

Australian Capital Territory

Utilities (Technical Regulation) (Electricity Transmission Supply Code) Approval 2016 (No 1)*

Disallowable instrument DI2016–189

made under the

Utilities Technical Regulation Act 2014, section 14 (Technical Codes—approval)

1 Name of instrument

This instrument is the *Utilities (Technical Regulation) (Electricity Transmission Supply Code) Approval 2016 (No 1)*.

2 Commencement

This instrument commences on the day after it is notified.

3 Approval

I approve the Electricity Transmission Supply Code (the Code) in the schedule.

Note This Code is available for inspection by the public between 8.30 am and 4.30 pm from Monday to Friday except for public holidays, at Access Canberra at South Building, Dame Pattie Menzies House, 16 Challis Street, Dickson, ACT.

Copies of the Code can be made at the Access Canberra office.

Electronic copies of the Code are available on the Access Canberra website at <http://www.environment.act.gov.au/energy/energy-utilities-technical-regulation>.

No charge will apply.

Simon Corbell MLA
Minister for the Environment and Climate Change
11 July 2016



Australian Capital Territory

Electricity Transmission Supply Code

July 2016

Table of Contents

1	INTRODUCTION	2
1.1	Technical Codes	2
1.2	Utility to Comply with Technical Codes	2
1.3	Utility Licence Requirement	2
2	APPLICATION AND PURPOSE OF THIS CODE	2
2.1	Application	2
2.2	Purpose	3
2.3	Inconsistency of Requirements	3
3	DICTIONARY	3
4	TRANSMISSION NETWORK	3
4.1	Supply Security.....	3
4.1.1	TransGrid (and its successors).....	3
4.1.2	ActewAGL Distribution (and its successors).....	5
5	ELECTRICITY NETWORK SAFETY MANAGEMENT SYSTEM	5
5.1	Electricity Network Safety Management System Overview.....	5
5.2	Plan, Design, Construction, Testing, Commissioning, Operation, and Maintenance.....	6
5.3	Safe Operating Procedures and Safety Rules.....	7
5.4	Training and Authorisation.....	7
5.5	Reporting of Notifiable Incidents	8
5.6	Public Electrical Safety Awareness	8
6	EMERGENCY MANAGEMENT	8
7	COMPLIANCE REPORTING AND AUDITS	9
8	DOCUMENTS TO BE SUBMITTED TO THE TECHNICAL REGULATOR	9
	DICTIONARY	11

1 INTRODUCTION

1.1 Technical Codes

The Electricity Transmission Supply Code (this Code) is a technical code under part 3 of the *Utilities (Technical Regulation) Act 2014* (the Act).

Note: A sequence of instruments have been used by the ACT Government to establish a second point of transmission supply. These include the repealed Utilities Exemption 2006 (No 1) [DI2006-47](#), Utilities Exemption 2009 (No 3) [DI2009-144](#), and Utilities Exemption 2012 (No 3) [DI2012-267](#).

The Utility Services Licence (Grant of Licence) 2015 (No 1) [NI2015-87](#) schedule one contains additional utility service licence conditions. This schedule one expired on 31 August 2015.*

1.2 Utility to Comply with Technical Codes

Under section 14 of the Act, the Minister may approve a technical code as recommended by the Technical Regulator. A regulated utility commits an offence under section 16 of the Act if the regulated utility fails to comply with the technical code.

1.3 Utility Licence Requirement

Under section 21 of the *Utilities Act 2000*, an electricity transmission utility is required to hold a licence to provide a utility service.

2 APPLICATION AND PURPOSE OF THIS CODE

2.1 Application

- (1) This Code applies to TransGrid and ActewAGL Distribution (ActewAGL) as electricity transmission utilities under the *Utilities Act 2000*.
- (2) In the case that TransGrid or ActewAGL transfers its licence to another entity and the transfer of the licence is approved by the Independent Competition and Regulatory Commission, this Code applies to the successor of the licence as a licensed electricity transmission utility.

2.2 Purpose

This Code requires an electricity transmission utility to:

- (1) plan, design, construct, test, commission, maintain, operate and manage an electricity transmission network and geographically separate connection points that provide electricity supply to customers in the Australian Capital Territory (ACT);
- (2) meet the demand and protect the reliability and integrity of the transmission network and associated infrastructure; and
- (3) ensure the safe management of the electricity transmission network to avoid injury to any person or damage to property and the environment.

2.3 Inconsistency of Requirements

Requirements of the *National Electricity Law* (NEL) and the *National Electricity Rules* (NER) prevail if there is an inconsistency between this Code and NEL or NER.

Note: Transmission system performance must be compliant with NER schedules 5.1 and 5.1a. Annual load forecasting and planning reports must be produced in accordance with NER chapter 5.12.

3 DICTIONARY

The dictionary at the end of this Code is part of this Code.

4 TRANSMISSION NETWORK

4.1 Supply Security

4.1.1 TransGrid (and its successors)

- (1) TransGrid must plan, design, construct, test, commission, maintain, operate and manage its electricity transmission networks and geographically separate connection points that supply customers in the ACT and that will operate at 66 kV and above, whether or not those networks and connection points are in the ACT, to achieve the following:
 - (a) the provision of two or more geographically separate connection points operated at 132 kV and above to supply electricity to the ACT 132 kV network;
 - (b) at all times provide continuous electricity supply at maximum demand to the ACT 132 kV and 66 kV network throughout and following a single credible contingency event;

- (c) until 31 December 2020, provide electricity supply at 30 MVA to the ACT 132 kV or 66 kV network within one hour following a single special contingency event and 375 MVA within 48 hours of this event; and
 - (d) from 31 December 2020, provide continuous electricity supply at 375 MVA to the ACT 132 kV network immediately following a single special contingency event and agreed maximum demand within 48 hours of this event.
- (2) TransGrid must submit an annual Supply Security Status Report on its compliance with requirements contained in clause 4.1.1 (1):
- (a) upon approval of this code an initial Supply Security Status Report must be provided to the Technical Regulator within 3 months; and
 - (b) an annual Supply Security Status Report must be submitted to the Technical Regulator and ActewAGL Distribution prior to 31 January of the following year;
- (3) TransGrid may submit a proposal to the Technical Regulator to extend the delivery date of continuous electricity supply. This proposal must:
- (a) consider any extenuating environmental or economic imperatives for delaying the project;
 - (b) be provided with an updated Supply Security Status Report using the date required for delivery of the submitted proposal; and
 - (c) be accepted by Government.

Note 1: Submission of a proposal does not amend any of the requirements of this Code. For the avoidance of doubt, TransGrid must meet the requirements of 4.1.1 (1) (d) and submit the required Supply Security Status Reports to deliver (d) from 31 December 2020 while a proposal is considered by Government.

Note 2: Where Government does not accept a proposal to extend the date to deliver (d) from 31 December 2020, TransGrid are required to deliver (d) from 31 December 2020.

4.1.2 ActewAGL Distribution (and its successors)

ActewAGL must plan, design, construct, test, commission, maintain, operate and manage its electricity transmission networks and connection points that supply customers and that will operate at 132 kV and 66 kV, to achieve the following:

- (1) the provision of a 132 kV and 66 kV transmission network to connect with the TransGrid connection points and the ActewAGL substations supplying the distribution network;
- (2) continue to allow electricity supply at maximum demand to each ActewAGL substation (excluding Angle Crossing and Tennent Substations) immediately and automatically after a credible contingency event subject to supply availability from TransGrid;
- (3) continue to allow electricity supply from the TransGrid network connection point(s) consistent with sections 4.1.1(1)(c) and 4.1.1(1)(d).

It is noted that ActewAGL may require four hours to undertake network switching to utilise the 30 MVA supply from the 66 kV network; and

- (4) the Technical Regulator may request a compliance report on ActewAGL's ability to deliver the requirements of 4.1.2.

5 ELECTRICITY NETWORK SAFETY MANAGEMENT SYSTEM

5.1 Electricity Network Safety Management System Overview

- (1) An electricity transmission utility must have an electricity network safety management system consistent with the principles and requirements set out in AS 5577 Electricity Network Safety Management Systems.
- (2) These principles and requirements are summarised as, but are not limited to:
 - (a) the protection of the electricity transmission network;
 - (b) the safety of persons working on or near the electricity transmission network;
 - (c) the safety of the public and the protection of any property near the electricity transmission network;
 - (d) the protection of the environment, including protection from ignition or fires or bushfires;
 - (e) safety issues that may arise from the loss of electricity supply;
 - (f) the planning, design, construction, testing, operation, inspection and maintenance of the electricity transmission network;
 - (g) the competencies, training and skills of any persons required to work on the electricity transmission network;
 - (h) emergency preparedness for events that may affect the safe operation of the electricity transmission network;
 - (i) record management system for safety incidents, risk management, design,

- construction, commissioning, operations and maintenance; and
- (j) monitoring, investigation and reporting of safety and operational activities.

5.2 Plan, Design, Construction, Testing, Commissioning, Operation, and Maintenance

- (1) An electricity transmission utility must plan, design, construct, test, commission, operate, and maintain its network in accordance with relevant standards and contemporary best practice:
 - (a) using qualified persons, taking reasonable care to avoid injury to any persons or damage to property or the environment; and
 - (b) to provide a reliable power supply in a manner that prevents interference, damage, or detriment to regulated utility networks and their customers.
- (2) Planning and design considerations by the electricity transmission utility must include but are not limited to:
 - (a) issues such as safety of persons;
 - (b) network capacity;
 - (c) metering requirements;
 - (d) switching and isolation requirements;
 - (e) electrical protection primary and backup schemes;
 - (f) insulation co-ordination and lightning protection;
 - (g) fault levels;
 - (h) earthing;
 - (i) quality of supply;
 - (j) security and reliability;
 - (k) local and remote control;
 - (l) monitoring and recording of plant performance;
 - (m) alarms and events; and
 - (n) environmental hazards and protection.
- (3) An electricity transmission utility must maintain records of all infrastructure that is accessible to the public. The records must:
 - (a) contain sufficient details to enable this infrastructure to be located and identified; and
 - (b) be available to the public during business hours as needed.
- (4) Hazardous infrastructure that is accessible to the public must have suitable warning signs or marker tape installed to identify it.

- (5) An electricity transmission utility must maintain an up to date database and asset management system consistent with ISO 55000 Asset Management for all installed assets that includes:
- (a) manufacturer and model number;
 - (b) manufacture date;
 - (c) installation or construction date;
 - (d) attributes;
 - (e) operational parameters;
 - (f) maintenance history and defects; and
 - (g) other relevant details to enable the transmission network to be effectively operated and maintained through developed operation and maintenance plans.

5.3 Safe Operating Procedures and Safety Rules

- (1) An electricity transmission utility must develop safe operating procedures for all of its activities.
- (2) The electricity transmission utility must produce and enforce a set of Electrical Safety Rules setting out the procedures and responsibilities for all persons required to work on or near the electricity transmission network.
- (3) The Electrical Safety Rules must address, but is not limited to, the procedures and responsibilities for:
- (a) general safety requirements;
 - (b) training and authorisations;
 - (c) working in the vicinity of the electricity network;
 - (d) approaching the electricity network;
 - (e) operating the electricity network;
 - (f) earthing of the electricity network;
 - (g) access and permit to work authorities and processes;
 - (h) commissioning and decommissioning of the electricity network; and
 - (i) requirements for non-electricity transmission network personnel.

5.4 Training and Authorisation

- (1) An electricity transmission utility must ensure that all persons are adequately trained for the activities they undertake.
- (2) An electricity transmission utility must duly train any person required to work upon or to come within any safe approach distances of an electricity network in accordance with the Electrical Safety Rules. All such persons must be assessed as competent and clearly instructed as to their responsibilities and limits of working on or approach to the electricity network, before undertaking any work on or near the electricity network.
- (3) An electricity transmission utility must maintain and keep a record of all persons trained and their competencies and authorisations.

- (4) An electricity transmission utility must provide a copy of training records to the Technical Regulator if requested.
- (5) An electricity transmission utility must advise the Technical Regulator when new or revised electrical safety rules are issued, as well as providing a summary of material changes to previous Electrical Safety Rules. A copy of the electrical safety rules must be provided to the Technical Regulator if requested.

5.5 Reporting of Notifiable Incidents

- (1) Notifiable incidents, as defined in part 4 of the Act, must be reported to the Technical Regulator by the electricity transmission utility within 24 hours after the electricity transmission utility becomes aware of the notifiable incident.
- (2) Following the reporting in subclause 5.5 (1), the electricity transmission utility is required to provide to the Technical Regulator a preliminary written report of notifiable incidents within seven working days and a detailed investigative report within 30 working days of all such incidents. Reports shall include full details of the incident, how and why the incident occurred, and actions to prevent a re-occurrence.

5.6 Public Electrical Safety Awareness

- (1) An electricity transmission utility shall develop an annual Public Electrical Safety Awareness (PESA) plan based on risk assessment of public safety issues associated with their assets and implement that plan through identified actions.
- (2) At least once each financial year, the electricity transmission utility must conduct a public media campaign to support the PESA plan, focused on potential higher risk events and incidents that have occurred.

6 EMERGENCY MANAGEMENT

- (1) An electricity transmission utility must comply with the *Emergencies Act 2004* (ACT) and the *Emergency Planning Code 2011*.
- (2) An electricity transmission utility must prepare an emergency plan that contemplates response, communication and coordination with emergency management agencies.

- (3) The emergency plan must establish a framework for:
- (a) internal management of emergencies;
 - (b) protocols for complying with relevant agencies under the *Emergencies Act 2004*; and
 - (c) protocols for complying with any direction issued under the *Emergencies Act 2004*, including a direction issued by an Emergency Controller appointed under the *Emergencies Act 2004*.

7 COMPLIANCE REPORTING AND AUDITS

- (1) The Technical Regulator may request compliance reports from the electricity transmission utility to ensure safety, compliance with performance standards, and appropriate management of electrical infrastructure.
- (2) The Technical Regulator may undertake safety and technical audits of the electricity transmission utility, and request copies of audits initiated by the electricity transmission utility.

8 DOCUMENTS TO BE SUBMITTED TO THE TECHNICAL REGULATOR

Documents required to be submitted annually to the Technical Regulator include, but not necessarily be limited to, the following:

Document	Date	Comment
Response to Technical Regulator's Annual Compliance Report	1 October or 45 days after receipt of request	
Electricity Network Safety Management System	1 July	
Performance Compliance with the previous financial year's Electricity Network Safety Management System including environmental breaches, network incidents, supply quality and reliability performance	31 August	
Bushfire Management Plan	1 March	
Bushfire Readiness Report	1 October	
Emergency Plan	30 April	
Asset Management Plan for new financial year	1 June	
Transmission Planning Report	30 June / 31 Dec	As per NER chapter 5.12, & 5.13 for dual function utilities

Document	Date	Comment
Public Safety Awareness Plan	1 October	
Notifiable Incident Reports	As they arise	
Training Records	When requested	
Electrical Safety Rules	When requested	
Notification to Technical Regulator of new or revised Electrical Safety Rules issued	When event occurs	
Initial Supply Security Status Report	Within three months of this Technical Code being approved	
Supply Security Status Report	31 January	
Other documents	When requested	

Note: As there is no specific electricity transmission utility performance reporting requirement document published in the ACT, electricity transmission utilities must report in accordance with the principles outlined in the requirements of the NSW Electricity Network Reporting Manual published by IPART (or alternate equivalent agreed to in advance, in writing, by the Technical Regulator), for transmission networks affecting the ACT.

This Code shall prevail if there is an inconsistency between this Code and the IPART (or agreed alternative) reporting requirements.

Where reports satisfactorily addressing the above requirements have been provided to the Technical Regulator as part of other reporting requirements, it is not necessary to provide them again.

Email reports should be addressed to:

Techregulator.utilities@act.gov.au

Hard copy reports should be addressed to:

Technical Regulator
 Director General – EPD
 ACT Government
 GPO Box 158
 CANBERRA ACT 2601

Telephone Contact:

Utilities Technical Regulation
 02 6207 7362

DICTIONARY

- (1) **act** means the *Utilities (Technical Regulation) Act 2014*.
- (2) **Angle Crossing Substation** means the ActewAGL Distribution 132/11 kV Substation whose prime purpose is to supply the Angle Crossing Water Pump Station.
- (3) **automatically** means an action initiated by protection, control and other equipment without manual personal intervention by an operator, to switch and reconfigure electrical circuits so as to isolate any faulty parts of an electricity network and to allow electricity supply at maximum demand to be provided.
- (4) **connection assets** mean those components of a transmission or distribution system which are used to provide connection services.
- (5) **connection point** means the agreed point of supply established between network service provider(s) and another registered participant, non-registered customer or franchise customer.
- (6) **credible contingency event** means an event described in clause 4.2.3 of the National Electricity Rules.
- (7) **geographically separate connection points** refers to electricity transmission connection points located at a distance not less than one kilometre apart.
- (8) **government** means the Australian Capital Territory Executive, as defined in *Australian Capital Territory (Self-Government) Act 1988*.
- (9) **Independent Competition and Regulatory Commission (ICRC)** means the statutory body established under the *Independent Competition and Regulatory Commission Act 1997*.
- (10) **maximum demand** means the expected maximum demand across the ACT electricity network for the year agreed to by the relevant networks.
- (11) **minister** means the Minister responsible for administering the Act.
- (12) **National Electricity Law (NEL)** means *National Electricity (South Australia) Act 1996*.
- (13) **National Electricity Rules (NER)** means national electricity rules made under the National Electricity Law.
- (14) **network** means the apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any connection assets. In relation to a network service provider, a network owned, operated or controlled by that network service provider.

- (15) **special contingency event** means the unexpected disconnection of all or multiple elements at a single geographic location for an extended period of time and includes the loss of supply to connection points.
- (16) **supply security status report** each report must demonstrate progress in meeting the requirements contained in section 4.1.1(1) and how they will continue to be met. Reports shall include substantiating documents to support the status report eg. network studies that demonstrate capacity and supply quality compliance, procedures and operational plans for responding to the contingency events including how each load capacity requirement will be satisfied, maximum demand forecasts, design and construction progress reports compared to required compliance targets.
- (17) **technical code** means a code approved or determined by the Minister under the Act.
- (18) **Technical Regulator** as established by section 77 of the Act.
- (19) **technical standards** include relevant Australian Standards and relevant standards published by International Electro-Technical Commission.
- (20) **Tennent Substation** means the ActewAGL Distribution 132/11kV Substation whose prime purpose is to connect the Williamsdale Solar Farm to the ActewAGL Distribution 132 kV network.
- (21) **transmission** means activities pertaining to a transmission system including the conveyance of electricity through that transmission system.
- (22) **transmission or distribution system** means a transmission system or distribution system that:
- (a) is used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail); and
 - (b) is connected to another such system.
- (23) **transmission network** means a network within any participating jurisdiction operating at nominal voltages of 220kV and above plus:
- (a) any part of a network operating at nominal voltages between 66kV and 220kV that operates in parallel to and provides support to the higher voltage transmission network; and
 - (b) any part of a network operating at nominal voltages between 66kV and 220kV that is not referred to in paragraph (a) but is deemed by the Australian Energy Regulator (AER) to be part of the transmission network.
- (24) **transmission system** means a transmission network, together with the connection assets associated with the transmission network, which is connected to another transmission or distribution system.
- (25) **utility** is as defined under part 2 of the *Utilities Act 2000*.
- (26) **utility licence** is as defined under part 3 of the *Utilities Act 2000*.