondary fuses.
<b>isolated (SM-EI):</b>	Deliberately disconnected from external sources of harm, e.g. energy (electrical or mechanical) or asphyxiating, toxic or flammable gas, and rendered incapable of being reconnected without predetermined deliberate action. 1. Isolation can be achieved by opening <b>disconnectors</b> , closing valves or similar actions. 2. Where practicable, points of isolation shall be <b>tagged</b> in the <b>isolated</b> position. 3. Despite <b>equipment</b> being <b>isolated</b> , it may still contain hazards, e.g. induced voltage, LV supplies, stored energy, toxic gas.
<b>issuer (SM-EI):</b>	A <b>competent employee</b> , who issues, modifies, receives back, transfers, or cancels access and <b>test permits</b> . <i>Note: The competence needs to be documented; refer to the definition Documentation of Competence.</i>
<b>joint control:</b>	Control and automatic load sharing of generators and HVDC

Term	Definition
	poles on a group basis.
<b>jumper (connection):</b>	A length of <b>conductor</b> connecting adjacent spans of a <b>transmission circuit conductor</b> , or <b>switchyard bus or equipment</b> .
<b>live (SM-EI):</b>	Connected to a source of electrical supply or subject to hazardous induced or capacitive voltage.
<b>live work:</b>	Work performed on or near normally <b>energised conductors</b> , without using isolating and earthing procedures during the work, and at distances closer than the minimum approach distances specified in <b>SM-EI Rule 3.703</b> .
<b>local control:</b>	Control of an operation at a point on, or adjacent to, the controlled device.
<b>local service:</b>	Local a.c. supply providing power for <b>station</b> auxiliary services.
<b>lock off:</b>	To prevent operation by means of a lock.
<b>lock-out box:</b>	A lockable facility for holding keys, fuses, etc.
<b>log (the) (SM-EI):</b>	The collection of <b>log books</b> , <b>log</b> sheets, completed access and <b>test permit</b> forms and other records, including electronic and tape, that together form a complete record of operating events in a <b>station</b> or operating area.
<b>log book:</b>	A book designated for entering a handwritten statement of power system <b>equipment</b> operational events.
<b>logged (SM-EI):</b>	Recorded in the <b>log</b> .
<b>loss of communication (Code):</b>	A sustained disruption of communications between the <b>system operator</b> and the <b>control</b> rooms of one or more <b>dispatch</b> customers, such that <b>operation</b> of the <b>grid system</b> is affected or is likely to be affected.
<b>loss of connection:</b>	Transpower initiated event that results in a loss of electrical supply to a <b>connected party</b> .
<b>low voltage (LV) (SM-EI):</b>	Any voltage exceeding 50 V a.c. or 120 V ripple free d.c. but not exceeding 1000 V a.c. or 1500 V d.c.
<b>Manual Operational Log (MOL):</b>	Electronic <b>logging</b> tool used by the Grid Asset Controllers and system co-ordinators for manually logging operating and other events related to the <b>operation</b> of the power system
<b>maintenance switcher:</b>	A <b>competent</b> service provider <b>employee</b> who is certificated and authorised to <b>recieve operational control</b> of defined power system <b>equipment</b> from a <b>controller</b> (or other <b>maintenance switcher</b> ) and actions those operating tasks necessary for gaining safe and secure work activity access.

Term	Definition
<b>maintenance switching time:</b>	The time, before and after work time, required to make <b>equipment</b> under the <b>operational control</b> of the <b>maintenance switcher</b> ready for: (a) Work access, and; (b) Return to an <b>available for service</b> state.
<b>Market Data Entry (MDE):</b>	Tool to indicate to the wholesale energy market the security and pricing impact of <b>outages</b>
<b>maximum voltage limit:</b>	That voltage level, above the nominal voltage at the point of service, at which <b>dispatch</b> customers and connected parties are required to take independent corrective action to minimise the risk of damage to <b>equipment</b> . The limits are set out in the table contained in Rule 3.1.1 of Section III of Part C of the <b>Code</b> .
<b>minimum approach distances (SM-EI):</b>	The minimum distances when approaching <b>live conductors</b> that shall apply to <b>employees</b> , including conductive material carried by them, vehicles, and mobile plant.
<b>minimum voltage limit (Code):</b>	When any grid voltage reaches the minimum voltage limit set out in the table contained in clause 8.22 (1) subpart 2 of Part 8 and is sustained at or below that limit, the <b>system operator</b> may require the disconnection of <b>demand</b> in accordance with rule 8.24 in appropriate block sizes until the voltage is restored to above the minimum voltage limit.
<b>mobile plant (SM-EI):</b>	Cranes, elevating work platforms, tip trucks or similar plant, any <b>equipment</b> fitted with a jib or boom and any device capable of raising or lowering a load.
<b>MOS Notes:</b>	Electronic tool used by the <b>system operator</b> to detail security implications, required actions and other information needed for managing grid <b>outages</b> , including IT systems.
<b>multilock box:</b>	Lock-out box used in a multilocking system.
<b>multilocking system:</b>	A system of locks associated with locking off <b>safety measures</b> .
<b>network (Code):</b>	Means the grid, a local <b>network</b> or an embedded <b>network</b> .
<b>network risk register:</b>	A register of the system deficiencies, or situations where system security cannot be maintained, and requires further investigation to determine if further grid or <b>network</b> investment is required
<b>next day:</b>	For the purpose of the <b>RCB</b> process, the next day is as the period following the current business day up to and including the next business day.
<b>notified planned outages (Code):</b>	Means those planned <b>outages</b> of assets forming part of or connected to the grid or local <b>network</b> which have been planned by the asset owners concerned and have been notified

Term	Definition
	to the <b>system operator</b> in accordance with technical code D of schedule 8.3 of part.
<b>open (verb):</b>	Electrical: to operate a switch, CB, <b>disconnecter</b> etc. to prevent the flow of an electric current. Mechanical: to operate a gate or valve to permit the passage of a substance.
<b>operating form:</b>	A form used for listing an <b>operating sequence</b> or single action.
<b>operating sequence:</b>	A planned sequence of operating actions (or a single action) compiled on a designated form.
<b>operating sequence controller:</b>	The person who holds <b>operational control</b> and thus has authority and responsibility for controlling the actioning of an <b>operating sequence</b> . The <b>Operating sequence Controller</b> will also be an <b>actioner</b> (e.g. <b>Grid Asset Controller</b> , <b>Maintenance switcher</b> or <b>Connected party Controller</b> ).
<b>operating time:</b>	The time required for the removal from/ preparing for the return to service of power system <b>equipment</b> .
<b>operation (of the grid system):</b>	The real time co-ordination of the conveyance of electricity across the <b>grid system</b> , and operate the <b>grid system</b> is to be interpreted accordingly.
<b>operational control (of equipment)</b>	The exercising of authority, whether direct or delegated, to control <b>equipment</b> .
<b>operational request:</b>	A request for gaining work activity access to power system <b>equipment</b> or where work activities will or can impact on the security, reliability and/or <b>operation</b> of the power system.
<b>outage (Code):</b>	When <b>interconnection assets</b> or connection assets are temporarily not provided in accordance with the requirements of a transmission agreement or the requirements of section VI. Without limiting the above, and the <b>outage</b> includes a situation where: <ul style="list-style-type: none"> <li>(a) Transpower removes assets from service temporarily;</li> <li>(b) Assets are not able to be provided due to grid emergencies, in order to deal with health and safety issues, or due to circumstances beyond Transpower's reasonable control;</li> <li>(c) Transpower reduces the capacity of branches below the capacity required by a transmission agreement or rule 3 of section VI;</li> <li>(d) Transpower changes the configuration of the grid.</li> </ul>
<b>outage co-ordination (Code):</b>	The actions of the <b>system operator</b> undertaken, in accordance with technical Code A of Schedule 8.3 of Part 8 of the <b>Code</b> , to co-ordinate notified planned <b>outages</b> of <b>equipment</b> forming part of, or connected to the <b>grid system</b> and the actions of the asset owners undertaken in accordance with technical Code D of Schedule 8.3 of Part 8 of the <b>Code</b> , to co-ordinate planned



Term	Definition
	<p><b>outages of equipment.</b>  <i>Note: The <b>equipment</b> may consist of, or include, secondary <b>equipment</b> or substations required for control, protection, communications, etc.</i></p>
<b>outage plan:</b>	An overall programme for <b>outage</b> windows of power system <b>equipment</b> . It is a living document and under continual review.
<b>outage plan (Code):</b>	The annual <b>outage plan</b> prepared under the <b>outage protocol</b> .
<b>outage protocol (Code):</b>	<p>Prepared in accordance with section VII of Part F specifying:</p> <ul style="list-style-type: none"> <li>(a) the circumstances in which Transpower may temporarily remove any assets forming part of the grid from service or reduce the capacity of assets to efficiently manage the <b>operation</b> of the grid;</li> <li>(b) the procedures and policies for Transpower to plan for <b>outages</b> and for carrying out such <b>outages</b> to: <ul style="list-style-type: none"> <li>(i) ensure that Transpower involves designated transmission customers in making decisions on planned <b>outages</b> as much as possible;</li> <li>(ii) ensure coordination between Transpower and designated transmission customers</li> <li>(iii) enable Transpower to efficiently manage the <b>operation</b> of the Grid</li> </ul> </li> <li>(c) specifies the procedures and policies for dealing with unplanned <b>outages</b> of the grid.</li> </ul>
<b>outage time:</b>	<p>The time during which power system <b>equipment</b> is not <b>available for service</b>. It includes:</p> <ul style="list-style-type: none"> <li>(a) Operating time;</li> <li>(b) <b>Operational control (OC)</b> transfer process time;</li> <li>(c) Maintenance switching time, and;</li> <li>(d) Work time.</li> </ul>
<b>permission to proceed:</b>	The approval given by the <b>Security co-ordinator</b> to the <b>Grid Asset Controller</b> to proceed with the <b>operation</b> of <b>grid system equipment</b> .
<b>permit:</b>	A collective term for the <b>access permit</b> and the <b>test permit</b> . Under a <b>permit</b> , the recipient and their work party have temporary access for work activities to specific <b>isolated equipment</b> , which is in a defined state.
<b>permit area (SM-EI):</b>	<p>A defined area, marked at ground or floor level, within which (including above or below):</p> <ul style="list-style-type: none"> <li>(a) There is <b>equipment</b> under an access or <b>test permit</b>.</li> <li>(b) Additional precautions may need to be taken to avoid harm from <b>equipment</b> or parts of <b>equipment</b>, including that adjacent to, above or below that under the access or <b>test permit</b>.</li> </ul>
	<p><i>Notes:</i></p> <ol style="list-style-type: none"> <li>1. <i>Access and <b>test permits</b> are issued for work on, or within the relevant minimum approach distance of, <b>equipment</b>,</i></li> </ol>

Term	Definition
	<p><i>not for work in permit areas.</i></p> <p>2. <i>There may be live equipment within the permit area i.e. it is not the intention of the permit area to delineate between live, de-energised and isolated equipment.</i></p> <p>3. <i>In switchyards, each permit area shall have a defined point of entry.</i></p>
<b>permit rope (SM-EI):</b>	<p><b>Permit area</b> boundary marker -yellow and green marker used at <b>stations</b> solely for the purpose of defining the boundaries of the <b>permit areas</b>. In <b>switchyards</b>, the marker shall be continuous.</p> <p><i>Note: Where the permit area has defined point(s) of entry, the marker shall be continuous, e.g. rope, tape, chain.</i></p>
<b>planned operating:</b>	Operating which has been subjected to the normal planning/ approval (PROMS) process.
<b>planned outage (Code):</b>	For the purposes of part 12 of the <b>Code</b> , means an <b>outage</b> carried out in accordance with the planning requirements set out in the <b>Outage Protocol</b> .
<b>plant request:</b>	Consolidation of individual operational requests that share the same window.
<b>point of connection (Code):</b>	Means a point where electricity may flow into or out of a <b>network</b> , and for the purpose of technical Code A of schedule 8.3 means a grid injection point or a <b>grid exit point</b> .
<b>point of isolation:</b>	<p>(a) Electrical: A <b>disconnecter</b>, fuse-link, withdrawable CB etc. that, when open or removed, provides a specific minimum separation distance between <b>live equipment</b> and that which is <b>isolated</b>.</p> <p>(b) Mechanical: A gate, damper, valve etc. that, when closed, provides a physical barrier between a source of harm and <b>equipment</b> which is <b>isolated</b>.</p>
<b>point of service (Code):</b>	Means a normally contiguous electrical busbar of a Particular voltage where Transpower as a grid owner has agreed to provide services to one or more designated transmission customers.
<b>portable earth/ temporary earth (SM-EI):</b>	<p>An <b>approved</b> portable device for temporarily earthing <b>isolated equipment</b> for work access.</p> <p><i>Notes:</i></p> <p>1. <i>For three phase a.c., a "set of earths" consists of portable earths that, when applied, effectively short circuit the three phases as well as connecting them to earth.</i></p> <p>2. <i>It does not include earthing trucks or other earthing devices for special situations.</i></p>
<b>power quality:</b>	The electrical conditions to be found on the <b>grid system</b> at any physical point.
<b>procedure:</b>	Specified way to perform an activity.

Term	Definition
<b>process:</b>	Set of inter-related resources and activities which transform inputs into outputs.
<b>project manager:</b>	A Transpower <b>employee</b> who is responsible for overseeing a contract.
<b>project engineer:</b>	A person who is responsible on behalf of the project manager for the overall co-ordination of all project activities involving the <b>commissioning/ decommissioning of equipment</b> .
<b>protection:</b>	The <b>equipment</b> provided for detecting abnormal conditions in a power system and then initiating fault clearance or actuating signals or indications.
<b>public area:</b>	That part of a <b>station</b> or communications site that is open for public access.
<b>purging:</b>	The controlled removal of a fluid or gas by replacing it with another.
<b>quality audit:</b>	Systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.
<b>quality system:</b>	Organisational structure, procedures, processes and resources needed to implement quality management.
<b>quality manual:</b>	Document stating the quality policy and describing the quality system of an organisation.
<b>ramp rate:</b>	The rate at which the power is increased or decreased on a generator, on the HVDC link, or in the load. Expressed as MW/minute.
<b>ramp up (HVDC):</b>	The automatic change in mercury arc or thyristor pole power transfer during start up, shut down, or faults to attempt to maintain required overall HVDC power transfer.
<b>reactive power control:</b>	A control system which monitors and controls reactive power flows to ensure system voltages remain within minimum and maximum limits.
<b>ready for livening notice:</b>	The Transpower notice which confirms that the <b>equipment</b> to be livened is ready to be connected to the power system.
<b>recall time:</b>	<p>The estimated time required for equipment, previously removed from service for work, to:</p> <ul style="list-style-type: none"> <li>• Be returned to a condition suitable for service, and</li> <li>• Have operational control transferred from the service provider to the Grid Asset Controller.</li> </ul>

Term	Definition
<b>received</b>	Term used when <b>logging</b> that a <b>maintenance switcher</b> has <b>received</b> OC of <b>equipment</b> .
<b>recipient (SM-EI):</b>	A <b>competent employee</b> who receives, holds, may request transfer of, and returns, an access or <b>test permit</b> . <i>Note: The competence needs to be documented; refer to the definition documentation of competence.</i>
<b>recipient applied safety measures (SM-EI):</b>	See <b>Safety measures</b> .
<b>reclose block:</b>	The disabling of CB auto-reclose relays and/or the application of tags on specified <b>equipment/ transmission circuits</b> to prevent their re-livening either automatically or manually.
<b>Reclose Block Agreement:</b>	A statement made by the <b>RCB Agreement</b> issuer to a recipient that <b>equipment</b> which livens specified <b>equipment/ transmission circuit</b> under <b>live</b> access will not be operated either automatically or manually.
<b>reclose block approval:</b>	Approval given by the <b>security co-ordinator</b> to the <b>grid asset controller</b> to disable CB auto-reclose relays for the purpose of carrying out <b>live work on</b> specified <b>equipment/ transmission circuit</b> .
<b>reclose block request:</b>	A request for the auto-reclose functions on in-service power system <b>equipment</b> to be turned off/ disabled and that requires a <b>RCB Agreement</b> to enable <b>live work</b> to proceed.
<b>remote:</b>	Away from equipment, either in a relay room or off site.
<b>removed from service:</b>	Equipment disconnected from the grid and unable to perform its designated function.
<b>restart:</b>	The HVDC equivalent of an auto-reclose for a.c. <b>transmission circuits</b> .
<b>restricted area (SM-EI):</b>	An area or enclosure containing <b>equipment</b> that could cause serious harm, e.g. a <b>switchyard</b> . <i>Note: The area or enclosure will be subject to an entry control system determined by the asset owner.</i>
<b>restoration (of equipment):</b>	The action of returning equipment to service that had been manually or automatically removed from service.
<b>restoration time:</b>	The estimated time for the Grid Asset Controller to restore equipment to an available for service state, that had been removed from service either: <ul style="list-style-type: none"> <li>Automatically following a fault, or</li> <li>Manually, following planned or unplanned work, upon receipt of operational control.</li> </ul>
<b>returned to service:</b>	Equipment reconnected to the grid and able to perform its designated function.

Term	Definition
<b>risk of trip:</b>	An operating condition where there is a possibility of <b>equipment</b> tripping or HVDC blocking, resulting from work being done on or near power system <b>equipment</b> .
<b>runbacks:</b>	An automatic limit on maximum HVDC transfer when: <ol style="list-style-type: none"> <li data-bbox="659 465 1406 566">(a) There is loss of HVDC signalling between Benmore and Haywards and hence loss of HVDC stabiliser controls, or</li> <li data-bbox="659 566 1406 667">(b) There are several <b>transmission circuit</b>, transformer or condenser <b>outages</b> at Haywards and/or Bunnythorpe, or</li> <li data-bbox="659 667 1406 701">(c) To limit d.c. earth switch current at Benmore, or</li> <li data-bbox="659 701 1406 734">(d) Haywards Voltage Stabiliser is off.</li> </ol>
<b>safety measures (SM-EI):</b>	Measures taken to ensure work can be safely undertaken under an access or <b>test permit</b> , e.g. isolation, tagging and earthing. They are either <b>issuer</b> applied, or recipient applied. <i>Notes:</i> <ol style="list-style-type: none"> <li data-bbox="659 902 1406 958">1. <b>Issuer applied safety measures</b> include those applied by the <b>employee</b> issuing an assurance.</li> <li data-bbox="659 958 1406 1014">2. <b>Issuer applied safety measures</b> include those applied on behalf of the <b>issuer</b>, prior to issue of the access or <b>test permit</b>.</li> <li data-bbox="659 1014 1406 1115">3. <b>Recipient applied safety measures</b> are applied, where necessary, in addition to those applied for access or <b>test permit</b> issue.</li> <li data-bbox="659 1115 1406 1216">4. <b>Earths</b> applied by the work party to transmission or distribution circuits at the worksite are examples of recipient applied <b>safety measures</b>.</li> <li data-bbox="659 1216 1406 1317">5. <b>Safety measures</b> may consist of ensuring that systems such as seal oil and hydraulic oil remain in service, in order that the <b>equipment</b> to be worked on remains in a safe state for work.</li> </ol>
<b>safety observer (SM-EI):</b>	An <b>employee</b> assigned the duty of observing and warning against unsafe approach to <b>live equipment</b> .
<b>SCADA outage scheduler (SOS):</b>	Application used by the <b>Grid Asset Controller</b> to manage daily switching activities and change to offers to the <b>system operator</b> .
<b>security co-ordinator:</b>	The Transpower person with the overall authority to manage the real-time secure <b>operation</b> of the power system.
<b>security management plan:</b>	A plan outlining the options to manage security pre contingency.
<b>short time planning period:</b>	Any <b>outage</b> planning required for any new or changed <b>outages</b> starting after 00:01 hrs of the current business day through to 23:59 of the next business day
<b>shutters (switchgear):</b>	Lockable barriers to prevent access into the spouts of withdrawable switchgear.
<b>spinning reserve:</b>	The available capacity of synchronised plant which can

Term	Definition
	provide immediate assistance during a fall in system frequency.
<b>sprag:</b>	To render <b>equipment</b> incapable of operating by mechanically preventing its movement.
<b>stability event (Code):</b>	Severe power system faults that might lead to a defined contingent event, extended contingent event or loss of an interconnecting transformer or busbar section. For these faults it is deemed prudent to ensure that the transient and dynamic stability of the power system is maintained.
<b>station (SM-EI):</b>	A general term to cover substations, power stations and switching stations. It includes <b>switchyards</b> . <i>Note: It does not apply to ground mounted distribution substations, pole mounted substations, reclosers, <b>disconnectors</b> and sites of a similar nature.</i>
<b>supplementary operating form:</b>	An extra <b>operating form</b> used when additional items are required when actioning an existing <b>operating sequence</b> .
<b>supply :</b>	A measure of the rate of production of electrical energy.
<b>switchgear group:</b>	A circuit breaker and related <b>disconnectors</b> . The relationship is determined by switchgear numbering.
<b>switchyard (SM-EI):</b>	A <b>restricted area</b> , enclosed by a security fence, containing normally <b>live conductors</b> and/or other exposed <b>live equipment</b> .
<b>system number (Code):</b>	Means a coded number assigned to assets referred to in rule 2.1.1 of technical code A of schedule 8.3 of part 8 for the purposes of the <b>operation</b> of the grid and the management of the assets that, when used in conjunction with a locality name, uniquely identifies the assets.
<b>system operator (Code):</b>	Means the service provider for the time being who is appointed as <b>system operator</b> pursuant to the regulations.
<b>system operator procedures:</b>	Documentation provided and published by the <b>system operator</b> from time to time describing specified details of the process by which the <b>system operator</b> and <b>dispatch</b> customers meet the requirements of the <b>Code</b> .
<b>system test (Code):</b>	Means a test conducted on assets, with that asset connected to the grid, to assess the interaction of that asset with the grid.
<b>tag:</b>	An <b>approved</b> marking device used to mark <b>equipment</b> against an inadvertent change to the state of an isolation point.
<b>tagged (SM-EI):</b>	Marked to safeguard against an inadvertent change to the state of an isolation point or earthing continuity point. <i>Notes:</i>

Term	Definition
	<ol style="list-style-type: none"> <li>1. Sometimes <b>tags</b> are applied to ensure a system remains in service to provide safety under an access or <b>test permit</b>, e.g. seal oil pumps must remain in service with hydrogen filled machines.</li> <li>2. Specially coded and coloured locks may be used as <b>tags</b>.</li> </ol>
<b>test permit (SM-EI):</b>	The <b>permit</b> for access to <b>equipment</b> that has been <b>isolated</b> for testing where procedures are required to control hazards created by the testing. Under a <b>test permit</b> , the recipient and their work party have temporary access for work activities to specific <b>isolated equipment</b> , which is in a defined state.
<b>transfer of operational control process time:</b>	The time required for the implementation and recording of the transfer of <b>operational control</b> to/ from the <b>controller</b> and the <b>maintenance switcher</b> .
<b>transfer of operational control:</b>	The transfer of authority and responsibility to control the <b>operation</b> of defined power system <b>equipment</b> within specified boundaries and conditions.
<b>transient fault:</b>	A fault that is self rectified immediately after the faulted <b>equipment</b> is tripped or disconnected.
<b>transmission circuit (Code):</b>	Chapter 7 of the Policy Statement 186 means: 186.1 any <b>transmission line</b> owned by a <b>grid owner</b> . 186.2 any distribution line owned by a participant to which not less than a sum of 60 MW of generation is connected and which distribution line is connected to the grid primarily for the purpose of injection into the grid.
<b>transmission line:</b>	A series of structures carrying overhead one or more <b>transmission circuits</b> .
<b>transmission offer:</b>	The information that asset owners of <b>equipment</b> forming part of or connected to the <b>grid system</b> submit to the <b>system operator</b> in the form set out in attachment 1C in order to make <b>equipment</b> forming part of the <b>grid system</b> available to the <b>system operator</b> for <b>dispatch</b> .
<b>trip on close:</b>	Also known as "Switch on to Fault". A feature of some distance protection enabling it to trip instantaneously when its associated circuit breaker closes on to a fault, e.g. closed earth switch.
<b>unplanned operating:</b>	Operating (including that required to manage unplanned power system events (which time and/or circumstances prevent being subjected to the normal planning/ approval (PROMS) process.
<b>unplanned outage (Code):</b>	An <b>outage</b> not planned in accordance with the planning requirements set out in the <b>outage protocol</b> .
<b>voltage collapse (Code): IEC 50 (604-01-22)</b>	A sudden and large decrease in the voltage of the electrical system.

Term	Definition
<b>window:</b>	A date/ time slot in a programme for planned access to power system <b>equipment</b> .
<b>work time:</b>	The time required by the work party to complete the planned work activities.

## 5. STANDARD ABBREVIATIONS

### 5.1 Logging and operating sequence abbreviations

Standard locality abbreviations are listed in **TP.AG 10.11**.

Abbreviations that are appropriate for the industry and can be used in the **log** or on **operating forms** are for example:

#### Operating actions:

ASM	apply safety measures
C/O	change over
CL	close
CTO	change to offer
DTF	distance to fault
OP	open
PTP	permission to proceed
RFLN	Ready for Livening Notice
RSM	remove safety measures
SEL	select

#### Equipment states:

AFS	available for service
ATC	automatic tap changer control
HSB	hot standby
I & E	isolated and earthed
RFS	removed from service
ROT	risk of trip
RTS	returned to service
SWO	switch out

#### Operating forms/ documentation:

ASS	Assurance
AP	Access Permit
GIR	Governance Interim Report
GOR	Grid Operating Report
GRP	group
MER	Major Event Report
OCR	Operational Control Record
OR	operational request
OS	operating sequence
OVR	outage variation report



---

RCB	reclose block
TP	test permit
<b>Plant and equipment:</b>	
AFD	arc flash detector
AR	automatic reclose
Aux Sw	auxiliary switch
AVR	automatic voltage regulator
C	capacitor stack
CB	circuit breaker
cct	circuit
CSR	Continuous Signal Receive
CT	current transformer
CTS	cable transition station
CSA	compact switch assembly
CVT	capacitor voltage transformer
DCB	disconnecting circuit breaker
DS	disconnecter
ES	earth switch
FDR	feeder
G	generator
GIS	gas insulated switchgear
HVDC	high voltage direct current
ITRIP	intertrip
LMU	line matching unit
LS	local service
MLS	master/local selector switches
MSD	maintenance/service/disable switch
ODJB	outdoor junction box
OLTC	on load tap change
P/P	pump
PLC	power line carrier
RØ, YØ, BØ	phasing: red, yellow, blue
RTU	remote terminal unit
SA	surge arrester
SC	synchronous condenser
STC	static synchronous compensator
SVC	static var compensator
T	transformer
TSw	test switch
U	unit
VG	valve group
VT	voltage transformer
VV	valve (mechanical)

**Electrical and mechanical terms and measures:**

A	ampere
C/W	cooling water
DGA	dissolved gas analysis
E/F	earth fault
FTE	frequency time error
HV	high voltage
Hz	frequency
kV	kilovolts
kVA	kilovoltampere
kvar	kilovoltampere reactive
kW	kilowatts
kWh	kilowatt-hour
ODS	outdoor station
MVA	megavoltampere
MVar	megavoltampere reactive
MW	megawatts
O/C	overcurrent
pf	power factor
rpm	revolutions per minute
UHF	ultra high frequency
V	volts
V/V	valve
VHF	very high frequency
W	watts

## 5.2 Other abbreviations

(See TP.AG 10.11 for location abbreviations)

AF	air forced
AN	air natural
ASR	alarm sender receive
AUFLD	automatic under frequency load disconnecting
AUFLS	automatic under frequency load shedding
Auto	automatic
Aux	auxiliary
BZ	bus zone
CAT	Commissioning Activity Tracker
CBF	circuit breaker fail
CC	control centre
CIR	communication interruption request
CLO	close (request)
Code	Electricity Industry Participation Code
DGA	dissolved gas analysis
DNO	Do Not Operate (Notice)

---

<b>DTC</b>	designated transmission customer
<b>EMS</b>	Energy Management System
<b>GXP</b>	grid exit point
<b>HMI</b>	human/ machine interface
<b>IONS</b>	Integrated Outage Notification System
<b>IP</b>	interested party
<b>ITC</b>	interruption to connection
<b>L/O</b>	lock out
<b>LDC</b>	leased direct circuit
<b>LED</b>	light emitting diode
<b>LEL</b>	lower explosive limit
<b>LLW</b>	live line work
<b>LOC</b>	loss of connection
<b>LOC</b>	location
<b>LOS</b>	loss of supply
<b>LTS</b>	lightning tracking system
<b>LV</b>	low voltage
<b>LW</b>	live work
<b>MAD</b>	Minimum Approach Distance
<b>MADJ</b>	Excel workbook used to calculate an adjustment factor
<b>MAR</b>	Minimum Approach Request
<b>Maximo</b>	Maintenance management system
<b>MDE</b>	Market Data Entry
<b>MOL</b>	Manual Operational Log
<b>MOS</b>	Market Outage Scheduler
<b>NC</b>	Normally Closed
<b>NCCN</b>	National Co-ordination Centre North
<b>NCCW</b>	National Co-ordination Centre Wellington
<b>NGOC</b>	National Grid Operations Centre
<b>NGOC-AKL</b>	National Grid Operations Centre Auckland
<b>NGOC-CHC</b>	National Grid Operations Centre Christchurch
<b>NO</b>	Normally Open
<b>NZST</b>	NZ standard time
<b>OC</b>	operational control
<b>ODS</b>	outdoor station
<b>OF</b>	oil forced
<b>ON</b>	oil natural
<b>ONAF</b>	oil natural air forced
<b>OPE</b>	open (request)
<b>OPGW</b>	optical fibre ground wire
<b>OTH</b>	other operational services (request)
<b>PSO</b>	power system operating (request)
<b>RCB</b>	reclose block (request)
<b>RM</b>	revenue metering access request

<b>RS</b>	removal from service (request)
<b>RSLD</b>	regional single line diagram
<b>SCA</b>	SCADA access (request)
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SCS</b>	Substation Control System
<b>SER</b>	sequential event recorder
<b>SLD</b>	single line diagram
<b>SMS</b>	Station Management System
<b>SOS</b>	SCADA Outage Scheduler
<b>SPPR</b>	standard/ specification project progress record
<b>STPP</b>	short time planning period
<b>TPIX</b>	Transpower Information Exchange Application
<b>VDD</b>	voltage detecting device
<b>VHF</b>	very high frequency

## A SUMMARY OF CHANGES

Issue No.	Affected Section or Clause No.	Comment	Date
11	Sub-section 4.2	'circuit breaker' added	Oct 14
		'compact switchgear assembly' added	
		'disconnecting circuit breaker' definition changed	
		'grid outage planner' definition updated by replacing 'regional operator' with 'grid asset controller'	
		'reclose block' definition changed	
		'Reclose Block Agreement' added	
		'reclose block request' added	
	'remote' added		
	'short time planning' changed to 'short time planning period'		
	Sub-section 5.1	'ROT' deleted	
		'CSA' added	
		'AFD' added	
		'OVR' added	
Sub-section 5.2	'CAT' added		
	'HMI' added		
	'IONS' added		
	'SFIR' deleted		
	'STPP' added		
10	Sub-section 4.2	Deleted terms related to HVDC mercury arc valves	Nov 13
		Changed "Regional Operating Centre (ROC)" to "National Grid Operations Centre (NGOC)"	
		Changed "Regional operator" to "Grid Asset Controller"	
		Changed "contractor" to "Service Provider"	
		Amended definition of "recall time", "removed from service".	
		Added new terms "disconnecting circuit breaker (DCB)", "restoration time", "returned to service", "restoration (of equipment)".	
		Sub-section 5.2	
Added abbreviations: Maximo, NC, NGOC, NGOC - AKL, NGOC - CHC, NO.			

**B CONTROLLED DOCUMENT FEEDBACK FORM**

If you would like to submit any feedback or suggestions to Transpower to improve this document, you can either complete the form below, scan and email it to: [Controlled Documentation Services](#); or you can submit a form online - just look for the [Controlled Document Feedback Form](#) on our website [www.transpower.co.nz](http://www.transpower.co.nz), or if internal to Transpower use [this link](#).

Content change request		No:
Date:	Initiator's name/ title:	
Company:	Phone:	Fax:
	E-mail:	
Controlled document number:	TP.	
Controlled document title:		
Affected section or clause number(s):		
Present clause: _____		
Proposed change: _____		
Reason for change: _____		
If you are including supporting information or attachments, please list here, e.g. photos:		