

# Electricity Industry Participation Code 2010

## Part 8 Common quality

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**8.1 Contents of this Part**

This Part relates to **common quality**. In particular, this Part concerns the performance obligations of the **system operator**, the performance obligations of **asset owners**, arrangements concerning **ancillary services**, **extended reserve**, and **technical codes**.

Compare: Electricity Governance Rules 2003 rule 1 section I part C

Clause 8.1: amended, on 7 August 2014, by clause 5 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

**8.1A Requirement to provide complete and accurate information**

- (1) A **participant** must take all practicable steps to ensure that information that it provides to the **extended reserve manager** under this Part is—
- complete and accurate; and
  - not misleading or deceptive; and
  - not likely to mislead or deceive.
- (2) If a **participant** provides information to the **extended reserve manager** under this Part, and subsequently becomes aware that the information is incomplete, inaccurate,

misleading or deceptive, or likely to mislead or deceive, the **participant** must provide revised information as soon as practicable.

- (3) For the purpose of this clause, information provided by an **asset owner** to the **extended reserve manager** is deemed to be accurate if it complies with a data specification **published** by the **extended reserve manager**.

Clause 8.1A: inserted, on 19 January 2017, by clause 4 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

## Subpart 1—Performance obligations of the system operator

### 8.2 Contents of this subpart

This subpart provides for—

- (a) general performance obligations of the **system operator**
- (b) a **policy statement** relating to the **principal performance obligations** of the **system operator**; and
- (c) the review of the **policy statement**.

Compare: Electricity Governance Rules 2003 rule 1 section II part C

### 8.3 Recovery of costs from causers of harmonic and voltage non-compliance

- (1) If the **system operator** is able to establish who is causing any departure from the standards referred to in clause 7.2(D), the **system operator** must endeavour to recover its reasonable identification and testing costs from that person. If the causer is a **participant**, the **participant** must pay those costs to the **system operator**.
- (2) If the **system operator** is unable to recover its reasonable identification and testing costs, or the causer is not able to be identified, then those costs will form part of the **system operator's identification costs**.

Compare: Electricity Governance Rules 2003 rule 2.3.2 section II part C

Clause 8.3 Heading: amended, on 19 May 2016, by clause 16(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.3(1): amended, on 19 May 2016, by clause 16(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.4 System operator may rely on information provided

For the purposes of this Code, the **system operator** may—

- (a) rely on the **assets** and information about the **assets** made available to the **system operator** by **asset owners**; and
- (b) assume that **asset owners** are complying with the **asset owner performance obligations** and the **technical codes**, or complying with a valid **dispensation** or **equivalence arrangement**; and
- (c) rely on information provided to the **system operator** by the **extended reserve manager**.

Compare: Electricity Governance Rules 2003 rule 4 section II part C

Clause 8.4: replaced, on 19 January 2017, by clause 5 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

## 8.5 Restoration

- (1) If an event disrupts the **system operator's** ability to comply with the **principal performance obligations**, the **system operator** must re-establish normal operation of the power system as soon as possible, given—
  - (a) the capability of **generation, ancillary services, and extended reserve**; and
  - (b) the configuration and capacity of the **grid**; and
  - (c) the information made available by **asset owners**.
- (2) When re-establishing normal operation of the power system under subclause (1), the **system operator** must have regard to the following priorities:
  - (a) first, the safety of natural persons;
  - (b) second, the avoidance of damage to **assets**;
  - (c) third, the restoration of **offtake**;
  - (d) fourth, conformance with the **principal performance obligations**;
  - (e) fifth, full conformance with the **dispatch objective**.

Compare: Electricity Governance Rules 2003 rule 5 section II part C

Clause 8.5(1): amended, on 19 May 2016, by clause 17 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.5(1)(a): amended, on 7 August 2014, by clause 6 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

## 8.6 System operator may contract for higher levels of common quality

Subject to clause 17.29, nothing in this Code prevents the **system operator** from entering into contracts or arrangements in which levels of quality more stringent than those specified in the **principal performance obligations** are agreed, if the **system operator** can identify the incremental costs of those more stringent levels, and can ensure that those incremental costs are paid to the **system operator** by the persons wishing to enter into that contract or arrangement with the **system operator**.

Compare: Electricity Governance Rules 2003 rule 6 section II part C

## 8.7 System operator must not contract contrary to this arrangement

Subject to clauses 8.6 and 17.29, the **system operator** must not enter into a contract with another person that is inconsistent with the **system operator's** obligations under this Code and the **technical codes**.

Compare: Electricity Governance Rules 2003 rule 7 section II part C

### *Policy statement*

## 8.8 System operator to comply with policy statement

Subject to clause 8.14, the **system operator** must comply with the **policy statement**.

Compare: Electricity Governance Rules 2003 rule 8 section II part C

Clause 8.8: amended, on 19 May 2016, by clause 18 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

## 8.9 *[Revoked]*

Clause 8.9: revoked, on 10 January 2013, by clause 6 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

### 8.10 Incorporation of policy statement by reference

- (1) The **policy statement** is incorporated by reference in this Code in accordance with section 32 of the **Act**.
- (2) Subclause (1) is subject to Schedule 1 of the **Act**, which includes a requirement that the **Authority** must give notice in the *Gazette* before an amended or substituted **policy statement** becomes incorporated by reference in this Code.

Compare: Electricity Governance Rules 2003 rule 9 section II part C  
Clause 8.10(1): amended, on 10 January 2013, by clause 7 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

### 8.10A Review of policy statement

- (1) At least once every 2 years the **system operator** must—
  - (a) review the **policy statement**; and
  - (b) as soon as practicable after completing a review, decide whether or not to propose a change to the **policy statement**; and
  - (c) advise the **Authority** of its decision.
- (2) If the **system operator** decides to propose a change to the **policy statement**, the **system operator** must submit a **draft policy statement** to the **Authority** together with the following information:
  - (a) an explanation of the proposed change and a statement of the objectives of the proposed change;
  - (b) an evaluation of alternative means of achieving the objectives of the proposed change;
  - (c) an evaluation of the costs and benefits of the proposed change;
  - (d) a list of the persons consulted and a summary of the submissions received.
- (3) As part of a review conducted under this clause, the **system operator** must invite comments from **participants**.

Clause 8.10A: inserted, on 10 January 2013, by clause 8 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.  
Clause 8.10A(1): amended, on 5 October 2017, by clause 82 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.10B System operator decides not to propose change to the policy statement

If the **system operator** advises the **Authority** under clause 8.10A(1)(c) that the **system operator** does not intend to propose a change to the **policy statement** the **system operator** must provide the **Authority** with the following information:

- (a) the findings of the review of the **policy statement** conducted by the **system operator**;
- (b) details of any request to amend the **policy statement** received from a **participant** or the **Authority** since the last review;
- (c) the **system operator's** decision on each such request including, if the **system operator** declined a requested change, the reasons for declining.

Clause 8.10B: inserted, on 10 January 2013, by clause 8 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

### 8.10C Authority may require system operator to reconsider

- (1) The **Authority** may require the **system operator** to reconsider a decision made under clause 8.10A(1)(b) not to propose a change to the **policy statement**.
- (2) If the **Authority** requires the **system operator** to reconsider a decision made under subclause 8.10A(1)(b), the **Authority** must advise the **system operator** of—
  - (a) the **Authority's** reasons for requiring the **system operator** to reconsider; and
  - (b) the date, determined after consulting with the **system operator**, by which the **system operator** must either confirm its decision or submit a **draft policy statement**.
- (3) The **Authority** must as soon as practicable **publish** the advice received from the **system operator** under clause 8.10A(1)(c) and the advice given by the **Authority** to the **system operator** under subclause (2).

Clause 8.10C: inserted, on 10 January 2013, by clause 8 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.10C(3): amended, on 5 October 2017, by clause 83 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.11 Content of draft policy statement

- (1) *[Revoked]*
- (2) *[Revoked]*
- (3) The **draft policy statement** must include—
  - (a) the policies and means that the **system operator** considers appropriate for the **system operator** to observe in complying with its **principal performance obligations**; and
  - (b) the policies and means by which scheduling and **dispatch** are adjusted to meet the **dispatch objective**, and must include the provision of a **dispatch** process statement. The **dispatch** process statement must contain the details of the processes that enable the **system operator** to meet the **dispatch objective**, including the methodologies to be used by the **system operator** for planning to meet the **dispatch objective** during the period leading up to real time and meeting the **dispatch objective** in real time; and
  - (c) a policy setting out how the **system operator** will manage any conflict of interest that arises in the performance of its obligations under this Code; and
  - (d) a statement of the reasons for adopting the policies and means set out in the **policy statement** (which statement must be regarded as an explanatory note only and does not form part of the policies itself); and
  - (e) a statement of how future policies and means might be formulated and implemented.

Compare: Electricity Governance Rules 2003 rule 10 section II part C

Clause 8.11 Heading: substituted, on 10 January 2013, by clause 9(a) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.11(1): revoked, on 10 January 2013, by clause 9(b) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.11(2): revoked, on 10 January 2013, by clause 9(c) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.11(3): amended, on 10 January 2013, by clause 9(d) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.



Clause 8.11(3): amended, on 19 May 2016, by clause 19(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.11(3)(c): amended, on 19 May 2016, by clause 19(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.11A Changes and variations

- (1) The **system operator** may at any time propose a change to the **policy statement** by submitting a **draft policy statement** to the **Authority** together with the following information:
  - (a) an explanation of the proposed change and a statement of the objectives of the proposed change;
  - (b) an evaluation of alternative means of achieving the proposed change;
  - (c) an evaluation of the costs and benefits of the proposed change.
- (2) The **Authority** or a **participant** may at any time request that the **system operator** propose a change to the **policy statement** under subclause (1).
- (3) If the **system operator** receives a request under subclause (2), it must as soon as practicable—
  - (a) decide whether to decline the request, defer the request until the next **review date**, or submit a **draft policy statement** to the **Authority**; and
  - (b) **publish** the decision.
- (4) If the **system operator** declines a request under subclause (3), the **Authority** may require the **system operator** to reconsider its decision, giving reasons.

Clause 8.11A: inserted, on 10 January 2013, by clause 10 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.11A(3)(b): amended, on 5 October 2017, by clause 84 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.12 Consultation on draft policy statement

- (1) The **Authority** must **publish** the following information as soon as practicable after it receives it:
  - (a) a **draft policy statement** submitted under clause 8.10A and the information required under clause 8.10A(2);
  - (b) a **draft policy statement** submitted under clause 8.11A and the information required under clauses 8.11A(1)(a) to (c).
- (2) When the **Authority publishes** a **draft policy statement** and information under subclause (1), the **Authority** must advise **participants** of the date (which must not be earlier than 10 **business days** after the date that the **Authority publishes** the **draft policy statement**) by which submissions on the changes proposed in the **draft policy statement** must be received by the **Authority**.
- (3) Each submission on changes proposed in a **draft policy statement** must be made in writing to the **Authority** and received on or before the **submission expiry date**.
- (4) The **Authority** must provide a copy of each submission received to the **system operator** at the close of business on the **submission expiry date** and must **publish** the submissions as soon as practicable.
- (5) The **system operator** may make its own submission on the **draft policy statement** and the submissions received in relation to it no later than 10 **business days** after the **submission expiry date**.

- (6) The **Authority** must **publish** the **system operator's** submission as soon as practicable after it is received.
- (7) Following the consultation process required by subclauses (1) to (6), the **Authority** may approve the **draft policy statement** subject to the **system operator** making any changes that the **Authority** considers appropriate.

Compare: Electricity Governance Rules 2003 rule 11 section II part C

Clause 8.12: substituted, on 10 January 2013, by clause 11 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.12(1), (2), (4) and (6): amended, on 5 October 2017, by clause 85(1) and (2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.12A Technical and non-controversial changes

- (1) The **system operator** may at any time propose a change to the **policy statement** that it considers is technical and non-controversial by submitting a **draft policy statement** to the **Authority** together with an explanation of the proposed change.
- (2) If the **system operator** submits a **draft policy statement** under subclause (1) the **system operator** is not required to provide a statement of the objectives of the proposed change, an evaluation of alternative means of achieving the objectives of the proposed change or an evaluation of costs and benefits of the proposed change.
- (3) The **Authority** must, as soon as practicable after receiving a **draft policy statement** and the information required under subclause (1), by notice in writing to the **system operator**—
  - (a) approve the **draft policy statement** to be incorporated by reference into this Code; or
  - (b) decline to approve the **draft policy statement**, giving reasons.
- (4) If the **Authority** approves the **draft policy statement** it must as soon as practicable—
  - (a) **publish** notice of its intention to incorporate the **draft policy statement** by reference into this Code; and
  - (b) include in the notice the **Authority's** reasons for considering that the changes proposed in the **draft policy statement** are technical and non-controversial; and
  - (c) invite comment from **participants** on the reasons given in the notice.
- (5) After considering any comments made under subclause 4(c) the **Authority** must advise the **system operator** by notice in writing of its decision as to whether to confirm or revoke its approval of the **draft policy statement**, and give reasons for its decision.
- (6) The **Authority** must **publish** its decision and reasons as soon as practicable.

Clause 8.12A: inserted, on 10 January 2013, by clause 12 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.12A(4)(a) and (6): amended, on 5 October 2017, by clause 86 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.12B Authority adopts new policy statement

If the **Authority** approves a **draft policy statement** under clause 8.12 or confirms its approval of a **draft policy statement** under clause 8.12A it must—

- (a) incorporate the new **policy statement** by reference into this Code in accordance with Schedule 1 of the **Act**; and
- (b) **publish** the new **policy statement** and the date on which it takes legal effect.

Clause 8.12B: inserted, on 10 January 2013, by clause 12 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.12B(b): amended, on 5 October 2017, by clause 87 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.13 *[Revoked]*

Compare: Electricity Governance Rules 2003 rule 12 section II part C  
Clause 8.13: revoked, on 10 January 2013, by clause 13 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

### 8.14 **Departure from policy statement**

- (1) The **system operator** may depart from the policies set out in a **policy statement** when a **system security situation** arises and such departure is required for the **system operator** to comply with clause 7.1A(1).
- (2) If the **system operator** departs from a **policy statement** under subclause (1), the **system operator** must provide a report to the **Authority** setting out the circumstances of the **system security situation** and the actions taken to deal with it.
- (3) The **Authority** must **publish** the report within a reasonable time after receiving it.

Compare: Electricity Governance Rules 2003 rule 13 section II part C  
Clause 8.14(1): amended, on 19 May 2016, by clause 20(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.  
Clause 8.14(2): amended, on 19 May 2016, by clause 20(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.  
Clause 8.14(3): substituted, on 10 January 2013, by clause 14 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.  
Clause 8.14(3): amended, on 5 October 2017, by clause 88 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### *System security forecast*

### 8.15 **System operator to prepare and review system security forecast**

- (1) Every 2 years, the **system operator** must prepare, **publish**, and provide to the **Authority** a **system security forecast**.
- (1A) The **system security forecast** must—
  - (a) identify risks to the **system operator's** ability to meet the **principal performance obligations** over the ensuing period of not less than 36 months, and indicate how those risks can be managed; and
  - (b) take into account the capabilities of the **grid** and connected **assets** based on information known to, and able to be disclosed by, the **system operator**.
- (2) The date by which the **system operator** must **publish** the **system security forecast** and provide it to the **Authority** in each year in which the **system operator** is required to do so, is the date established for that purpose under rule 15 of section II of part C of the **rules**.
- (3) The **system operator** must review the most recent **system security forecast** prepared in accordance with subclause (1) at 6 monthly intervals until a new forecast or update is prepared. If, in the reasonable opinion of the **system operator**, a change has been made to the power system that would materially affect the most recent forecast or update, the **system operator** must amend the **system security forecast**, **publish** it and provide it to the **Authority**.

Compare: Electricity Governance Rules 2003 rule 15 section II part C

Clause 8.15(1): substituted, on 21 September 2012, by clause 8 of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

Clause 8.15(1A): inserted, on 21 September 2012, by clause 8 of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

Clause 8.15(1A)(b): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 8.15(1A)(b): amended, on 5 October 2017, by clause 89 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## Subpart 2—Asset owner performance obligations and technical standards

### 8.16 Contents of this subpart

This subpart provides for—

- (a) the establishment of performance obligations and technical standards for **asset owners** to assist the **system operator** in complying with the **principal performance obligations**; and
- (b) **asset owners** to obtain an assessment of their **assets** from the **system operator**; and
- (c) a process for the **system operator** to approve applications for **equivalence arrangements** and **dispensations** (if necessary).

Compare: Electricity Governance Rules 2003 rule 1 section III part C

#### *Asset owner performance obligations and technical standards concerning frequency*

### 8.17 Contribution by injections to overall frequency management

Each **generator** (while **synchronised**) and the **HVDC owner** must at all times ensure that its **assets**, other than any **generating units** within an **excluded generating station**, make the maximum possible **injection** contribution to maintain frequency within the **normal band** (and to restore frequency to the **normal band**). Any such contribution must be assessed against the **technical codes**.

Compare: Electricity Governance Rules 2003 rule 2.1 section III part C

### 8.18 Contributions by purchasers to overall frequency management

Each **purchaser** must limit the magnitude of any instantaneous change in the **offtake of electricity** and net rate of change in **offtake** to the levels the **system operator** reasonably requires. In setting those requirements, the **system operator** must have regard to the impact of the **offtake** on the **system operator's** ability to comply with the **principal performance obligations** concerning frequency (as set out in clause 7.2A to 7.2C) and the **dispatch objective**.

Compare: Electricity Governance Rules 2003 rule 2.2 section III part C

Clause 8.18: amended, on 19 May 2016, by clause 21 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.19 Contributions to frequency support in under-frequency events

- (1) Subject to subclause (3), each **generator** must at all times ensure that, while **electrically connected**, its **assets**, other than any **excluded generating stations**, contribute to supporting frequency by remaining **synchronised**, ensuring that each of its **generating units** can and does, at a minimum, sustain pre-event output—

- (a) at all times when the frequency is above 47.5 Hertz; and
  - (b) for at least 120 seconds when the frequency is 47.5 Hertz; and
  - (c) for at least 20 seconds when the frequency is 47.3 Hertz; and
  - (d) for at least 5 seconds when the frequency is 47.1 Hertz; and
  - (e) for at least 0.1 seconds when the frequency is 47.0 Hertz; and
  - (f) at any frequencies between those specified in paragraphs (b) to (e) for times derived by linear interpolation.
- (2) If the **inherent characteristics** and design of a **generator's generating unit** are such that it is reasonably able to operate beyond the above requirements, the **generator** must declare such capabilities in accordance with clause 2(5) of **Technical Code A** of Schedule 8.3.
- (3) Each South Island **generator** must ensure that each of its **assets**, other than excluded **generating units**, remains **synchronised**, and can and do, at a minimum, sustain pre-event output—
- (a) at all times when the frequency is above 47 Hertz; and
  - (b) for 30 seconds if the frequency falls below 47 Hertz but not below 45 Hertz.
- (4) The **HVDC owner** must at all times ensure that, while **electrically connected**, its **assets** contribute to supporting frequency during an **under-frequency event** in either **island** by—
- (a) remaining **electrically connected** to those **assets** making up the **grid** in the North Island and South Island while the frequency in both **islands** remains above 48 Hertz; and
  - (b) remaining **electrically connected** to those **assets** making up the **grid** in the North Island and South Island while the frequency in both **islands** remains below 48 Hertz and above 47 Hertz for 90 seconds; and
  - (c) remaining **electrically connected** to those **assets** making up the **grid** in the North Island and South Island while the frequency in both **islands** remains above 45 Hertz for 35 seconds, unless the frequency in either **island** is less than 46.5 Hertz and the frequency is falling at a rate of 7 Hertz per second or greater; and
  - (d) subject to the level of transfer and the **HVDC link** configuration at the beginning of the **under-frequency event**, if the **HVDC link** itself is not the cause of the **under-frequency event**, modifying the instantaneous transfer on the **HVDC link** by up to 250 MW with the objective of limiting the difference between the North Island and South Island frequencies to no greater than 0.2 Hertz.
- (5) Each **extended reserve provider** must provide **extended reserve** in accordance with Schedule 8.3, Technical Code B.

Compare: Electricity Governance Rules 2003 rule 2.3 section III part C

Clause 8.19(5): substituted, on 7 August 2014, by clause 7 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.19(1) and (4): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 8.19(1) and (4): amended, on 5 October 2017, by clause 90 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 8.20 Contributions by grid owners to frequency support

Each **grid owner** must ensure that its **assets** are capable of being operated, and operate,

within the frequency targets set out in clause 7.2A.

Compare: Electricity Governance Rules 2003 rule 2.4 section III part C  
Clause 8.20: amended, on 19 May 2016, by clause 22 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### **8.21 Excluded generating stations**

- (1) For the purposes of clauses 8.17, 8.19, 8.25D, and the provisions in **Technical Code A** of Schedule 8.3 relating to the obligations of **asset owners** in respect of frequency, an **excluded generating station** means a **generating station** that exports less than 30 MW to a **local network** or the **grid**, unless the **Authority** has issued a direction under clause 8.38 that the **generating station** must comply with clauses 8.17, 8.19, 8.25A, and 8.25B and the relevant provisions in **Technical Code A** of Schedule 8.3.
- (2) Whether likely to be an **excluded generation station** or not, a **generator** who is planning to connect to the **grid** or a **local network** a **generating unit** with rated net maximum capacity equal to or greater than 1 MW must provide the **system operator** with written advice of its intention to connect together with other information relating to that **generating unit** in accordance with clause 8.25(4).

Compare: Electricity Governance Rules 2003 rules 2.5 and 2.6 section III part C  
Clause 8.21(1): amended, on 24 November 2016, by clause 5(1) and (2) of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.  
Clause 8.21(2): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.  
Clause 8.21(2): amended, on 5 October 2017, by clause 91 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### *Asset owner performance obligations and technical standards concerning voltage*

### **8.22 Voltage range AOPOs**

- (1) Each **grid owner** must ensure that its **assets** at and in between—
  - (a) the **high voltage terminals** of the **grid owner's** transformers at each **grid injection point** and **grid exit point**; or
  - (b) if no transformer exists, the relevant **grid injection point** or **grid exit point**—
 are capable of being operated within the following range of voltages:

Nominal <b>grid</b> voltage (kV)	Voltage limits			
	Minimum (kV)		Maximum (kV)	
220	198	-10.0%	242	10.0%
110	99	-10.0%	121	10.0%
66	62.7	-5.0%	69.3	5.0%
50	47.5	-5.0%	52.5	5.0%

- (2) Each **generator** with a **point of connection** to the **grid** must at all times ensure that its **assets** are capable of being operated, and do operate, when the **grid** is operated within the range of voltages set out in subclause (1).
- (3) Each **connected asset owner** must ensure that its **local network** is capable of being operated, and does operate, when the **grid** is operated over the range of voltages set out in subclause (1).

Compare: Electricity Governance Rules 2003 rule 3.1 section III part C  
Clause 8.22(3): amended, on 1 February 2016, by clause 8 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

### 8.23 Voltage support AOPOs

Each **generator** with a **point of connection** to the **grid** must at all times ensure that its **assets**—

- (a) when the voltage at its **grid injection point** is within the applicable range of nominal voltage, are capable of exporting (over excited) when **synchronised** and made available for **dispatch** by the **system operator**, a minimum net **reactive power** which is 50% of the maximum continuous **MW** output power as measured at the following **generating unit** terminals:

Nominal <b>grid</b> voltage (kV)	Voltage range for which <b>reactive power</b> is required			
	Minimum (kV)		Maximum (kV)	
220	198	-10.0%	242	10.0%
110	99	-10.0%	121	10.0%
66	62.7	-5.0%	69.3	5.0%
50	47.5	-5.0%	52.5	5.0%
33	31.35	-5.0%	34.65	5.0%
22	21.45	-2.5%	22.55	2.5%
11	10.725	-2.5%	11.275	2.5%

- (b) when the voltage at its **grid injection point** is within the applicable range of nominal voltage, are capable of importing (under excited) when **synchronised** and made available for **dispatch** by the **system operator**, a minimum net **reactive power** which is 33% of the maximum continuous **MW** output power as measured at the **generating unit** terminals as set out below:

Nominal <b>grid</b> voltage (kV)	Voltage range for which <b>reactive power</b> is required			
	Minimum (kV)		Maximum (kV)	
220	209	-5.0%	242	10.0%
110	104.5	-5.0%	121	10.0%
66	62.7	-5.0%	69.3	5.0%
50	47.5	-5.0%	52.5	5.0%
33	31.35	-5.0%	34.65	5.0%
22	21.45	-2.5%	22.55	2.5%
11	10.725	-2.5%	11.275	2.5%

- (c) when **synchronised**, continuously operate in a manner that supports voltage and voltage stability on the **grid** in compliance with the **technical codes**.

Compare: Electricity Governance Rules 2003 rule 3.2 section III part C  
Clause 8.23: amended, on 21 September 2012, by clause 9 of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

#### 8.24 Load shedding obligations to support voltage

- (1) If it is not possible for a **connected asset owner** to comply with subclause (2), the **grid owner** must, if possible, establish load shedding in block sizes and at voltage levels (and, if automatic systems are established, with relay settings) set out in the **technical codes** or otherwise as the **system operator** reasonably requires.
- (2) In order to prevent the collapse of the **network** voltage, each **connected asset owner** must ensure that, if possible, it has established load shedding in block sizes and at voltage levels (and, if automatic systems are established, with relay settings) in accordance with the **technical codes** or otherwise as the **system operator** reasonably requires.

Compare: Electricity Governance Rules 2003 rule 3.3 section III part C

Clause 8.24(1): amended, on 1 February 2016, by clause 9 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.24(2): amended, on 1 May 2016, by clause 4 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) 2016.

#### 8.25 Other asset owner performance obligations and technical standards

- (1) Each **grid owner** must ensure that the design and configuration of its **assets** (including its connections to other persons) and associated protection arrangements are consistent with the **technical codes** and, in the reasonable opinion of the **system operator**, with maintaining the **system operator's** ability to comply with the **principal performance obligations**. In reaching this opinion, the **system operator** must have regard to the potential impact of the design or configuration of those **assets** or associated protection arrangements on its compliance with the **principal performance obligations** and achievement of the **dispatch objective**.
- (2) Each **grid owner** and each **connected asset owner** must use reasonable endeavours to ensure that a **generator** who meets the following criteria provides the **system operator** with written advice of the existence of its **generating unit** and the **generator's** name and address:
  - (a) the **generator** is directly connected to the **grid owner's grid** or directly or indirectly connected to the **local network** (as the case may be):
  - (b) the **generator** has a **generating unit** with a rated net maximum capacity equal to or greater than 1 MW.
- (3) Each **asset owner** and each **purchaser** must provide communication facilities that comply with the **technical codes** or otherwise, as the **system operator** reasonably requires, which must assist the **system operator** in planning to comply, and complying, with its **principal performance obligations** and achieving the **dispatch objective**.
- (4) Each **asset owner** and each **purchaser** must provide information that complies with the **technical codes** or otherwise as the **system operator** reasonably requests, to assist the **system operator** in planning to comply, and complying, with its **principal performance obligations** and achieving the **dispatch objective**.
- (5) If the **system operator** reasonably considers it necessary to assist the **system operator** in planning to comply, and complying, with the **principal performance obligations** and achieving the **dispatch objective**, the **system operator**—
  - (a) may require that an **embedded generator** provide information regarding the



intended output of each **embedded generating station** greater than 10 MW in capacity, that must be either—

- (i) submitted as an **offer** in accordance with subpart 1 of Part 13; or
  - (ii) provided in a form and manner agreed between the **system operator** and the **embedded generator**; and
- (b) must advise the **embedded generator** of its requirement at least 20 **business days** in advance of the requirement coming into effect.
- (6) If the **system operator** reasonably considers it necessary to assist it in planning to comply, and complying, with the **principal performance obligations** and achieving the **dispatch objective**, the **system operator** may apply to the **Authority** to require an **embedded generator** to provide information regarding the intended output of a group of **embedded generating stations** that total greater than 10 MW in capacity and that are connected to the same **grid exit point**. If the **Authority** approves the **system operator's** request, the information must be provided to the **system operator** by the relevant **embedded generator** in a form and manner determined by the **Authority**.

Compare: Electricity Governance Rules 2003 rule 4.1 to 4.6 section III part C

Clause 8.25(1), (2) and (6): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 8.25(1), (2) and (6): amended, on 5 October 2017, by clause 92(1) and (2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.25(2): amended, on 1 February 2016, by clause 10 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.25(5)(b): amended, on 5 October 2017, by clause 92(3) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

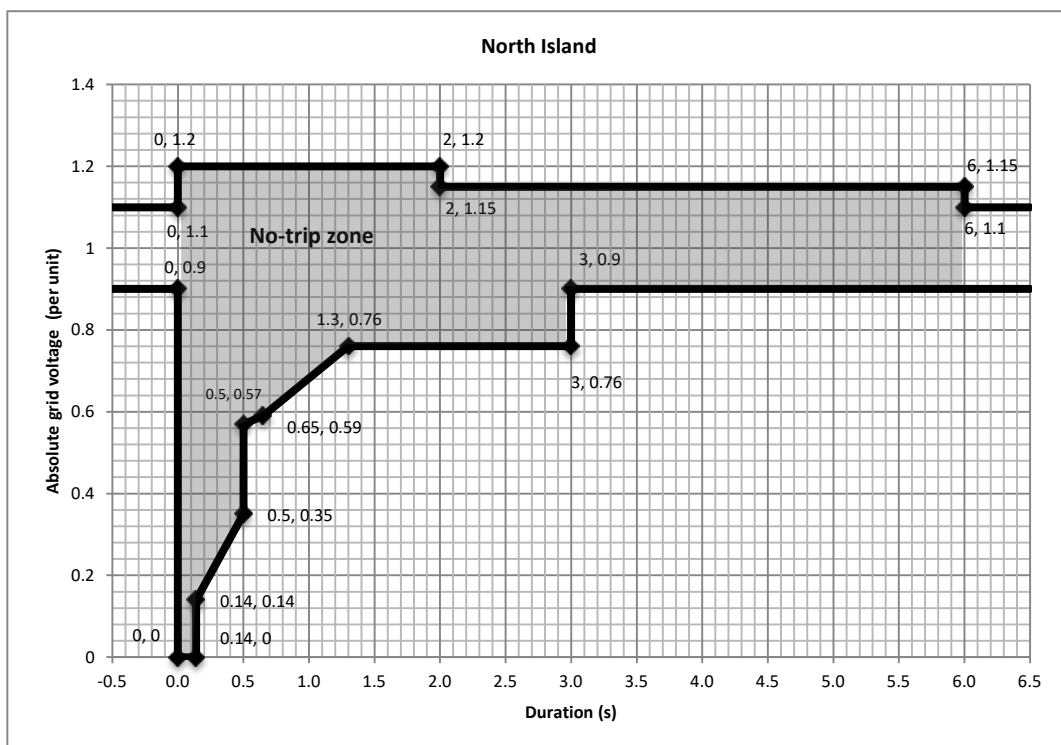
Clause 8.25(5)(b): amended, on 1 November 2018, by clause 11 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018.

### 8.25A Fault ride through

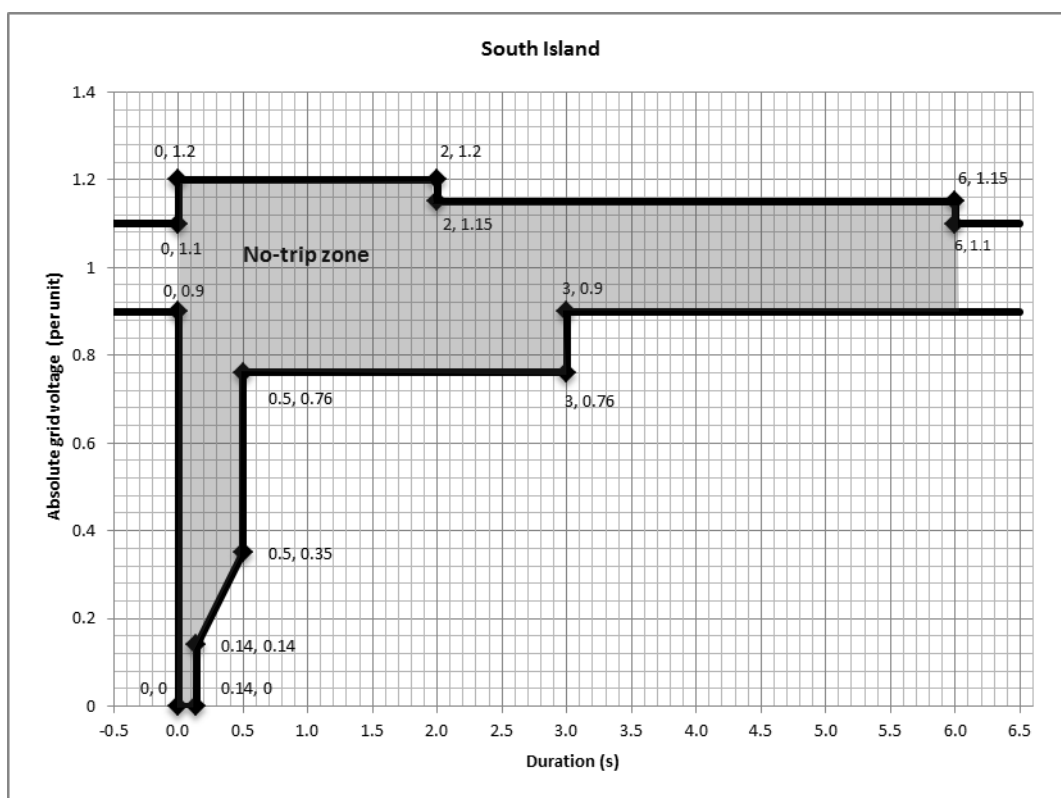
- (1) Each **generator** must ensure that each of its **assets**, when **electrically connected** to a **network**, is capable of remaining stable and **electrically connected** when the **grid's** lowest **line-to-line** voltage is within the no-trip zone shaded and marked "No-trip zone" in Figure 8.1 (for an **asset** in the North Island) or Figure 8.2 (for an **asset** in the South Island) for the period of 6 seconds immediately following the commencement of a zero impedance three-phase short circuit fault, or an unbalanced short circuit fault, on any part of the **grid** at 110 kV or 220 kV in the **island** in which the **asset** is connected.
- (2) Each **generator** must ensure that each of its **assets**, when **electrically connected** to a **network**, is capable of remaining stable and **electrically connected** when the highest **line-to-line** voltage at Haywards 220 kV bus (for an **asset** in the North Island) or Benmore 220 kV bus (for an **asset** in the South Island) is within the no-trip zone shaded and marked "No-trip zone" in Figure 8.3 for the period of 1 second immediately following the commencement of a trip of the **HVDC link**.
- (3) Whether a **generator** is complying with subclause (2) must be determined using power system analysis that uses—
  - (a) study cases provided by the relevant **grid owner**; and
  - (b) relevant system assumptions provided by the **system operator**.
- (4) A **generator** is not required to comply with subclause (1) in respect of an **asset** in the event of a fault of a type described in subclause (1) if the **asset** becomes isolated from the **grid** as a result of the fault.

- (5) A **generating unit** need not comply with subclause (1) to the extent that it is complying with a **special protection scheme** approved by the **system operator**.
- (6) The absolute **grid** voltage (per unit) shown on the Y axis of Figure 8.1 and Figure 8.2 is the ratio of **grid** lowest **line-to-line** voltage on a **line** to the nominal operating voltage of the **line** (that is, 110 kV or 220 kV).

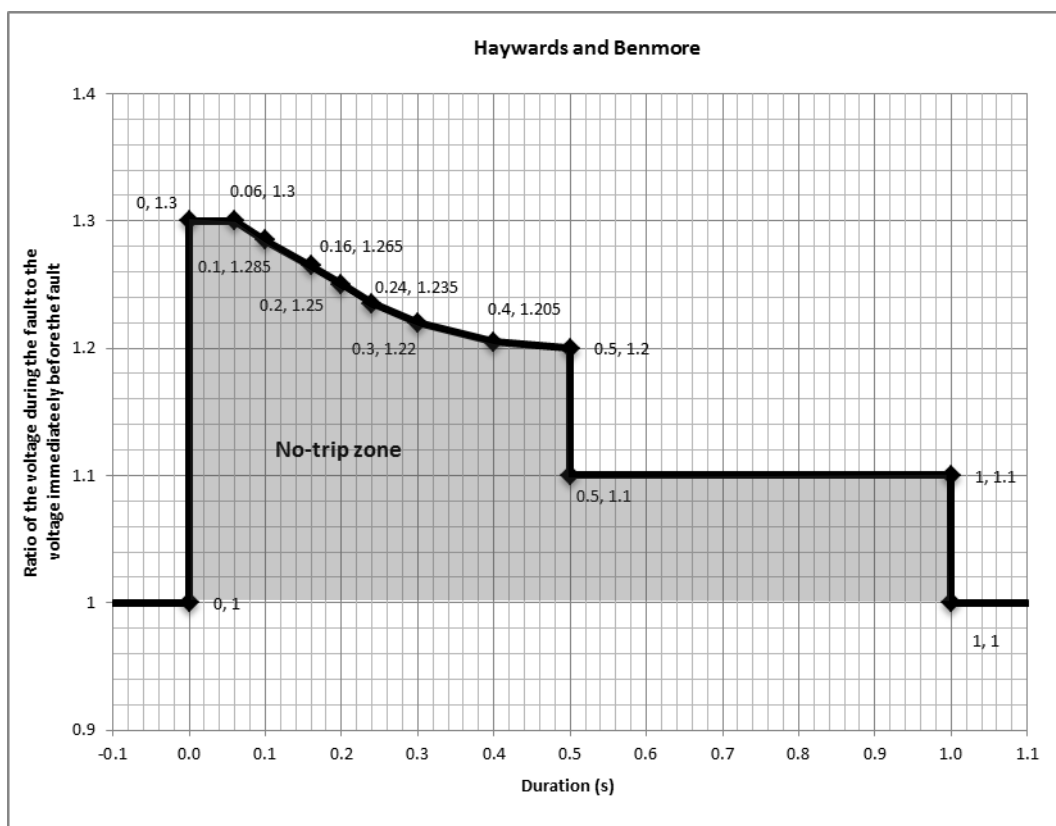
**Figure 8.1: North Island no-trip zone during 110 kV or 220 kV faults**



**Figure 8.2: South Island no-trip zone during 110 kV or 220 kV faults**



**Figure 8.3: Haywards and Benmore no-trip zone during permanent loss of the HVDC link**



Clause 8.25A Figure 8.1, Figure 8.2 and Figure 8.3: inserted, on 24 November 2016, by clause 6 of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

Clause 8.25A(1): amended, on 5 October 2017, by clause 93(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.25A(2): amended, on 5 October 2017, by clause 93(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 8.25B Reactive current and active power output

- (1) Each **generator** must ensure that each of its **generating units** generates **reactive current** to oppose the change in its terminal voltage without exceeding the maximum transient **reactive current** specified in the **generator's asset capability statement** for the period of 6 seconds immediately following the commencement of a fault on the **grid** of a type described in clause 8.25A(1).
- (2) Each **generator** must ensure that each of its **generating units** provides **active power** output relative to pre-fault **active power** output at least in proportion to the **grid** voltage at the **grid injection point** for the period of 6 seconds immediately following the clearance of a fault on the **grid** of a type described in clause 8.25A(1).
- (3) Subclause (2) does not apply to a **wind generating station** if there has been a reduction in the intermittent wind power source during the 6 seconds following the commencement of the fault.

Clause 8.25B: inserted, on 24 November 2016, by clause 6 of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

### 8.25C Use of additional equipment

A **generator** may comply with clause 8.25A in relation to a **generating station** by—

- (a) ensuring that the performance of **generating units** that comprise the **generating station** comply; or
- (b) installing additional equipment within the **generating station**; or
- (c) a combination of the methods described in paragraphs (a) and (b).

Clause 8.25C: inserted, on 24 November 2016, by clause 6 of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

### 8.25D Application

Clauses 8.25A and 8.25B do not apply—

- (a) to a **wind generating station** when it operates at less than 5% of rated **MW**; or
- (b) to any **asset** at an **excluded generating station**.

Clause 8.25D: inserted, on 24 November 2016, by clause 6 of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

### 8.26 Asset owners must co-operate

Each **asset owner** and each **purchaser** must co-operate with the **system operator** as may reasonably be required by the **system operator** in carrying out its functions.

Compare: Electricity Governance Rules 2003 rule 4.7 section III part C

## *Compliance*

### 8.27 System operator to monitor compliance

- (1) To the extent possible, given the information made available by **asset owners**, the **system operator** must monitor, in the manner set out in the **policy statement**, the ongoing compliance of **asset owners** with the **asset owner performance obligations** and the **technical codes**. To avoid doubt, the **system operator** has no monitoring obligations under this subpart other than those set out in the **policy statement**.
- (2) The **system operator** has a discretion to not **dispatch** an **asset** or configuration of **assets**, if it is not satisfied that the **assets** or configuration of **assets** comply with the relevant **asset owner performance obligations** or provisions of the **technical codes**, or that the **asset owner** has and is complying with a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**.
- (3) The **system operator** must immediately advise an **asset owner** if the **system operator** has reasonable grounds to believe that the **asset owner** is not complying with an **asset owner performance obligation**, **equivalence arrangement** or **dispensation**, and that the **asset owner**—
  - (a) does not have a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**: or
  - (b) is not complying with a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**.

Compare: Electricity Governance Rules 2003 rule 5 section III part C

Clause 8.27(2): amended, on 19 May 2016, by clause 23 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.28 Responsibility for compliance

- (1) Each **asset owner** must comply with the **asset owner performance obligations** and **technical codes** at all times and must satisfy the **system operator**, whenever requested by the **system operator** acting reasonably, that each of its **assets** or configuration of **assets** complies with the **asset owner performance obligations** and **technical codes** that apply to that **asset** or configuration of **assets**.
- (2) If the **system operator** advises an **asset owner** under clause 8.27(3), the **asset owner** must co-operate with the **system operator** and use reasonable endeavours to restore compliance as soon as practicable.
- (3) During a period of **commissioning** or testing of **assets**, the **asset owner performance obligations** and **technical codes** do not apply to the **asset owner** in respect of the **assets**, if—
  - (a) the obligations that do not apply to the **asset owner** are specified in the agreed **commissioning** plan or testing plan; and
  - (b) during the period of non-compliance the **asset owner** complies with a **commissioning** plan or testing plan (as appropriate) agreed with the **system operator**; and
  - (c) the period of non-compliance is no longer than the agreed **commissioning** plan or testing plan; and
  - (d) subject to subclause (4), if an **asset owner** during a period of non-compliance meets the requirements of paragraphs (a) to (c), neither the **asset owner** nor the **system operator** is liable under this Code in relation to the non-compliance, except that the **asset owner** is not relieved of liability in the case of a negligent act or omission by the **asset owner**.
- (4) During any period of non-compliance, the non-compliant **asset owner** must pay the readily identifiable and quantifiable costs associated with its non-compliance, including the costs of the **system operator** purchasing additional **ancillary services** required as a consequence of its non-compliance.

Compare: Electricity Governance Rules 2003 rule 6 section III part C

Clause 8.28(2): amended, on 1 November 2018, by clause 12 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018

Clause 8.28(3): amended, on 5 October 2017, by clause 94 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### *Equivalence arrangements and dispensations*

### 8.29 Right to apply for approval of equivalence arrangement or grant of dispensation

- (1) Subject to subclause (2), if an **asset owner** cannot comply with an **AOPO** or a **technical code** obligation in respect of a particular **asset** or configuration of **assets**, being an existing, new or proposed **asset**, the **asset owner** may apply for an **equivalence arrangement** to be approved or **dispensation** to be granted in accordance with Schedule 8.1.
- (2) The **system operator** may not grant a dispensation in relation to an obligation to provide **extended reserve** under clause 8.19(5) or Schedule 8.3, Technical Code B, clause 7.

Compare: Electricity Governance Rules 2003 rule 7.1 section III part C  
Clause 8.29(1): amended, on 7 August 2014, by clause 8(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.  
Clause 8.29(2): inserted, on 7 August 2014, by clause 8(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.30 Approval of equivalence arrangements

The **system operator** must approve an **equivalence arrangement** if it has received satisfactory evidence that the **asset owner** will put in place on the agreed date technical or commercial arrangements that will, in the reasonable opinion of the **system operator**, achieve compliance with the **AOPO** or **technical code** for which the **equivalence arrangement** is sought, even if the **assets** or configuration of **assets** do not strictly comply.

Compare: Electricity Governance Rules 2003 rule 7.2 section III part C

### 8.31 Grant of dispensations

- (1) Subject to subclause (1A), the **system operator** must grant a **dispensation** to an **asset owner** who has or will have **assets** or a configuration of **assets** that do not comply with either an **AOPO** or **technical code** if the **system operator** has a reasonable expectation that it can continue to operate the existing system and meet its **principal performance obligations** and if the **system operator** can readily quantify the costs on other persons of that **dispensation**, despite the non-compliance of the **assets**, but—
  - (a) if the approval of a **dispensation** could impose readily identifiable and quantifiable costs on other persons, a condition of the **dispensation** must be that the **asset owner** is liable to pay the **system operator** for those costs, including the costs of the **system operator** purchasing any other **ancillary services** required as a consequence of its **dispensation**; and
  - (b) the **asset owner** must acknowledge that the granting of a **dispensation** does not guarantee that the **system operator** will **dispatch** that **asset** for which the **dispensation** was granted, as **dispatch** will only occur in accordance with the **dispatch objective**; and
  - (c) if the **dispensation** is a **generating unit dispensation** from clause 8.19(1) or (3), the **generator** must be allocated the following costs in a relevant **trading period** with respect to paragraph (a) for each of **fast instantaneous reserves** or **sustained instantaneous reserves**:

$$\text{DispCost}_{\text{GENxt}} = 0.5 * Q_{\text{GENxt}} * P_{\text{IRt}}$$

where

**DispCost**<sub>GENxt</sub> is the cost payable by a **generator** for **generating unit x** in any **trading period t** in which a class of **instantaneous reserves** is procured as a direct result of that **generating unit's dispensation** to ensure that the frequency does not fall below 47 Hertz or, in the South Island, below the **minimum South Island frequency**

$Q_{GENxt}$  is the **MW** amount by which **generating unit**  $x$  is unable to sustain pre-event output in **trading period**  $t$  with reference to clause 8.19(1) or (3) (as the case may be) as determined from the capabilities specified in that **generating unit's dispensation** (different amounts may be specified with respect to each class of **instantaneous reserves**)

$P_{IRt}$  is the **final reserve price** for **fast instantaneous reserves** or **sustained instantaneous reserves** (as the case may be) in **trading period**  $t$  in the relevant **island**.

- (1A) If the **system operator** grants a **dispensation** from clause 8.25A or clause 8.25B to an **asset owner** under subclause (1), and the granting of the **dispensation** could impose readily identifiable and quantifiable costs on any other person, the **system operator** must not impose a condition on the **asset owner** in accordance with subclause (1)(a) that has effect earlier than 24 November 2018.
- (2) The **system operator** may impose other reasonable conditions on the grant of a **dispensation** under subclause (1), including conditions as to duration of the **dispensation**.

Compare: Electricity Governance Rules 2003 rules 7.3 and 7.4 section III part C

Clause 8.31(1): amended, on 15 May 2014, by clause 7 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

Clause 8.31(1): amended, on 24 November 2016, by clause 7(1) of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

Clause 8.31(1)(c): amended, on 19 May 2016, by clause 24 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.31(1A): inserted, on 24 November 2016, by clause 7(2) of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

### 8.32 Liability of asset owner pending decision

Pending determination of an **asset owner's** application for a **dispensation** or an **equivalence arrangement**, if the **asset** does not comply with the **AOPOs** or the **technical codes**, the **asset owner** is liable for the non-compliance and is responsible for additional costs incurred by the **system operator** or **asset owners** as a result of the non-compliance, including the costs of the **system operator** purchasing other **ancillary services** as a consequence of the non-compliance.

Compare: Electricity Governance Rules 2003 rule 8 section III part C

Clause 8.32: amended, on 15 May 2014, by clause 8 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

### 8.33 Modification of equivalence arrangement or dispensation

An **asset owner** may apply to the **system operator** for a modification to an **equivalence arrangement** or **dispensation**, in which case clauses 8.34 to 8.36 and Schedule 8.1 apply.

Compare: Electricity Governance Rules 2003 rule 8.1 section III part C

### 8.34 Cancellation of equivalence arrangement or dispensation

- (1) An **asset owner** may at any time give written notice to the **system operator** for an

**equivalence arrangement** or a **dispensation** to be cancelled on the grounds that the **asset** or configuration of **assets** subject to the **equivalence arrangement** or **dispensation** complies with **APOOs** or **technical codes**.

- (2) A cancellation takes effect on the date specified in the notice as being the date the **system operator** accepted the cancellation.
- (3) The **system operator** must record the cancellation in the **system operator register** no later than 5 days after receiving the notice.

Compare: Electricity Governance Rules 2003 rule 8.2 section III part C

### 8.35 Revocation of equivalence arrangement and revocation or variation of dispensation

- (1) The **system operator** may revoke approval of an **equivalence arrangement** or revoke or vary the grant of a **dispensation** as the **system operator** reasonably considers appropriate if, at any time after the **system operator** has approved an **equivalence arrangement** or granted a **dispensation**, the **system operator** is satisfied that 1 or more of the following apply:
  - (a) the **dispensation** or **equivalence arrangement** was approved on information that was false or materially misleading:
  - (b) a prerequisite of the **dispensation** or **equivalence arrangement** has changed:
  - (c) a condition on which the **dispensation** or **equivalence arrangement** was approved has not been complied with:
  - (d) withdrawal is **provided** for under the terms of the **dispensation** granted:
  - (e) a change to this Code has occurred that affects the **dispensation** or **equivalence arrangement**:
  - (f) a decision has been reconsidered at the direction of the **Rulings Panel** under clause 8.36(4).
- (2) The **system operator** must not revoke or amend a **dispensation** or grant a further **dispensation** or revoke its approval of an **equivalence arrangement** under subclause (1), unless—
  - (a) the **asset owner** to whom the **dispensation** was granted, or for whom an **equivalence arrangement** was approved, and any other person who in the opinion of the **system operator** is likely to have an interest in the matter, is given reasonable notice of the **system operator**'s intentions and a reasonable opportunity to make submissions to the **system operator** on the issue; and
  - (b) the **system operator** has had regard to the submissions.

Compare: Electricity Governance Rules 2003 rule 8.3 section III part C

### 8.36 Appeal against decisions

- (1) A **participant** may appeal a decision of the **system operator** in relation to an application for **dispensation** or **equivalence arrangements** on the grounds set out in subclause (3).
- (2) An appeal must be made to the **Rulings Panel** by giving written notice to the **Authority** specifying the grounds of appeal. A notice must be given no later than 10 **business days** after publication of the relevant decision in the **system operator register** under clause 8



of Schedule 8.1.

- (3) For the purposes of subclause (2), an appeal may be made on the grounds that—
  - (a) the **system operator** made an error of fact or failed to take into account all relevant information or took into account irrelevant information and such error, failure or irrelevancy was material to the decision; or
  - (b) the conditions imposed on the **dispensation** or **equivalence arrangement** are unjustifiably onerous, unnecessary or impose extra costs if appropriate alternatives exist.
- (4) The **Rulings Panel**, in determining an appeal, must approve the decision of the **system operator** or direct the **system operator** to reconsider the decision in full or by reference to specified matters.
- (5) Pending the outcome of an appeal, the decision of the **system operator** in relation to the grant of a **dispensation** or approval of an **equivalence arrangement** remains valid and may be relied upon by the relevant **asset owner**.

Compare: Electricity Governance Rules 2003 rule 8.4 section III part C  
Clause 8.36(1): amended, on 1 November 2018, by clause 13 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018.

### **8.37 Other provisions relating to equivalence arrangements and dispensations**

- (1) An **asset owner** who obtains approval for an **equivalence arrangement** must comply with its obligations under that arrangement.
- (1A) An **asset owner** who is granted a **dispensation** must comply with its obligations under that **dispensation**.
- (2) An **equivalence arrangement** and a **dispensation** are specific to an **asset owner**, and no approval of an **equivalence arrangement** or granting of a **dispensation** creates a precedent for the approval of other **equivalence arrangements** or **dispensations**.
- (3) The owner or operator of an **asset** or configuration of **assets** must advise the **system operator** if the owner or operator believes that it is in breach of a condition of its **dispensation** or **equivalence arrangement** or that the **asset** or configuration of **assets**, including any **equivalence arrangement**, does not, or is likely not to, comply with the **asset owner performance obligations** and **technical codes**.
- (4) If an **asset owner** fails to put in place, maintain and meet all requirements of an approved **equivalence arrangement** or **dispensation**, the **asset owner** is in breach of this Code.

Compare: Electricity Governance Rules 2003 rule 9 section III part C  
Clause 8.37(1A): inserted, on 15 May 2014, by clause 9 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

### **8.38 Authority may require excluded generating stations to comply with certain clauses**

- (1) Despite clauses 8.17, 8.19, and 8.25D, the **system operator** may, at any time, apply to the **Authority** for the **Authority** to issue a directive that an **excluded generating station asset** must comply with clauses 8.17, 8.19, 8.25A, and 8.25B, and the provisions of the **technical codes** (or parts thereof).
- (2) The **Authority** must issue the directive referred to in subclause (1) if the **Authority** is satisfied that there is a **benefit to the public** in obtaining compliance.
- (3) If a directive is issued under subclause (2), the owner of the **excluded generating**

**station asset** must comply with the directive with effect from the date specified in the directive.

Compare: Electricity Governance Rules 2003 rule 10 section III part C  
Clause 8.38(1): amended, on 24 November 2016, by clause 8(1) and (2) of the Electricity Industry Participation Code Amendment (Generation Fault Ride Through) 2016.

### Subpart 3—Arrangements concerning ancillary services

#### 8.39 Contents of this subpart

This subpart provides for—

- (a) a **procurement plan** that the **system operator** must use reasonable endeavours to implement and comply with; and
- (b) the review of the **procurement plan**; and
- (c) **alternative ancillary service arrangements**; and
- (d) how **ancillary services** are to be priced and measured; and
- (e) identifying the **allocable costs** for **ancillary services** and the regime by which those costs are allocated to affected parties.

Compare: Electricity Governance Rules 2003 rule 1 section IV part C

#### *Procurement plan*

#### 8.40 System operator to use reasonable endeavours to implement and comply with procurement plan

The **system operator** must use reasonable endeavours to both implement and comply with the **procurement plan**.

Compare: Electricity Governance Rules 2003 rule 2 section IV part C

#### 8.41 *[Revoked]*

Clause 8.41: revoked, on 10 January 2013, by clause 15 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

#### 8.42 Incorporation of procurement plan by reference

- (1) The **procurement plan** is incorporated by reference in this Code in accordance with section 32 of the **Act**.
- (2) Subclause (1) is subject to Schedule 1 of the **Act**, which includes a requirement that the **Authority** must give notice in the *Gazette* before an amended or substituted **procurement plan** becomes incorporated by reference in this Code.

Compare: Electricity Governance Rules 2003 rule 3 section IV part C  
Clause 8.42(1): amended, on 10 January 2013, by clause 16 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

#### 8.42A Review of procurement plan

- (1) At least once every 2 years the **system operator** must—
  - (a) review the **procurement plan**; and
  - (b) as soon as practicable after completing the review, decide whether or not to propose a change to the **procurement plan**; and
  - (c) advise the **Authority** of its decision.

- (2) If the **system operator** decides to propose a change to the **procurement plan**, the **system operator** must submit a **draft procurement plan** to the **Authority** together with the following information:
  - (a) an explanation of the proposed change and a statement of the objectives of the proposed change:
  - (b) an evaluation of the costs and benefits of the proposed change:
  - (c) an evaluation of alternative means of achieving the objectives of the proposed change:
  - (d) a list of the persons consulted and a summary of the submissions received.
- (3) As part of a review conducted under this clause, the **system operator** must invite comments from **participants**.

Clause 8.42A: inserted, on 10 January 2013, by clause 17 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.42A(1): amended, on 5 October 2017, by clause 95 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.42B System operator decides not to amend the procurement plan**

If the **system operator** advises the **Authority** under clause 8.42A(1)(c) that the **system operator** does not intend to propose a change to the **procurement plan** the **system operator** must provide the **Authority** with the following information:

- (a) the findings of the review of the **procurement plan** conducted by the **system operator**:
- (b) details of any request to amend the **procurement plan** received from a **participant** or the **Authority** since the last review:
- (c) the **system operator's** decision on each such request including, if the **system operator** declined a requested change, the reason for declining.

Clause 8.42B: inserted, on 10 January 2013, by clause 17 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

#### **8.42C Authority may require system operator to reconsider**

- (1) The **Authority** may require the **system operator** to reconsider a decision made under clause 8.42A(1)(b) not to propose a change to the **procurement plan**.
- (2) If the **Authority** requires the **system operator** to reconsider a decision made under subclause 8.42A(1)(b) the **Authority** must advise the **system operator** of—
  - (a) the **Authority's** reasons for requiring the **system operator** to reconsider; and
  - (b) the date, determined after consulting the **system operator**, by which the **system operator** must either confirm its decision or submit a **draft procurement plan**.
- (3) The **Authority** must as soon as practicable **publish** the advice received from the **system operator** under clause 8.42A(1)(c) and the advice given by the **Authority** to the **system operator** under subclause (2).

Clause 8.42C: inserted, on 10 January 2013, by clause 17 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.42C(3): amended, on 5 October 2017, by clause 96 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.43 Content of draft procurement plan**

The **draft procurement plan** must, for each **ancillary service**—

- (a) specify the principles that the **system operator** must apply in making a **net purchase quantity assessment**, which must include—
  - (i) determining the requirements for complying with the **principal performance obligations**; and
  - (ii) determining the requirements for achieving the **dispatch objective**; and
  - (iii) assessing the contribution that compliance by **asset owners** with the **asset owner performance obligations** will make towards the **system operator's** compliance with the **principal performance obligations**; and
  - (iv) assessing the impact that **dispensations** and **alternative ancillary services arrangements** held by **asset owners** will have on the quantity of **ancillary services** required to enable the **system operator** to comply with the **principal performance obligations**; and
- (b) contain a methodology for conducting a **net purchase quantity assessment** for each relevant **ancillary service**; and
- (c) outline the process that the **system operator** must use to procure that **ancillary service**, taking into account that the **system operator** must use—
  - (i) market mechanisms to procure **ancillary services** wherever technology and transaction costs make this practicable and efficient; and
  - (ii) transparent processes that encourage all potential providers to compete to supply **ancillary services** required to meet **common quality** standards at the best economic cost; and
- (d) specify the **administrative costs** for that **ancillary service** as proposed in the **draft procurement plan**; and
- (e) outline the **system operator's** technical requirements and key contract terms to support the **procurement plan**; and
- (f) outline the rights and obligations of the **system operator** in relation to procurement of that **ancillary service** in circumstances not anticipated by the **draft procurement plan**, and if the assumptions made by the **system operator** in the **procurement plan** cannot be met; and
- (g) outline how the **system operator** will report on progress in implementing the **procurement plan**.

Compare: Electricity Governance Rules 2003 rule 4 section IV part C

Clause 8.43: substituted, on 10 January 2013, by clause 18 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.43: amended, on 19 December 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

### 8.43A Changes and variations

- (1) The **system operator** may at any time propose a change to the **procurement plan** by submitting a **draft procurement plan** to the **Authority** together with the following information:
  - (a) an explanation of the proposed change and a statement of the objectives of the proposed change;
  - (b) an evaluation of alternative means of achieving the objectives of the proposed change;
  - (c) an evaluation of the costs and benefits of the proposed change.

- (2) The **Authority** or a **participant** may at any time request that the **system operator** propose a change to the **procurement plan** under subclause (1).
- (3) If the **system operator** receives a request under subclause (2), it must as soon as practicable—
  - (a) decide whether to decline the request, defer the request until the next **review date**, or submit a **draft procurement plan** to the **Authority**; and
  - (b) **publish** the decision.
- (4) If the **system operator** declines a request under subclause (3) the **Authority** may require the **system operator** to reconsider its decision, giving reasons.

Clause 8.43A: inserted, on 10 January 2013, by clause 19 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.43A(3)(b): amended, on 5 October 2017, by clause 97 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.44 Consultation on draft procurement plan**

- (1) The **Authority** must **publish** the following information as soon as practicable after it receives it:
  - (a) a **draft procurement plan** submitted under clause 8.42A and the information required under clause 8.42A(2):
  - (b) a **draft procurement plan** submitted under clause 8.43A and the information required under clause 8.43A(1)(a) to (c).
- (2) When the **Authority publishes** a **draft procurement plan** and information under subclause (1) the **Authority** must advise **participants** of the date (which must not be earlier than 10 **business days** after the date that the **Authority publishes** the **draft procurement plan**) by which submissions on the changes proposed in the **draft procurement plan** must be received by the **Authority**.
- (3) Each submission on changes proposed in a **draft procurement plan** must be made in writing to the **Authority** and received on or before the **submission expiry date**.
- (4) The **Authority** must provide a copy of each submission received to the **system operator** at the close of business on the **submission expiry date** and must **publish** the submissions as soon as practicable.
- (5) The **system operator** may make its own submission on the **draft procurement plan** and the submissions received in relation to it no later than 10 **business days** after the **submission expiry date**.
- (6) The **Authority** must **publish** the **system operator's** submission as soon as practicable after it is received.
- (7) Following the consultation process required by subclauses (1) to (6), the **Authority** may approve the **draft procurement plan** subject to the **system operator** making any changes that the **Authority** considers appropriate.

Compare: Electricity Governance Rules 2003 rule 5 section IV part C

Clause 8.44: substituted, on 10 January 2013, by clause 20 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.44(1), (4) and (6): amended, on 5 October 2017, by clause 98(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.44(2): amended, on 5 October 2017, by clause 98(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### 8.44A Technical and non-controversial amendments

- (1) The **system operator** may at any time propose a change to the **procurement plan** that it considers is technical and non-controversial by submitting a **draft procurement plan** to the **Authority** together with an explanation of the proposed change.
- (2) If the **system operator** submits a **draft procurement plan** under subclause (1) it is not required to provide a statement of the objectives of the proposed change, an evaluation of alternative means of achieving the objectives of the proposed change or an evaluation of the costs and benefits of the proposed change.
- (3) The **Authority** must, as soon as practicable after receiving a **draft procurement plan** and the information required under subclause (1), by notice in writing to the **system operator**—
  - (a) approve the **draft procurement plan** to be incorporated by reference into this Code; or
  - (b) decline to approve the **draft procurement plan**, giving reasons.
- (4) If the **Authority** approves the **draft procurement plan** it must as soon as practicable—
  - (a) **publish** notice of its intention to incorporate the **draft procurement plan** by reference into this Code; and
  - (b) include in the notice the **Authority's** reasons for considering that the changes proposed in the **draft procurement plan** are technical and non-controversial; and
  - (c) invite comment from **participants** on the reasons given in the notice.
- (5) After considering any comments made under subclause 4(c) the **Authority** must advise the **system operator** by notice in writing of its decision as to whether to confirm or revoke its approval of the **draft procurement plan**, and give reasons for its decision.
- (6) The **Authority** must **publish** its decision and reasons as soon as practicable.

Clause 8.44A: inserted, on 10 January 2013, by clause 21 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.44A(4)(a) and (6): amended, on 5 October 2017, by clause 99 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### 8.44B Authority adopts new procurement plan

If the **Authority** approves a **draft procurement plan** under clause 8.44 or confirms its approval of a **draft procurement plan** under clause 8.44A it must—

- (a) incorporate the new **procurement plan** by reference into this Code in accordance with Schedule 1 of the **Act**; and
- (b) **publish** the new **procurement plan** and the date on which it takes legal effect.

Clause 8.44B: inserted, on 10 January 2013, by clause 21 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.44B(b): amended, on 5 October 2017, by clause 100 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### 8.45 Contracts with ancillary service agents

- (1) The **system operator** must use reasonable endeavours to implement the **procurement plan** for each **ancillary service** by entering into contracts with the **ancillary service agents** in the manner specified in the **procurement plan**.
- (2) The **system operator** is the principal in any contract it enters into with an **ancillary service agent**.
- (3) If the **system operator** has entered into a contract, the **system operator** must use

reasonable endeavours to ensure that the **ancillary service agent** complies with its contractual obligations, but the **system operator** is not otherwise liable in respect of any failure by an **ancillary service agent** to comply with such obligations.

Compare: Electricity Governance Rules 2003 rule 6 section IV part C

#### **8.45A Methodology to assess net purchase quantity**

The **system operator** must make the **net purchase quantity assessment** for each relevant **ancillary service** using the methodology in the **procurement plan** and **publish** the results of the assessment as soon as practicable.

Clause 8.45A: inserted, on 10 January 2013, by clause 22 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.45A: amended, on 5 October 2017, by clause 101 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.46 [Revoked]**

Compare: Electricity Governance Rules 2003 rule 7 section IV part C

Clause 8.46: revoked, on 10 January 2013, by clause 23 of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

#### **8.47 Departure from procurement plan**

- (1) The **system operator** may depart from the processes and arrangements set out in the **procurement plan** if the **system operator** reasonably considers it necessary to do so to comply with the **principal performance obligations**.
- (2) When the **system operator** makes a departure under subclause (1), the **system operator** must provide a report to the **Authority** setting out the circumstances of the departure and the actions taken to deal with it.
- (3) The **Authority** must **publish** the report within a reasonable time after receiving it.

Compare: Electricity Governance Rules 2003 rule 8 section IV part C

Clause 8.47(2): amended, on 10 January 2013, by clause 24(a) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.47(3): inserted, on 10 January 2013, by clause 24(b) of the Electricity Industry Participation (Policy Statement and Procurement Plan Review Process) Code Amendment 2012.

Clause 8.47(3): amended, on 5 October 2017, by clause 102 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### *Alternative ancillary service arrangements*

#### **8.48 Alternative ancillary service arrangements**

- (1) If an **asset owner** wishes to have an **alternative ancillary service arrangement** authorised by the **system operator**, that **asset owner** (or, if more than 1 **asset owner** wishes to have an authorisation, those **asset owners** jointly) may apply to the **system operator** to have that arrangement authorised as an **alternative ancillary service arrangement** using the process set out in Schedule 8.2.
- (2) The **system operator** must authorise the arrangement as an **alternative ancillary service arrangement** if—
  - (a) the proposed arrangement complies with the technical requirements for that **ancillary service** as set out in the current **procurement plan**; and
  - (b) the implementation of the proposed arrangement will make the **ancillary service** available for **dispatch** by the **system operator** in substantially the same manner

as if the **ancillary service** had been procured in accordance with the **procurement plan**.

- (3) As a condition of authorising an **alternative ancillary service arrangement** under subclause (2), the **system operator** may do 1 or more of the following:
- (a) require the **asset owner** to enter into arrangements with the **system operator** to ensure that the **system operator** can continue to meet the **principal performance obligations**;
  - (b) specify the date on which the **alternative ancillary service arrangement** commences;
  - (c) impose any other condition it reasonably believes is necessary, including conditions necessary for the **system operator** to meet its **principal performance obligations** and conditions necessary for the orderly reconciliation and settlement of **ancillary services**.

Compare: Electricity Governance Rules 2003 rules 9.1 to 9.3 section IV part C

#### **8.49 Suspension of alternative ancillary service arrangement**

- (1) An **asset owner** may at any time give written reasonable notice to the **system operator** of suspension of the **alternative ancillary service arrangement** for a period specified in the notice.
- (2) The **system operator** may suspend an **alternative ancillary service arrangement** in a **system security situation**.

Compare: Electricity Governance Rules 2003 rule 9.4 section IV part C

#### **8.50 Modification of alternative ancillary service arrangement**

An **asset owner** may apply to the **system operator** for a modification to an **alternative ancillary service arrangement** in which case clauses 8.51 to 8.53 and Schedule 8.2 apply.

Compare: Electricity Governance Rules 2003 rule 9.5 section IV part C

#### **8.51 Cancellation of alternative ancillary service arrangement**

An **asset owner** may at any time give reasonable notice in writing to the **system operator** of cancellation of the **alternative ancillary service arrangement**, which comes into effect on the date specified in the notice.

Compare: Electricity Governance Rules 2003 rule 9.6 section IV part C

#### **8.52 Revocation of alternative ancillary service arrangements**

- (1) The **system operator** may revoke authorisation of the **alternative ancillary service arrangement** as the **system operator** reasonably considers appropriate, if at any time after the **system operator** has authorised an **alternative ancillary service arrangement**, the **system operator** is satisfied that 1 or more of the following factors apply:
  - (a) the **alternative ancillary service arrangement** was authorised on information that was false or materially misleading;
  - (b) a prerequisite of the **alternative ancillary service arrangement** has changed;
  - (c) a condition upon which the authorisation was granted has not been complied with;



- (d) such revocation is provided for under the terms of the authorisation.
- (2) Subject to clause 8.49(2), the **system operator** must not revoke or amend an **alternative ancillary service arrangement** unless—
- (a) the person to whom the authorisation was granted and any other person who, in the opinion of the **system operator**, is likely to have an interest in the matter, is given reasonable notice of the **system operator's** intentions and a reasonable opportunity to make submissions to the **system operator**; and
- (b) the **system operator** has had regard to those submissions.

Compare: Electricity Governance Rules 2003 rule 9.7 section IV part C

### 8.53 Appeal of system operator decisions

- (1) An applicant may appeal any decision of the **system operator** in relation to any **alternative ancillary service arrangement**.
- (2) A **participant** may appeal any decision of the **system operator** in relation to an **alternative ancillary service arrangement** on the grounds set out in subclause (4).
- (3) An appeal must be commenced with the **Rulings Panel** by giving written notice to the **Authority**, specifying the grounds of appeal. A notice must be given within 10 **business days** of **publication** of the decision in the **system operator register** under clause 4 of Schedule 8.2.
- (4) For the purpose of subclause (2), an appeal may be made on the grounds that—
- (a) the **system operator** made an error of fact, or failed to take properly into account all relevant information or took into account irrelevant information, and such error, failure or irrelevancy was material to the decision; or
- (b) the conditions imposed on the **alternative ancillary service arrangement** are onerous, unnecessary or impose extra costs if appropriate alternatives exist.
- (5) The **Rulings Panel**, in determining an appeal, must either approve the decision of the **system operator** or direct the **system operator** to reconsider the decision in full or by reference to specified matters.
- (6) Pending the outcome of an appeal, the decision of the **system operator** in relation to the authorisation of an **alternative ancillary service arrangement** remains valid and can be acted upon by the relevant **asset owner**.

Compare: Electricity Governance Rules 2003 rule 9.8 section IV part C

### 8.54 Other provisions relating to alternative ancillary service arrangements

- (1) The **system operator** must monitor the performance of **alternative ancillary service arrangements** in accordance with the **procurement plan** and the monitoring regimes specified in the respective **alternative ancillary service arrangements**. If the **system operator** considers, on reasonable grounds, that an **alternative ancillary service arrangement** is not being, or likely not to be, complied with, the **system operator** must immediately advise the **asset owner**.
- (2) An **asset owner** who obtains an authorisation of an **alternative ancillary service arrangement** must comply with its obligations under the arrangement. If the **system operator** advises an **asset owner** under subclause (1), the **asset owner** must co-operate with the **system operator** and must immediately use reasonable endeavours to restore

compliance as soon as possible.

- (3) An **asset owner** who holds an **alternative ancillary service arrangement** is relieved of an obligation to pay costs for **ancillary service** in the manner provided for in clauses 8.55 to 8.59 and 8.64 to 8.70 to the extent provided for in the **alternative ancillary service arrangement**.
- (4) The holder of an **alternative ancillary service arrangement** breaches this Code if **ancillary services** are not made available to the **system operator** in accordance with the **alternative ancillary service arrangement**, or if an **alternative ancillary service arrangement** fails. From the date a breach of an **alternative ancillary service arrangement** becomes known, the holder of the **alternative ancillary service arrangement** must meet its share of the ancillary costs as if the **alternative ancillary service arrangement** had not been authorised.

Compare: Electricity Governance Rules 2003 rule 10 section IV part C  
Clause 8.54(2): amended, on 1 November 2018, by clause 14 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018.

## Subpart 4—Interruptible load

Heading: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.54A Contents of this subpart

This subpart provides for the provision of information relating to **interruptible load**.

Clause 8.54A: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.54B Ancillary service agents to provide information about interruptible load

- (1) Each **ancillary service agent** that contracts for **interruptible load** in a **network** must, within 10 **business days** of entering into the contract, give the following **participants** the information in subclause (2):
  - (a) if the **interruptible load** is contracted on a **local network**, the **connected asset owner** that operates the **local network**;
  - (b) if the **interruptible load** is contracted on an **embedded network**, the **connected asset owner** that operates the **local network** to which the **embedded network** is **connected**;
  - (c) if the **interruptible load** is contracted on the **grid**, the **grid owner** that owns or operates the part of the **grid** on which the **interruptible load** is contracted.
- (2) The information required is—
  - (a) a list of the **ICPs** to which the contract relates; and
  - (b) the maximum **MW** that can be interrupted under the contract; and
  - (c) the commencement and expiry dates of the contract.
- (3) If an **ancillary service agent** has given a **connected asset owner** or **grid owner** information under subclause (1), the **connected asset owner** or **grid owner** may require the **ancillary service agent** to provide further information about the **interruptible load** to which the contract relates.
- (4) An **ancillary service agent** must comply with a requirement under subclause (3).

Clause 8.54B: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54B(1)(b): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 8.54B(1) and (3): amended, on 1 February 2016, by clause 11 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

## Subpart 5—Extended reserve

Heading: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.54C Contents of this subpart

This subpart provides for the procurement of **extended reserve**.

Clause 8.54C: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.54D System operator to review extended reserve

- (1) The **system operator** must review the technical requirements for **extended reserve** in accordance with this clause.
- (2) The **Authority** may, at any time, give the **system operator** principles outlining the **Authority's** expectations for the objectives of the review.
- (3) As part of the review, the **system operator** must consider any principles given to the **system operator** by the **Authority** under subclause (2).
- (4) On the basis of the review, the **system operator** must prepare and **publish**—
  - (a) an **extended reserve technical requirements report**; and
  - (b) an **extended reserve technical requirements schedule**.
- (5) The **extended reserve technical requirements report** must reflect the **system operator's** analysis of the technical requirements for **extended reserve** on which the **extended reserve technical requirements schedule** is based.
- (6) The **extended reserve technical requirements schedule** must—
  - (a) specify the technical specifications for **extended reserve** that the **system operator** requires in order to be able to comply with the **principal performance obligations**; and
  - (b) specify requirements for periodic testing that each **extended reserve provider** will be required to carry out in relation to the relevant **assets**.
- (7) The consultation requirements in Part 1 of Schedule 8.5 apply to the preparation and **publication** of the **extended reserve technical requirements schedule**.

Clause 8.54D: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### 8.54E Review of extended reserve technical requirements schedule

- (1) The **system operator** must—
  - (a) review the **extended reserve technical requirements schedule** under this clause; and
  - (b) as soon as practicable after completing the review, decide whether to propose a change to the schedule; and
  - (c) advise the **Authority** of its decision.

- (2) The review must be conducted so that the **system operator** advises the **Authority** of its decision no later than 60 months after the date on which the **system operator** advised the **Authority** of its decision on the previous review.
- (3) The **Authority** may direct the **system operator** to review the **extended reserve technical requirements schedule** at a time that is sooner than required under subclause (2).
- (4) If the **system operator** decides to propose a change to the **extended reserve technical requirements schedule** as a result of a review, the **system operator** must—
  - (a) prepare and **publish**—
    - (i) an **extended reserve technical requirements report**; and
    - (ii) an **extended reserve technical requirements schedule**; and
  - (b) provide the following additional information when giving a draft of the revised schedule to the **Authority** under clause 2(2) of Schedule 8.5:
    - (i) an explanation of the proposed change and a statement of the objectives of the proposed change;
    - (ii) an evaluation of the costs and benefits of the proposed change;
    - (iii) an evaluation of alternative means of achieving the objectives of the proposed change.
- (5) Clause 8.54D(2), (3) and (5) to (7) applies to each review of the **extended reserve technical requirements schedule**.
- (6) If the **system operator** advises the **Authority** that it does not intend to propose a change to the **extended reserve technical requirements schedule**, the **system operator** must give the **Authority** the findings of its review of the schedule.

Clause 8.54E: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54E(2): amended, on 19 December 2014, by clause 10 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

#### **8.54F Authority may require system operator to reconsider**

- (1) The **Authority** may require the **system operator** to reconsider a decision made under clause 8.54E(1)(c) not to propose a change to the **extended reserve technical requirements schedule**.
- (2) If the **Authority** requires the **system operator** to reconsider, the **Authority** must advise the **system operator** of—
  - (a) the **Authority's** reasons for requiring the **system operator** to reconsider; and
  - (b) the date, determined after consulting with the **system operator**, by which the **system operator** must—
    - (i) confirm its decision under clause 8.54E(1)(c); or
    - (ii) provide a draft of the revised schedule to the **Authority** under clause 2(2) of Schedule 8.5.
- (3) The **Authority** must as soon as practicable **publish** the advice received from the **system operator** under clause 8.54E(1)(c) and any advice given by the **Authority** to the **system operator** under subclause (2).

Clause 8.54F: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54F(3): amended, on 5 October 2017, by clause 103 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### **8.54G Preparation and publication of extended reserve selection methodology**

- (1) The **extended reserve manager** must prepare and **publish** an **extended reserve selection methodology**.
- (2) The methodology must specify how the **extended reserve manager** will procure **extended reserve** according to the **extended reserve technical requirements schedule**.
- (3) The methodology must—
  - (a) be based on the principles specified in clause 8.54H; and
  - (b) specify how the methodology applies to each **island**, including, if appropriate, specifying that the methodology does not apply to an **island**; and
  - (c) identify the **asset owners** that are required to provide information during an **extended reserve** selection process; and
  - (d) specify the information that the **asset owners** are required to provide; and
  - (e) specify the time frame within which **asset owners** are required to provide the information; and
  - (f) specify the basis on which the **extended reserve manager** selects **asset owners** to be **extended reserve providers**; and
  - (g) include default terms and conditions specifying the basis on which **extended reserve** must be provided, including requirements for periodic testing of **assets**.
- (3A) If the **extended reserve manager** decides that **asset owners** will receive payment for providing **extended reserve**, the methodology must specify how payments are set.
- (4) The consultation and approval requirements in Part 2 of Schedule 8.5 apply to the preparation and **publication** of the **extended reserve selection methodology**.

Clause 8.54G: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54G(3)(g): amended, on 5 October 2017, by clause 104(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.54G(3)(h): revoked, on 5 October 2017, by clause 104(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.54G(3A): inserted, on 5 October 2017, by clause 104(3) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### **8.54H Principles for extended reserve selection methodology**

- (1) The **extended reserve selection methodology** must give effect to the principles specified in subclause (2).
- (2) The **extended reserve selection methodology** must—
  - (a) reflect a balance of interests between potential **extended reserve providers**, and between such providers and the **system operator**; and
  - (b) enable **extended reserve** to be procured cost-effectively, by setting out how to evaluate—
    - (i) the expected cost of providing the **extended reserve** (including capital and operating costs); and
    - (ii) in the case of **extended reserve** that involves the interruption of load, the expected cost of an interruption during an event that calls on **extended reserve**, taking into account opportunity cost and the performance

- characteristics of the relevant load; and
- (iii) the likely transaction costs associated with administering **extended reserve** and in providing **extended reserve**; and
- (c) seek an appropriate balance between certainty in the provision of **extended reserve** products and flexibility to accommodate changes in circumstances and technologies.

Clause 8.54H: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### **8.54I Review of extended reserve selection methodology**

- (1) The **Authority** may direct the **extended reserve manager** to review the **extended reserve selection methodology**.
- (2) Clause 8.54G applies to each review of the **extended reserve selection methodology**, except that the **extended reserve manager** must give a draft of the revised methodology to the **Authority** and the **system operator** under clause 5(2) of Schedule 8.5 no later than 40 **business days** after the date of the direction under subclause (1).

Clause 8.54I: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### **8.54J Extended reserve manager to undertake extended reserve selection process**

- (1) The **extended reserve manager** must undertake an **extended reserve** selection process in accordance with the **extended reserve selection methodology** when directed to do so by the **Authority**.
- (2) The **Authority** must make a direction under subclause (1) no later than 60 months after the **publication** of the current **extended reserve procurement schedule**.
- (3) The **Authority** may direct the **extended reserve manager** as to the scope of a selection process.
- (4) If the **Authority** directs the **extended reserve manager** to undertake a limited selection process under subclause (3), the **Authority** must give reasons for the direction.
- (5) After completing a selection process, the **extended reserve manager** must prepare and **publish** an **extended reserve procurement schedule**.
- (6) Subclause (5) does not require the **extended reserve manager** to **publish** any information the **publication** of which would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information.
- (7) The **extended reserve procurement schedule** must—
- set out the results of the selection process; and
  - identify the **asset owners** that are required to be **extended reserve providers**; and
  - specify the **extended reserve** to be provided; and
  - include information as to how the amounts payable (if any) to each **extended reserve provider** will be calculated; and
  - identify **asset owners** that have not been selected to be **extended reserve providers**.
- (8) The consultation and approval requirements in Part 3 of Schedule 8.5 apply to the preparation and **publication** of the **extended reserve procurement schedule**.

- (9) The **extended reserve manager** may undertake consultation additional to that required by Part 3 of Schedule 8.5 if the **extended reserve manager** considers it necessary to do so.
- (10) As soon as practicable after receiving a direction from the **Authority** under subclause (2), the **extended reserve manager** must **publish** an indicative time frame within which the **extended reserve manager** expects to complete the selection process.
- (11) The **publication** of an **extended reserve procurement schedule** relating to the provision of **extended reserve** for only part of an **island** must be disregarded for the purposes of determining the date by which the **Authority** must give a direction under subclause (2).
- (12) Despite subclause (6), the **extended reserve manager** must, within 2 **business days** after **publishing** the **extended reserve procurement schedule** under subclause (5), provide a copy of the **extended reserve procurement schedule** to the **clearing manager**.

Clause 8.54J: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54J(2): amended, on 19 December 2014, by clause 11 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 8.54J(12): inserted, on 19 January 2017, by clause 6 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### **8.54K Information required for extended reserve selection process**

- (1) During an **extended reserve** selection process, each **asset owner** identified in the **extended reserve selection methodology**, other than a **generator** that is directly **connected** to the **grid**, must comply with a request from the **extended reserve manager** to provide any information described in the methodology.
- (2) Each **asset owner** required to give information to the **extended reserve manager**, must do so—
  - (a) within the time frame specified in the **extended reserve selection methodology**; and
  - (b) in accordance with the **extended reserve selection methodology**, data specification and **extended reserve manager** calendar **published** by the **extended reserve manager**.
- (3) If the **extended reserve manager** considers that any information provided by an **asset owner** is incomplete or insufficient, the **extended reserve manager** may require that the **asset owner** provide further information.
- (4) An **asset owner** must comply with a requirement under subclause (3) within the time frame specified by the **extended reserve manager**.

Clause 8.54K: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54K(1): amended, on 19 January 2017, by clause 7(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

Clause 8.54K(2): replaced, on 19 January 2017, by clause 7(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### **8.54L Extended reserve manager to issue extended reserve procurement notices**

- (1) The **extended reserve manager** must issue an **extended reserve procurement notice** to each **asset owner** specified in the **extended reserve procurement schedule**.

- (2) Each **extended reserve procurement notice** must—
  - (a) specify the information in the **extended reserve procurement schedule** relating to the **asset owner**; and
  - (b) if an **asset owner** has been selected to be an **extended reserve provider**,—
    - (i) specify the default terms and conditions (as specified in the **extended reserve selection methodology**) that apply to the provision of **extended reserve** by the **asset owner**; and
    - (ii) include information as to how the amounts payable (if any) to each **extended reserve provider** will be calculated.
- (3) The **extended reserve manager** must give each **asset owner** its **extended reserve procurement notice** no later than 5 **business days** after **publishing** the **extended reserve procurement schedule**.

Clause 8.54L: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### **8.54M Asset owners to prepare implementation plans**

- (1) Each **asset owner** identified in an **extended reserve procurement schedule** must prepare an implementation plan specifying how the **asset owner** will implement the obligations allocated to it.
- (2) Each **asset owner** must give its implementation plan to the **system operator** for approval no later than 40 **business days** after receiving its **extended reserve procurement notice**, or by such later date as may be agreed between the **asset owner** and the **system operator**.
- (3) Each implementation plan must specify how the **asset owner** will implement the transition to complying with its obligations (if any) under its most recent **extended reserve procurement notice** from complying with its obligations (if any) under its previous **extended reserve procurement notice**.
- (4) Each implementation plan must specify 1 or more dates on which payments (if any) to the **asset owner** will commence or cease for all or part of the provision of **extended reserve** under the **asset owner's extended reserve procurement notice**.
- (5) Each date specified in an implementation plan under subclause (4) must be the date on which provision of the **extended reserve** to which the payment (if any) relates will commence or cease, as the case may be.
- (6) An **asset owner** may amend an implementation plan after giving it to the **system operator** under subclause (2) with the agreement of the **system operator**.
- (7) If the **system operator** requires that an **asset owner** make changes to an implementation plan given to the **system operator** under subclause (2), the **asset owner** must comply with the requirement.
- (8) The **system operator** must approve an implementation plan given to it by an **asset owner** under subclause (2) if the plan meets the requirements of this clause.

Clause 8.54M: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.



### **8.54N Terms and conditions applying to the provision of extended reserve**

In the case of an **asset owner** that has been selected to be an **extended reserve provider**, the default terms and conditions in the **asset owner's extended reserve procurement notice** apply to the provision of **extended reserve** by the **asset owner** but may be amended by agreement in writing between the **asset owner** and the **system operator**.

Clause 8.54N: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54N: amended, on 19 January 2017, by clause 8 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

### **8.54O System operator to publish and maintain extended reserve schedule**

- (1) The **system operator** must **publish** an **extended reserve schedule**.
- (2) Subclause (1) does not require the **system operator** to **publish** any information the **publication** of which would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information.
- (3) The **extended reserve schedule** must specify the obligations of each **asset owner** identified in the **extended reserve procurement schedule**, based on information from—
  - (a) the latest **extended reserve procurement schedule**; and
  - (b) each approved implementation plan; and
  - (c) any amendment to default terms and conditions applying to an **extended reserve provider** agreed under clause 8.54N; and
  - (d) any other information held by the **system operator** that describes the obligations of an **extended reserve provider** to provide **extended reserve**.
- (4) The **system operator** must amend the **extended reserve schedule** to reflect any change to any information described in subclause (3), so that the schedule is kept up to date.
- (5) Despite subclause (2), the **system operator** must, within 2 **business days** of **publishing** the **extended reserve schedule** under subclause (1), provide a copy of the **extended reserve schedule** to the **extended reserve manager**.

Clause 8.54O: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54O(3)(c): amended, on 19 January 2017, by clause 9(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

Clause 8.54O(5): inserted, on 19 January 2017, by clause 9(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

### **8.54P System operator to issue statements of extended reserve obligations**

- (1) The **system operator** must issue to each **asset owner** identified in the **extended reserve schedule** a **statement of extended reserve obligations** under this clause.
- (2) Each **statement of extended reserve obligations** must specify the obligations of the **asset owner** to which it relates, as specified in the **extended reserve schedule** as at the date on which it is issued.
- (3) The **system operator** must issue a **statement of extended reserve obligations** to an **asset owner** at each of the following times:
  - (a) as soon as practicable after the **asset owner's** implementation plan is approved under clause 8.54M:

- (b) as soon as practicable after it makes an amendment to the schedule under clause 8.54O(4) that relates to the **asset owner's** obligations under this subpart:
- (c) as soon as practicable after the **system operator** becomes aware of any other information to which clause 8.54O(3)(d) applies that relates to the obligations of the **asset owner**.

Clause 8.54P: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### **8.54Q System operator to give written notice of dates**

- (1) The **system operator** must give written notice to the **Authority**, the **extended reserve manager**, and the **clearing manager** of all dates on which **extended reserve providers** will provide, or cease to provide, **extended reserve**, as set out in the **extended reserve schedule**.
- (2) If an amendment to an implementation plan made under clause 8.54M(6) or (7) results in an **extended reserve provider** providing, or ceasing to provide, any **extended reserve** on a date that is different from the relevant date specified in the implementation plan, in each case the **system operator** must—
  - (a) update the **extended reserve schedule** with the new date; and
  - (b) give written notice to the **Authority**, the **extended reserve manager**, and the **clearing manager** of the new date.

Clause 8.54Q: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54Q heading: amended, on 19 December 2014, by clause 12(1) of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 8.54Q heading: amended, on 19 January 2017, by clause 10(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

Clause 8.54Q heading: amended, on 5 October 2017, by clause 105(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.54Q(1) and (2)(b): amended, on 19 December 2014, by clause 12(2) of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 8.54Q(1) and (2)(b): amended, on 19 January 2017, by clause 10(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

Clause 8.54Q(1) and (2)(b): amended, on 5 October 2017, by clause 105(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.54R System operator to report to Authority**

In its monthly report given to the **Authority** under clause 3.14, the **system operator** must include information about any use of **extended reserve**.

Clause 8.54R: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54R heading: amended, on 19 December 2014, by clause 13 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

#### **8.54S New connected asset owners and new grid owners to provide information**

- (1) The purpose of this clause is to require new **connected asset owners** and new **grid owners** to provide information so that their obligations under this subpart can be determined.
- (2) No later than 20 **business days** after a **connected asset owner** commences taking **electricity** from the **grid**, it must give the **Authority** either—

- (a) historical records of the quantity of **electricity** consumed in the **connected asset owner's network** or by the **connected asset owner**; or
  - (b) if the **Authority** advises the **connected asset owner** that it is not satisfied with the records given under paragraph (a), or if there are no such records, a bona fide **business** plan that permits a realistic estimate to be made of the amount of **electricity** to be consumed in the **connected asset owner's network** or by the **connected asset owner**.
- (3) No later than 20 **business days** after a **grid owner** starts to convey **electricity** on the **grid**, it must give the **Authority** either—
- (a) historical records of the quantity of **electricity** conveyed by the **grid owner** on the **grid**; or
  - (b) if the **Authority** advises the **grid owner** that it is not satisfied with the records given under paragraph (a), or if there are no such records, a bona fide **business** plan that permits the **Authority** to make a realistic estimate of the amount of **electricity** to be conveyed by the **grid owner** on the **grid**.

Clause 8.54S: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54S Heading: amended, on 1 February 2016, by clause 12(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.54S(1) & (2): amended, on 1 February 2016, by clause 12(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

#### **8.54T Assignment of extended reserve obligations**

- (1) An **extended reserve provider** that proposes to assign **assets** that it uses to provide **extended reserve** may apply to the **Authority** by notice in writing for approval to assign its obligations to provide **extended reserve** that relate to those **assets**.
- (2) The **Authority** may, on receiving an application under subclause (1),—
  - (a) approve the assignment; or
  - (b) approve the assignment with conditions; or
  - (c) decline to approve the assignment.
- (3) Before giving an **extended reserve provider** approval to assign its obligations under subclause (2), the **Authority** must consult with the **system operator**.
- (4) If the **Authority** gives an **extended reserve provider** approval to assign its obligations under subclause (2), the **Authority** must give written notice to the **system operator**.
- (5) An assignment of an **extended reserve provider's** obligations is not effective except as approved by the **Authority** under subclause (2).

Clause 8.54T: inserted, on 7 August 2014, by clause 9 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.54T(4): amended, on 19 December 2014, by clause 14 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 8.54T(4): amended, on 5 October 2017, by clause 106 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **8.54TA Extended reserve manager may rely on information provided**

For the purposes of this Code, the **extended reserve manager** may rely on the information provided to the **extended reserve manager** by an **asset owner**.

Clause 8.54TA: inserted, on 19 January 2017, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### **8.54TB Extended reserve manager to consider new or revised information**

- (1) If the **extended reserve manager** receives new or revised information from an **asset owner**, it must provide that information to the **Authority** if it considers that the information would change the outcome of the processes specified in clauses 8.54J, 8.54K, or 8.54L.
- (2) If the **extended reserve manager** provides the information to the **Authority** under subclause (1), the **Authority** may direct the **extended reserve manager** to undertake the **extended reserve** selection process under clause 8.54J again.

Clause 8.54TB: inserted, on 19 January 2017, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### **8.54TC Extended reserve manager to produce periodic performance report**

- (1) The **extended reserve manager** must—
  - (a) monitor the performance of **extended reserve**; and
  - (b) produce a periodic performance report that reports on the outcome of its monitoring of the performance of **extended reserve**.
- (2) The time period to be covered in the periodic performance report must be agreed between the **extended reserve manager** and the **Authority**.
- (3) The **extended reserve manager** must provide the periodic performance report to the **Authority** and the **system operator** no later than 30 **business days** after the end of each periodic performance reporting period.
- (4) The **extended reserve manager** must, no later than 5 **business days** after finalising the periodic performance report, **publish** a copy of the report that excludes any information that, if **published**, would be likely unreasonably to prejudice the commercial position of the person who supplied, or who is the subject of, the information.

Clause 8.54TC: inserted, on 19 January 2017, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### *Information required for transitional purposes*

Cross heading: inserted, on 19 January 2017, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

#### **8.54TD Information required for transition**

- (1) The **extended reserve manager** and the **system operator** may request an **asset owner**, other than a **generator** directly **connected** to the **grid**, to provide any information that the **extended reserve manager** or the **system operator** (as the case may be) considers is necessary to transition from the obligations that existed immediately prior to the Electricity Industry Participation Code Amendment (Extended Reserve) 2014 coming into effect, to the obligations specified in that Code amendment.
- (2) An **asset owner** that receives a request under subclause (1) must comply with that request.
- (3) If the **extended reserve manager** or the **system operator** (as the case may be) considers that information provided by an **asset owner** in accordance with subclause (2) is incomplete or insufficient, the **extended reserve manager** or the **system operator** (as the case may be) may require that the **asset owner** provide further information.

- (4) Each **asset owner** required to provide information under this clause must do so within the time frame specified in the request.
- (5) The **extended reserve manager** and the **system operator** may provide the information received from an **asset owner** under subclause (2) or (3) to each other.

Clause 8.54TD: inserted, on 19 January 2017, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

*Transitional provisions—extended reserve*

Cross heading: inserted, on 5 October 2017, by clause 107 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

**8.54TE Transitional provisions for extended reserve**

- (1) If the **system operator** took any action before clause 8.54D came into force that, if that clause had been in force at the time of the action, would have contributed to complying with that clause, the action is deemed to have been taken when that clause was in force.
- (2) The first implementation plan that an **asset owner** gives the **system operator** under clause 8.54M(2) must specify how the **asset owner** will implement the transition from complying with its obligations (if any) under Schedule 8.3, Technical Code B, clause 7 as it applied before clause 8.54M(2) came into force, to complying with its **extended reserve procurement notice**.
- (3) The first **statement of extended reserve obligations** that the **system operator** issues to each **asset owner** under clause 8.54P must specify the date on which it comes into force.
- (4) Despite the revocation of Schedule 8.3, **Technical Code A**, Appendix B, clause 6, and the replacement of Schedule 8.3, **Technical Code B**, clause 7 by the Electricity Industry Participation Code Amendment (Extended Reserve) 2014, each North Island **distributor** that was required to comply with those clauses before 7 August 2014 must continue to comply with those clauses as if the Electricity Industry Participation Code Amendment (Extended Reserve) 2014 had not been made until the earlier of—
  - (a) 7 August 2024; or
  - (b) the date on which the first **statement of extended reserve obligations** issued under clause 8.54P comes into force in respect of the **distributor**.
- (5) Despite the revocation of Schedule 8.3, **Technical Code A**, Appendix B, clause 7, and the replacement of Schedule 8.3, **Technical Code B**, clause 7 by the Electricity Industry Participation Code Amendment (Extended Reserve) 2014, each South Island **grid owner** that was required to comply with those clauses before 7 August 2014 must continue to comply with those clauses as if the Electricity Industry Participation Code Amendment (Extended Reserve) 2014 had not been made until the earlier of—
  - (a) 7 August 2024; or
  - (b) the date on which the first **statement of extended reserve obligations** issued under clause 8.54P comes into force in respect of the **grid owner**.
- (6) However, subclause (5) applies as if Schedule 8.3, **Technical Code B**, clause 7(6)(d)(ii) was amended from 7 May 2015 by replacing "45.5 Hertz" with "46.5 Hertz".
- (7) Clause 8.29(2) does not apply in respect of an application for a dispensation from a South Island **grid owner** until 7 August 2024.

Clause 8.54TE: inserted, on 5 October 2017, by clause 107 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### **8.54TF Transitional provisions for change to frequency limit in South Island**

- (1) No later than 7 February 2015, each South Island **grid owner** must prepare and give the **system operator** a plan for complying with Schedule 8.3, **Technical Code B**, clause 7(6)(d)(ii), as modified by clause 8.54T(6).
- (2) The **system operator** must approve a plan received under subclause (1) subject to any changes that the **system operator** considers necessary.
- (3) A South Island **grid owner** does not breach Schedule 8.3, **Technical Code B**, clause 7(6)(d)(ii) if the **grid owner** complies with a plan approved by the **system operator** under subclause (2).

Clause 8.54TF: inserted, on 5 October 2017, by clause 107 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **Subpart 6—Allocating costs**

Heading: inserted, on 24 March 2015, by clause 10 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### **8.54U Contents of this subpart**

This subpart provides for the allocation of costs relating to **ancillary services** and **extended reserve**.

Clause 8.54U: inserted, on 24 March 2015, by clause 10 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### *Allocating costs for ancillary services and extended reserve*

Cross heading: amended, on 24 March 2015, by clause 11 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

### **8.55 Identifying costs associated with ancillary services and extended reserve**

- (1) The **allocable costs** for each **ancillary service** are—
  - (a) the actual amounts that the **ancillary service agents** are entitled to receive for that **ancillary service** under contracts entered into by the **system operator** in implementing the **procurement plan**; plus
  - (b) the actual **administrative costs** of the **system operator** (as approved by the **Authority**) incurred in administering the **procurement plan** in respect of that **ancillary service**; less
  - (c) any readily identifiable and quantifiable costs to be paid by **asset owners** in respect of that **ancillary service** as a condition of any **dispensations** stipulated in accordance with clause 8.31(1)(a); less
  - (d) any identifiable costs to be paid by any person in respect of that **ancillary service**, as a condition of any agreement reached by the **system operator**, in accordance with clause 8.6.
- (2) The **allocable costs** for **extended reserve** are the actual amounts (if any) that **extended reserve providers** are entitled to receive for providing **extended reserve** under the current **extended reserve procurement schedule**.

Compare: Electricity Governance Rules 2003 rule 11.1 section IV part C

Clause 8.55 heading: amended, on 24 March 2015, by clause 12(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.55(2): inserted, on 24 March 2015, by clause 12(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

#### 8.56 Black start costs allocated to grid owner

The **allocable cost** of **black start** must be paid by the **registered participants** who are **grid owners** to the **system operator** in accordance with the process described in clause 8.68. If there are multiple **grid owners**, those costs must be allocated between them in proportion to their respective ODV valuations.

Compare: Electricity Governance Rules 2003 rule 11.2 section IV part C

#### 8.57 Over frequency reserve costs allocated to HVDC owner

The **allocable cost** of **over frequency reserve** must be paid by the **HVDC owner** to the **system operator** in accordance with the process described in clause 8.68.

Compare: Electricity Governance Rules 2003 rule 11.3 section IV part C

#### 8.58 Frequency keeping costs are allocated to purchasers

The **allocable cost** of **frequency keeping** must be paid by **purchasers** to the **system operator** in accordance with the process in clause 8.68. Those costs must be calculated in accordance with the following formula:

$$\text{Share}_{\text{PUR}_x} = \text{Fc} * \frac{\max(0, \sum_t (\text{Offtake}_{\text{PUR}_{xt}} - E_{\text{PUR}_{xt}}^{\text{FK}}))}{\sum_x \max(0, \sum_t (\text{Offtake}_{\text{PUR}_{xt}} - E_{\text{PUR}_{xt}}^{\text{FK}}))}$$

where

$\text{Share}_{\text{PUR}_x}$  is **purchaser x's share of allocable cost** in relation to **frequency keeping**

$\text{Fc}$  is the **allocable cost of frequency keeping services** in the **billing period**

$\text{Offtake}_{\text{PUR}_{xt}}$  is the total **reconciled quantity in kWh** for **purchaser x** across all **grid exit points** in **trading period t** in the **billing period**

$E_{\text{PUR}_{xt}}^{\text{FK}}$  is the quantity of any **frequency keeping** provided under any alternative **ancillary service arrangement for frequency keeping** authorised by the **system operator** for **purchaser x** in **trading period t**.

Compare: Electricity Governance Rules 2003 rule 11.4 section IV part C

#### 8.59 Availability costs allocated to generators and HVDC owner

The **availability costs** in a **billing period** must be allocated separately to persons in the North Island and South Island in accordance with the following formula:

$$\text{Share}_t = \frac{\text{Ac}_t * m_t}{M_t}$$

where

$Share_t$	is the <b>availability cost</b> allocated to a <b>generator</b> who owns <b>generating unit</b> $x$ or to the <b>HVDC link</b> for <b>trading period</b> $t$ for the North Island or South Island as appropriate
$Ac_t$	is the <b>availability cost</b> for the North Island or South Island as appropriate incurred in respect of <b>trading period</b> $t$
$m_t$	$\left\{ \begin{array}{l} \text{is } \max(0, INJ_{GENxt} - (h * INJ_D) - E^{IR}_{GENxt}) = m_{xt} \text{ for any } \mathbf{generating\ unit} \\ \text{is } \max(0, HVDC_{Riskt} - (h * INJ_D) - E^{IR}_{HVDCt}) = m_{ht} \text{ for the } \mathbf{HVDC\ link} \end{array} \right.$
$M_t$	is $\sum_x m_{xt} + m_{ht}$
$h$	is 0.5 MWh/MW
$INJ_{GENxt}$	is the <b>electricity injected</b> (expressed in MWh) by <b>generating unit</b> $x$ in <b>trading period</b> $t$ into the North Island or South Island as appropriate
$E^{IR}_{GENxt}$	is the quantity of any <b>instantaneous reserve</b> provided under any <b>alternative ancillary service arrangements</b> for <b>instantaneous reserve</b> authorised by the <b>system operator</b> for <b>generating unit</b> $x$ in <b>trading period</b> $t$
$HVDC_{Riskt}$	is the <b>at risk HVDC transfer</b> (expressed in MWh) in <b>trading period</b> $t$ into the North Island or South Island as appropriate
$E^{IR}_{HVDCt}$	is the quantity of any <b>instantaneous reserve</b> provided under any <b>alternative ancillary service arrangement</b> for <b>instantaneous reserve</b> authorised by the <b>system operator</b> for <b>at risk HVDC transfer</b> in <b>trading period</b> $t$
$INJ_D$	is 60 MW.

Compare: Electricity Governance Rules 2003 rule 11.5.1 section IV part C

### 8.60 System operator must investigate causer of under-frequency event

- (1) The **system operator** must promptly advise the **Authority**, every **generator**, **grid owner** and any other **participant** substantially affected by an **under-frequency event**, that an **under-frequency event** has occurred.
- (2) The **system operator** may, by notice in writing to a **participant**, require a **participant** to provide information required by the **system operator** for the purposes of this clause.
- (3) A notice given under subclause (2) must specify the information required by the **system operator** and the date by which the information must be provided (which must not be earlier than 20 **business days** after the notice is given).
- (4) A **participant** who has received a notice under subclause (2) must provide the information required by the **system operator** by the date specified by the **system operator** in the notice.
- (5) Within 40 **business days** of receiving the information, or such longer period as may be agreed by the **Authority**, the **system operator** must provide a report to the **Authority** that includes the following:



- (a) whether, in the **system operator's** view, the **under-frequency event** was caused by a **generator** or **grid owner**, and if so, the identity of the **causer**;
- (b) the reasons for the **system operator's** view;
- (c) all of the information the **system operator** considered in reaching its view.

Compare: Electricity Governance Rules 2003 rule 11.5.1A section IV part C

Clause 8.60 Heading: amended, on 19 May 2016, by clause 25(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.60(1): amended, on 19 May 2016, by clause 25(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.60(1): amended, on 1 November 2018, by clause 15 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018.

Clause 8.60(2): amended, on 19 May 2016, by clause 25(3)(a), (b) and (c) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.60(3): amended, on 19 May 2016, by clause 25(4)(a) and (b) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.60(5): inserted, on 19 May 2016, by clause 25(5) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.61 Authority to determine causer of under-frequency event

- (1) The **Authority** must determine whether an **under-frequency event** has been caused by a **generator** or **grid owner** and, if so, the identity of the **causer**.
- (2) The **Authority** must **publish** a draft determination that states whether the **under-frequency event** was caused by a **generator** or **grid owner** and, if so, the identity of the **causer**.
- (3) The **Authority** must give reasons for its findings in the draft determination.
- (4) The **Authority** must consult every **generator**, **grid owner** and other **participant** substantially affected by an **under-frequency event** in relation to the draft determination.
- (5) When the **Authority publishes** the draft determination under subclause (2), the **Authority** must give notice to **generators**, **grid owners**, and other **participants** substantially affected by the **under-frequency event** of the closing date for submissions on the draft determination.
- (6) The date referred to in subclause (5) must be no earlier than 10 **business days** after the date of **publication** of the draft determination.
- (7) The **Authority** must **publish** submissions received under subclause (4) unless there is good reason for withholding information in a submission.
- (8) For the purposes of subclause (7), good reason for withholding information exists if there is good reason for withholding the information under the Official Information Act 1982.
- (9) Following the consultation under subclause (4), the **Authority** must **publish** a final determination.

Compare: Electricity Governance Rules 2003 rule 11.5.1B section IV part C

Clause 8.61 Heading: amended, on 19 May 2016, by clause 26(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.61: amended, on 19 May 2016, by clause 26(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.61(1): amended, on 19 May 2016, by clause 26(3) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.61(5): amended, on 19 May 2016, by clause 26(4)(a) and (b) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.62 Disputes regarding Authority determinations

- (1) A **participant** who is substantially affected by a determination may dispute the determination by referring the matter to the **Rulings Panel**.
- (2) A dispute is commenced by giving written notice to the **Rulings Panel** specifying the grounds of the dispute.
- (3) A notice under subclause (2) must be given within 10 **business days** after the determination is **published**.
- (4) The **Authority's** determination is suspended if a dispute is referred to the **Rulings Panel** within that time.
- (5) If a dispute is not referred to the **Rulings Panel** within that time, the determination is final.
- (6) If a dispute is referred to the **Rulings Panel**, the **Authority** must provide the **Rulings Panel** with all information considered by the **Authority** in making the determination.

Compare: Electricity Governance Rules 2003 rule 11.5.1C section IV part C

Clause 8.62 Heading: amended, on 19 May 2016, by clause 27(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.62(1): amended, on 19 May 2016, by clause 27(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.62(3): amended, on 5 October 2017, by clause 108 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 8.62 (4): amended, on 19 May 2016, by clause 27(3) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.62(6): amended, on 19 May 2016, by clause 27(4) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.63 Decision of the Rulings Panel

- (1) The **Rulings Panel** may—
  - (a) confirm the determination; or
  - (b) amend the determination; or
  - (c) substitute its own determination; or
  - (d) refer the determination back to the **Authority** with directions as to the particular matters that require reconsideration or amendment.
- (2) The **Authority's** determination has effect as confirmed, amended, or substituted by the **Rulings Panel** from the date of the **Rulings Panel's** decision.
- (3) The **Rulings Panel** must give a copy of its decision to the **Authority** as soon as reasonably practicable.
- (4) The **Authority** must **publish** the **Rulings Panel's** decision as soon as reasonably practicable.
- (5) If the **Rulings Panel** refers the matter back to the **Authority**, the **Authority** must have regard to the **Rulings Panel's** directions under subclause (1)(d).

Compare: Electricity Governance Rules 2003 rule 11.5.1D section IV part C

Clause 8.63: amended, on 19 May 2016, by clause 28(1) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

Clause 8.63(3): amended, on 19 May 2016, by clause 28(2) of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

### 8.64 Event costs allocated to event causers

The **event charge** payable by the **causer** of an **under-frequency event** (referred to as “Event e” below) must be calculated in accordance with the following formula:

$$EC = ECR * (\sum_y (INT_{ye} \text{ for all } y) - INJ_D)$$

where

EC is the **event charge** payable by the **causer**

ECR is \$1,250 per **MW**

INJ<sub>D</sub> is 60 **MW**

INT<sub>ye</sub> is the electric power (expressed in **MW**) lost at point y by reason of Event e (being the net reduction in the **injection of electricity** (expressed in **MW**) experienced at point y by reason of Event e) excluding any loss at point y by reason of secondary Event e

y is a **point of connection** or the **HVDC injection point** at which the **injection of electricity** was interrupted or reduced by reason of Event e.

Compare: Electricity Governance Rules 2003 rule 11.5.2 section IV part C  
Clause 8.64: amended, on 21 September 2012, by clause 10 of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

### 8.65 Rebates paid for under-frequency events

An **event charge** that has been paid for an **under-frequency event** (referred to as “Event e”) under clause 8.64 must be rebated in accordance with the following formula to persons who are allocated **availability costs** in accordance with clause 8.59:

$$\text{Rebate}_{xe} = EC_e * Z_{xe}/Z_{\text{tote}}$$

where

Rebate<sub>xe</sub> is the rebate of the **event charge** paid for Event e to person “x”, who has been allocated **availability costs** in accordance with clause 8.59

EC<sub>e</sub> is the **event charge** paid for Event e

Z<sub>xe</sub> is the sum of all **availability costs** paid by x during the **billing period** in which Event e occurred and the 2 preceding **billing periods**

Z<sub>tote</sub> is the sum of all **availability costs** paid for all **trading periods** during the **billing period** in which Event e occurred and the two preceding **billing periods**.

Compare: Electricity Governance Rules 2003 rule 11.5.3 section IV part C

### 8.66 Payments and rebates

All costs calculated in accordance with clauses 8.59 and 8.64 are payable by the relevant **participants** to the **system operator**, and all **event charge** rebates calculated in accordance with clause 8.65 are payable by the **system operator** to the relevant **participants**, in accordance with clause 8.69.

Compare: Electricity Governance Rules 2003 rule 11.5.4 section IV part C

### 8.67 Voltage support costs allocated in 3 parts – nominated peak, monthly peak and residual charges

- (1) Each **connected asset owner** must pay the **allocable cost** of **voltage support** in each **zone** to the **system operator** in accordance with clause 8.68. The costs must be calculated in accordance with this clause.
- (2) Each **connected asset owner** must pay a nominated peak kvar charge calculated in accordance with the following formula:

$$\text{NomCharge}_{xz} = \text{PeakRate}_z * \sum_j Q_{xjz}$$

where

$\text{NomCharge}_{xz}$  is the total nominated peak charges for **connected asset owner x** in **zone z**

$\text{Peak Rate}_z$  is the fixed \$/kvar set annually in advance by **system operator** for **zone z**

$Q_{xjz}$  is  $\text{Nom Peak}_{\text{LINES}_{xjz}}$ , which is the peak demand in kvar (in **zone z**) nominated to the **system operator** in advance of, and having effect from, 1 March each year by **connected asset owner x** at its **connected asset owner kvar reference node j**

$\sum_j$  is the sum across all **connected asset owner kvar reference nodes j** of **connected asset owner x** in **zone z**

- (3) Each **connected asset owner** must pay a monthly peak penalty charge calculated in accordance with the following formula:

$$\text{PeakPenaltyCharge}_{\text{LINE}_{xz}} = \text{PenaltyRate}_z * \sum_j \text{PenaltyQuantity}_{\text{LINE}_{xjz}}$$

where

$\text{PeakPenaltyCharge}_{\text{LINE}_{xz}}$  is the total peak penalty charges for **connected asset owner x** across all **connected asset owner kvar reference nodes j** for **connected asset owner x** in **zone z**

$\text{PenaltyRate}_z$  is the fixed \$/kvar penalty charge for “kvar above nominated kvar” set annually in advance by the **system operator** in **zone z**

$\sum_j$  is the sum across all **connected asset owner kvar reference nodes j** of **connected asset owner x** in **zone z**

$\text{PenaltyQuantity}_{\text{LINE}_{xjz}}$  is the “kvar above nominated kvar” quantity for **connected asset owner x** at its **connected asset owner kvar reference node j** in **zone z**

- (4) For the purpose of calculating the “kvar above nominated kvar” quantity, the kvar taken by the **connected asset owner**—
- (a) includes only kvar demands on weekdays (Monday to Friday but excluding **national holidays**) between the hours of 0700 to 2100 inclusive; and
  - (b) includes no more than 2 kvar peaks in any 1 day; and
  - (c) is the average of the 6 largest kvar peaks for the **connected asset owner** in each month measured at the **connected asset owner kvar reference node j** within the **zone z**,—

and “kvar above nominated kvar” is the difference between the kvar taken by the **connected asset owners** as determined in accordance with paragraphs (a) to (c) and the nominated kvar specified by the **connected asset owner**.

- (5) Each **connected asset owner** must pay a residual charge or receive a residual payment calculated in accordance with the following formulae:

$$\text{Residual}_{\text{ALL}z} = \text{Vcost}_z - \text{Nom Charge}_{\text{ALL}z} - \text{PeakPenaltyCharge}_{\text{ALL}z}$$

$$\text{Residual}_{\text{LINEall}z} = \text{Residual}_{\text{ALL}z} * (\sum_{xj} \text{NomPeak}_{\text{LINE}xjz} / \sum_{xj} Q_{xjz})$$

$$\text{Residual}_{\text{LINE}xz} = \text{Residual}_{\text{LINEall}z} * (\text{BillingPeriodOfftake}_{\text{LINE}xz} / \text{BillingPeriodOfftake}_{\text{ALL}z})$$

where

$\text{Vcost}_z$  is the total **allocable costs** for **voltage support** in **zone z** in the **billing period**

$\text{Nom Charge}_{\text{ALL}z}$  is the sum of all  $\text{Nom Charge}_{xz}$  for **zone z**

$\text{PeakPenaltyCharge}_{\text{ALL}z}$  is the sum of all **connected asset owners’**  $\text{PeakPenaltyCharge}_{\text{LINE}xz}$  for **zone z**

$\text{Residual}_{\text{ALL}z}$  is the total residual to be recovered from or paid to **connected asset owners** in **zone z**

$\text{Residual}_{\text{LINEall}z}$  is the portion of  $\text{Residual}_{\text{ALL}z}$  to be recovered from or paid to **connected asset owners** in **zone z**

$\text{Residual}_{\text{LINE}xz}$  is the portion of  $\text{Residual}_{\text{LINEall}z}$  to be recovered from or paid to **connected asset owner x** in **zone z**

$\text{BillingPeriodOfftake}_{\text{LINE}xz}$  is the sum of **metering information** for **connected asset owner x** across all **connected asset owner kvar reference nodes** in **zone z** for the **billing period** for all **trading periods**

$\text{BillingPeriodOfftake}_{\text{ALL}z}$  is the sum of **metering information** for all **connected asset owners** across all **connected asset owner kvar reference**

	<b>nodes in zone z for the billing period for all trading periods</b>
$\Sigma_{xj}$	is the sum across all <b>connected asset owner kvar reference nodes j</b> for all <b>connected asset owners x</b> in <b>zone z</b>
$\Sigma_j$	is the sum across all <b>connected asset owner kvar reference nodes j</b> of <b>connected asset owner x</b> in <b>zone z</b>
$Q_{xjz}$	is <b>Nom PeakLINES<sub>xjz</sub></b> , which is the peak demand in kvar (in <b>zone z</b> ) nominated to the <b>system operator</b> in advance of, and having effect from, 1 March each year by <b>connected asset owner x</b> at its <b>connected asset owner kvar reference node j</b>

- (6) For the purposes of this clause, a **connected asset owner** does not include a **generator** who is supplied **electricity** for consumption at a **point of connection** with the **grid**.  
 Compare: Electricity Governance Rules 2003 rule 11.6 section IV part C  
 Clause 8.67: amended, on 1 February 2016, by clause 13 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.  
 Clause 8.67(5): amended, on 15 May 2014, by clause 10 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

#### 8.67A Extended reserve costs allocated to connected asset owners

If there are **allocable costs** for **extended reserve** in a **billing period**, each **connected asset owner**, other than a **generator** that is directly **connected** to the **grid**, must pay a charge for **extended reserve** for the **billing period** in accordance with the following formula:

$$\text{Extended reserve charge}_D = \left( \text{TERAC}_{NI} \times \frac{L_{NI,D}}{L_{NI,TOT}} \right) + \left( \text{TERAC}_{SI} \times \frac{L_{SI,D}}{L_{SI,TOT}} \right)$$

where

$\text{Extended reserve charge}_D$	is the <b>extended reserve</b> charge owing by the <b>connected asset owner</b> for the <b>billing period</b>
$\text{TERAC}_{NI}$	is the sum of all payments for <b>extended reserve</b> provided in the North Island for the <b>billing period</b>
$L_{NI,D}$	is the <b>connected asset owner's</b> total <b>offtake</b> (in <b>MWh</b> ) at <b>grid exit points</b> in the North Island in the <b>billing period</b>
$L_{NI,TOT}$	is the total <b>offtake</b> (in <b>MWh</b> ) by all <b>connected asset owners</b> at <b>grid exit points</b> in the North Island in the <b>billing period</b>
$\text{TERAC}_{SI}$	is the sum of all payments for <b>extended reserve</b> provided in the South Island for the <b>billing period</b>

$L_{SI, D}$  is the **connected asset owner's total offtake** (in **MWh**) at **grid exit points** in the South Island in the **billing period**

$L_{SI, TOT}$  is the total **offtake** (in **MWh**) by all **connected asset owners** at **grid exit points** in the South Island in the **billing period**.

Clause 8.67A: inserted, on 24 March 2015, by clause 13 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.67A Heading: amended, on 1 February 2016, by clause 14(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.67A: amended, on 1 February 2016, by clause 14(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.67A: amended, on 19 January 2017, by clause 12 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

### 8.68 Clearing manager to determine amounts owing

- (1) The **clearing manager** must determine the amount owing to the **system operator** by each **grid owner, purchaser, generator** and **connected asset owner** for **ancillary services** under clauses 8.55 to 8.67. On behalf of the **system operator**, the **clearing manager** must collect those amounts, and any amounts advised by the **system operator** as owing to it under clauses 8.6 and 8.31(1)(a), by including the relevant amounts in the amounts advised by the **clearing manager** as owing under Part 14.
- (2) To enable the **clearing manager** to determine those amounts, the **system operator** must provide to the **clearing manager** the total **allocable cost** for each **ancillary service** and any additional information required to carry out the calculations under clauses 8.55 to 8.67 that is not otherwise provided by the **reconciliation manager** or the **pricing manager** under Part 13.
- (3) The **clearing manager** must determine the amount owing by each **connected asset owner**, other than a **generator** that is directly **connected** to the **grid**, for **extended reserve** in accordance with clause 8.67A.
- (4) The **clearing manager** must determine the amount owing to each **extended reserve provider** for the provision of **extended reserve** in accordance with—
  - (a) the **extended reserve schedule**; and
  - (b) any relevant notice received from the **system operator** under clause 8.54Q(2).
- (5) The **clearing manager** must collect the amounts determined under subclause (3) and pay the amounts determined under subclause (4) by including the relevant amounts in the invoices issued by the **clearing manager** under Part 14.
- (6) All amounts owing under this clause are subject to the priority order of payments set out in clause 14.56.

Compare: Electricity Governance Rules 2003 rule 11.7 section IV part C

Clause 8.68 heading: amended, on 24 March 2015, by clause 7(1) of the Electricity Industry Participation (Settlement and Prudential Security) Code Amendment 2013.

Clause 8.68(1): amended, on 24 March 2015, by clause 7(2) of the Electricity Industry Participation (Settlement and Prudential Security) Code Amendment 2013.

Clause 8.68(1): amended, on 24 March 2015, by clause 14(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.68(1): amended, on 1 February 2016, by clause 15 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.68(3), (4), (5) and (6): inserted, on 24 March 2015, by clause 14(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.68(3): amended, on 1 February 2016, by clause 15 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.68(3): amended, on 19 January 2017, by clause 13 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.

### **8.69 Clearing manager to determine wash up amounts payable and receivable**

- (1) The **clearing manager** must determine the following amounts owing as a result of **washups** under subpart 6 of Part 14:
  - (a) the amount owing to the **system operator** by each **grid owner, purchaser, generator** and **connected asset owner** for **ancillary services** under clauses 8.55 to 8.67:
  - (b) the amount owing to each **grid owner, purchaser, generator** and **connected asset owner** by the **system operator** for **ancillary services** under clauses 8.55 to 8.67:
  - (c) the amount owing by each **distributor** for **extended reserve** under clause 8.67A:
  - (d) the amount owing to each **extended reserve provider** for **extended reserve** under clause 8.68.
- (2) On behalf of the **system operator** the **clearing manager** must collect or pay the amounts owing for **ancillary services**, and any amounts advised by the **system operator** as payable to it under clauses 8.6 and 8.31(1)(a) by including the relevant amounts advised by the **clearing manager** as owing under Part 14.
- (3) To enable the **clearing manager** to determine the amounts payable for **ancillary services**, the **system operator** must provide to the **clearing manager** the **allocable cost** for each **ancillary service** and any additional information required to carry out the recalculations under clauses 8.55 to 8.67 that is not otherwise provided by the **reconciliation manager** or the **pricing manager** under Part 13.
- (4) All amounts owing under this clause are subject to the priority order of payments set out in clause 14.56.

Compare: Electricity Governance Rules 2003 rule 11.8 section IV part C

Clause 8.69 heading: amended, on 24 March 2015, by clause 8(1) of the Electricity Industry Participation (Settlement and Prudential Security) Code Amendment 2013.

Clause 8.69: substituted, on 24 March 2015, by clause 15 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8.69(1): amended, on 24 March 2015, by clause 8(2) of the Electricity Industry Participation (Settlement and Prudential Security) Code Amendment 2013.

Clause 8.69(1)(a) & (b): amended, on 1 February 2016, by clause 16(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8.69(4): amended, on 1 February 2016, by clause 16(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

### **8.70 System operator pays ancillary service agents**

- (1) The **system operator** must pay each **ancillary service agent** the amounts that each **ancillary service agent** is entitled to receive for **ancillary services** under contracts entered into by the **system operator** in implementing the **procurement plan**.
- (2) The **system operator** must use the **clearing manager** as its agent to pay **participants**.

Compare: Electricity Governance Rules 2003 rule 11.9 section IV part C



## Schedule 8.1

cls 8.29 and 8.33

### Approval of equivalence arrangement or grant of dispensation

#### 1 Contents of this Schedule

This Schedule sets out the process for an **asset owner** who wishes to apply for—

- (a) approval of an **equivalence arrangement**; or
- (b) the grant of a **dispensation**.

Compare: Electricity Governance Rules 2003 clause 1 schedule C1 part C

#### 2 Application and supporting information

Each application for an **equivalence arrangement** or a **dispensation** must—

- (a) be in writing; and
- (b) specify the **AOPO** or **technical code** from which approval for an **equivalence arrangement** or the grant of **dispensation** is sought; and
- (c) provide supporting information for the application, including sufficient information about the actual capability of the **asset** or configuration of **assets**; and
- (d) describe any remedial action planned to return the **asset** or configuration of **assets** to a compliant state; and
- (e) specify the required term of the **equivalence arrangement** or **dispensation**; and
- (f) indicate any information for which confidentiality is sought on the grounds that it would, if disclosed, unreasonably prejudice the commercial position of the person who supplied the information (or of the person who is the subject of that information), or would disclose a trade secret, or on the ground that it is necessary to protect information which is itself subject to an obligation of confidence, and the duration of the requirement for confidentiality.

Compare: Electricity Governance Rules 2003 clause 2 schedule C1 part C

#### 3 System operator obligations on receipt of application

No later than **5 business days** after receiving the application made in accordance with clause 2, the **system operator** must—

- (a) record the name of the **asset owner** making the application, the date and the subject matter of the application in the **system operator register**; and
- (b) give written notice to the **Authority** of the application; and
- (c) provide the **asset owner** with an estimate of the likely time that it will take to consider the application and the likely costs associated with processing the application.

Compare: Electricity Governance Rules 2003 clause 3 schedule C1 part C

Clause 3(b): amended, on 5 October 2017, by clause 109 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### 4 Rights and obligations while processing applications

- (1) The **system operator** must use reasonable endeavours to process an application for approval of an **equivalence arrangement** or grant of a **dispensation** within the timeframe and costs estimated in accordance with clause 3(c).

- (2) If the **system operator** cannot process the application within the timeframe or costs originally estimated, it must give notice of this fact and its amended estimates of timeframe or costs to the **asset owner**, and clause 5 applies in respect of those costs.
- (3) The **system operator** may require the provision of additional information at any stage during the application process and, provided the **system operator's** requirements are reasonable, that information must be provided by the **asset owner** if the application is to be processed.
- (4) The **asset owner** may withdraw an application at any time, provided that it meets all costs incurred by the **system operator** as at the date of the withdrawal of the application. If any costs have been paid in advance, those monies outstanding to the credit of the **asset owner** must immediately be returned to the **asset owner**.
- (5) An applicant may amend an application being considered by the **system operator** at any time. All amendments must be in writing and submitted to the **system operator** and take effect from the date of receipt.

Compare: Electricity Governance Rules 2003 clause 4 schedule C1 part C

## 5 Obligation of asset owner to pay costs

- (1) The **system operator** and the **asset owner** must agree on the costs involved in processing an application for approval of an **equivalence arrangement** or grant of a **dispensation** and the method for payment to the **system operator** by the **asset owner** of those costs—
  - (a) before the **system operator** proceeds with the application; and
  - (b) at any time during the processing of the application when either—
    - (i) the **system operator** gives written notice to the **asset owner** that it considers the estimate of the likely timeframe involved in processing the application will exceed the estimate given under clause 3(c) or any revised estimate given under clause 4; or
    - (ii) an **asset owner** varies its application and the **system operator**, acting reasonably, considers this variation will change the cost of processing the application.
- (2) The **system operator** is entitled not to proceed until agreement on costs is reached at any of these stages.

Compare: Electricity Governance Rules 2003 clause 5 schedule C1 part C

Clause 5(1)(b)(i): amended, on 5 October 2017, by clause 110 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 6 Special provisions relating to the grant of dispensations

- (1) Before granting a **dispensation**, the **system operator** must issue a draft decision on the application. The draft decision must be published on the **system operator register** and must include—
  - (a) an assessment by the **system operator** of the technical issues; and
  - (b) advice from the **system operator** about any changes required to **ancillary services** procurement as a result of the proposed **dispensation**.
- (2) If changes are required to the **procurement plan**, the draft decision must be conditional on the **procurement plan** being amended appropriately in accordance with clause 8.44.

- (3) A **participant** may make a submission to the **system operator** on the application that resulted in the publication of the draft decision no later than 10 **business days** after the draft decision is recorded on the **system operator register**.
- (4) The **system operator** must—
- (a) consider all submissions; and
  - (b) give written notice of its decision on an application to the **participant** who made the application.

Compare: Electricity Governance Rules 2003 clause 6 schedule C1 part C  
Clause 6(4): replaced, on 5 October 2017, by clause 111 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 7 Decision of the system operator

The **system operator** must advise all applicants for approval of an **equivalence arrangement** or grant of a **dispensation** of—

- (a) its decision as soon as it is made in writing; and
- (b) the reason for its decision.

Compare: Electricity Governance Rules 2003 clause 7 schedule C1 part C

## 8 Decisions must be recorded

- (1) An approval of an **equivalence arrangement** or grant of a **dispensation** by the **system operator** must be recorded in the **system operator register**.
- (2) The approval must state the name of the **asset owner**, the date, duration and nature of the **equivalence arrangement** or **dispensation**, including any conditions.
- (3) On request, and at the cost of the person making the request, the **system operator** must supply all background information in relation to its decision to that person, other than information designated as commercially sensitive by the relevant **asset owner**.

Compare: Electricity Governance Rules 2003 clause 8 schedule C1 part C

## Schedule 8.2

### Approval of alternative ancillary service arrangement

#### 1 Process for approval of alternative ancillary service arrangement

- (1) An application for an **alternative ancillary service arrangement** must—
  - (a) be in writing; and
  - (b) specify the **ancillary service** for which approval for an **alternative ancillary service arrangement** is sought; and
  - (c) provide supporting information for the application, including sufficient information about the actual capability of the **asset** or configuration of **assets**; and
  - (d) describe any remedial action planned to return the **asset** or configuration of **assets** to a compliant state; and
  - (e) specify the required term of the **alternative ancillary service arrangement**; and
  - (f) indicate any information for which confidentiality is sought on the grounds that it would, if disclosed, unreasonably prejudice the commercial position of the person who supplied the information (or the person who is the subject of that information), or would disclose a trade secret, or on the ground that it is necessary to protect information which is itself subject to an obligation of confidence.
- (2) No later than 5 **business days** after receipt of the application under subclause (1), the **system operator** must—
  - (a) record the name of the **asset owner** making the application, the date and the subject matter of the application in the **system operator register**; and
  - (b) give written notice to the **Authority** of the application; and
  - (c) provide the **asset owner** with an estimate of the likely time it will take to consider the application and the likely costs associated with processing the application.
- (3) The **system operator** and the **asset owner** must agree on the costs involved in processing an application for authorisation of an **alternative ancillary service arrangement** and the method for payment to the **system operator** by the **asset owner** of those costs—
  - (a) before the **system operator** proceeds with the application; and
  - (b) at any time during the processing of the application, the **system operator** is entitled not to proceed until agreement is reached if either—
    - (i) the **system operator** gives written notice to the **asset owner** that it considers the estimate of the likely timeframe and costs involved in processing the application will exceed the estimate given under subclause (2)(c); or
    - (ii) an **asset owner** varies its application and the **system operator**, acting reasonably, considers this variation will change the costs in processing the application.

Compare: Electricity Governance Rules 2003 clauses 1.1 to 1.3 schedule C2 part C  
Clause 1(2)(b) and (3)(b)(i): amended, on 5 October 2017, by clause 112(1) and (2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 2 Obligations in processing applications

- (1) The **system operator** must use reasonable endeavours to process an application for authorisation of an **alternative ancillary service arrangement** within the timeframe and costs estimated in accordance with clause 1(2)(c).
- (2) If the **system operator** cannot process an application within the timeframe and costs originally estimated, it must give notice of this fact and its amended estimates of timeframe and costs to the **asset owner** and the provisions of clause 1(3) must apply in respect of those costs.
- (3) The **system operator** may require the provision of additional information at any stage during the application process and, provided the **system operator's** requirements are reasonable, that information must be provided by the **asset owner** if the application is to be processed.
- (4) The **asset owner** may withdraw an application at any time provided that it meets all costs incurred by the **system operator** as at the date of withdrawal of the application. If those costs have been paid in advance, those monies outstanding to the credit of the **asset owner** must immediately be returned to the **asset owner**.
- (5) An applicant may amend an application being considered by the **system operator** at any time. All amendments must be in writing and submitted to the **system operator** and must take effect from the date of receipt.

Compare: Electricity Governance Rules 2003 clause 1.4 schedule C2 part C

## 3 Decision of the system operator

The **system operator** must advise all applicants for authorisation of an **alternative ancillary service arrangement** of its decision as soon as it is made in writing, and advise such applicants of the reason for that decision.

Compare: Electricity Governance Rules 2003 clause 1.5 schedule C2 part C

## 4 Decisions must be recorded

An authorisation of an **alternative ancillary service arrangement** by the **system operator** must be recorded in the **system operator register**. Except for information that the **system operator** agreed was commercially sensitive, the authorisation must state the name of the **asset owner**, the date, duration and nature of the **alternative ancillary service arrangement**, including any conditions. On request, and at the cost of the person making the request, the **system operator** must supply all background information in relation to its decision to that person, other than information designated as commercially sensitive by the relevant **asset owner**.

Compare: Electricity Governance Rules 2003 clause 1.6 schedule C2 part C

## Schedule 8.3 Technical codes

cl 1.1

### *Technical Code A – Assets*

#### 1 Purpose

The purpose of this **technical code** is to define obligations for **asset owners** and technical standards for **assets** that are supportive of, or more detailed than, those set out in subpart 2 of Part 8, in order to enable the **system operator** to plan to comply, and to comply, with the **principal performance obligations**.

Compare: Electricity Governance Rules 2003 clause 1 technical code A schedule C3 part C

#### 2 General requirements

- (1) Each **asset owner** must ensure that—
  - (a) its **assets** at **grid exit points** and at **grid injection points**, and, in the case of connected **asset owners**, the **assets** of any **embedded generator** connected to it, are identified and referred to by a **system number**; and
  - (b) its **assets**, both in the manner in which they are designed and operated, are capable of being operated, and operate, within the limits stated in the **asset capability statement** provided by the **asset owner** for that **asset**; and
  - (c) it meets any other reasonable requirements of the **system operator**, identified during planning studies, which are required for the **system operator** to plan to comply, or to comply, with its **principal performance obligations**.
- (2) Each **asset owner** must provide the **system operator** with an **asset capability statement**, and any other information reasonably required by the **system operator**, to allow the **system operator** to assess compliance of its **asset** or any configuration of **assets** with the requirements of the **asset owner performance obligations** and **technical codes** at each of the following times:
  - (a) before the completion of planning for the construction of that **asset** or configuration of **assets**;
  - (b) at, or before, the completion of construction but before the **commissioning** of that **asset** or configuration of **assets**, except that the **asset owner** must put in place a **commissioning** plan in accordance with subclauses (6) to (8) to minimise the impact of **commissioning** tests on the **system operator's** ability to comply with its **principal performance obligations**, and adhere to this plan during **commissioning**, unless otherwise agreed to by the **system operator**.
- (3) On, or before, completion of **commissioning** of an **asset** or configuration of **assets**, the **asset owner** must obtain a final assessment in writing from the **system operator** that the **asset** or configuration of **assets** meets the requirements of the **asset owner performance obligations** and **technical codes**. This final assessment must be based on the information supplied by the **asset owner** and, if necessary, the result of **system tests** at **commissioning**.
- (4) The **system operator** must give the assessment referred to in subclause (2)(b) within a

- reasonable time frame of the request and supply the **asset owner** with all information that supports its assessment. Any permission granted by the **system operator** to an **asset owner** to conduct **commissioning** of any **asset** or configuration of **assets** must permit connection of the **asset** (or configuration of **assets**) solely for the purposes of **commissioning**.
- (5) Each **asset owner** must provide the **system operator** with an **asset capability statement** in the form from time to time **published** by the **system operator** for each **asset** that is proposed to be connected, or is connected to, or forms part of the **grid**. The **asset capability statement** must—
- (a) include all information reasonably requested by the **system operator** so as to allow the **system operator** to determine the limitations in the operation of the **asset** that the **system operator** needs to know for the safe and efficient operation of the **grid**; and
  - (b) include any modelling data for the planning studies, as reasonably requested by the **system operator**; and
  - (c) be updated and reissued to the **system operator** as information and design development progresses through the study, design, manufacture, testing and **commissioning** phases; and
  - (d) be complete and up to date before the **commissioning** of the **asset**; and
  - (e) be complete and up to date at all times while the **asset** is connected to, or forms part of, the **grid**.
- (6) Each **asset owner** must provide a **commissioning** plan or test plan in accordance with subclauses (7) or (8) (as the case may be) in the following situations:
- (a) when changes are made to **assets** that alter any of the following at the **grid interface**:
    - (i) the **single-line diagram**;
    - (ii) a protection system, other than a change to a protection system setting;
    - (iii) a **control system**, including a change to a **control system** setting;
    - (iv) any rating of **assets**;
  - (b) when **assets** are to be connected to, or are to form part of, the **grid**;
  - (c) if it is necessary for an **asset owner** to perform a **system test** or other test to ascertain or confirm **asset** capabilities, and if the **commissioning** or testing or connection of those **assets** may affect the **system operator's** ability to plan to comply, or to comply with, its **principal performance obligations**. If an **asset owner** is unsure whether the **commissioning** or connection of an **asset** may impact on the **system operator's** ability to plan to comply, and to comply, with the **principal performance obligations** it must contact the **system operator** for advice.
- (7) The **commissioning** plan prepared by an **asset owner** and agreed by the **system operator** must—
- (a) include a timetable containing the sequence of events necessary to connect the **assets** to the **grid** and conduct any proposed **system test**; and
  - (b) contain the protection and control settings to be applied before the **assets** are made live (where live has the meaning given to it in the Electricity (Safety)

- Regulations 2010); and
- (c) contain the procedures for **commissioning** the plant with minimum risk to personnel and plant and to the ability of the **system operator** to plan to comply and to comply with its **principal performance obligations**.
- (8) If a test plan is required under subclause (6), it must be prepared by the **asset owner** in consultation with the **system operator**. The test plan must contain sufficient information to enable the **system operator** to plan to comply, and to comply, with the **principal performance obligations**.
- (9) Once assessed by the **system operator** acting reasonably, the **asset owner** must follow the **commissioning** plan or test plan at all times, unless otherwise agreed with the **system operator** (such agreement must not be unreasonably withheld if compliance with the **commissioning** plan or testing plan is not practicable and non-compliance does not impact on the **system operator's** ability to comply with its **principal performance obligations** or on other **asset owners**).

Compare: Electricity Governance Rules 2003 clause 2 technical code A schedule C3 part C

Clause 2(1)(a): amended, on 1 February 2016, by clause 17 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 2(1) and (4) – (7): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 2(1) - (7) and (9): amended, on 5 October 2017, by clause 113 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### 3 Requirements for asset information

- (1) In accordance with clause 8.25(4), the following information is required by the **system operator** to assist it to plan to comply, and to comply, with its **principal performance obligations**:
- (a) sufficient information must be exchanged between the **system operator** and the **asset owner** to ensure that both fully understand the implications of any changes to the **asset capability statement** or of any proposed connection of the relevant **assets** to the **grid** or to the **local network**. This information must be exchanged in accordance with a timetable agreed to by the **system operator** and the **asset owner**;
  - (b) if reasonably requested by the **system operator**, the **asset owner** must provide sufficient information to the **system operator** to demonstrate the compliance of the **asset owner's assets** with the **asset owner performance obligations** and the **technical codes**.
- (2) **Information** about an **asset, supply** or **demand** of other **asset owners** must only be disclosed by the **system operator**—
- (a) as expressly provided for in this Code; or
  - (b) as reasonably required in a **grid emergency** or to ensure the security of the **grid**;  
or
  - (c) as required by **law**; or
  - (d) otherwise as may be agreed with the relevant **asset owners**.
- (3) Each **asset owner** must provide the **system operator** with—
- (a) all information reasonably requested by the **system operator** so as to ensure compliance with clause 8.25(4) and to enable the **system operator** to assess the



**grid interface**; and

- (b) details of protection systems, including settings, to ensure that the requirements of clause 8.25(4) are met.
- (4) Each **asset owner** must ensure that all supporting information for the operational control of **assets** is kept up to date.

Compare: Electricity Governance Rules 2003 clause 3 technical code A schedule C3 part C  
Clause 3(1)(a): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.  
Clause 3(1)(a): amended, on 5 October 2017, by clause 114 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **4 Requirements for grid and grid interface**

- (1) Each **asset owner** and **grid owner** must co-operate with the **system operator** to ensure that protection systems on both sides of a **grid interface**, which include **main protection systems** and **back up protection systems**, are co-ordinated so that a faulted **asset** is **electrically disconnected** by the **main protection system** first and the other **assets** are not prematurely **electrically disconnected**.
- (2) A proposed **grid interface**, including the settings of any associated protection system, must be agreed between the relevant **asset owner** and the **system operator** before being implemented.
- (3) Each **asset owner** must ensure that sufficient **circuit breakers** are provided for its **assets** so that each of its **assets** is able to be **electrically disconnected** from the **grid** whenever a fault occurs within the **asset**.
- (4) Each **asset owner** must ensure that it provides protection systems for its **assets** that are connected to, or form part of, the **grid**. Each **asset owner** must also ensure that as a minimum requirement—
- (a) such protection systems support the **system operator** in planning to comply, and complying, with the **principal performance obligations** and are designed, **commissioned** and maintained, and settings are applied, to achieve the following performance in a reliable manner:
- (i) **electrically disconnect** any faulted **asset** in minimum practical time (taking into account selectivity margins and industry best design practice) and minimum disruption to the operation of the **grid** or other **assets**:
- (ii) be selective when operating, so that the minimum amount of **assets** are **electrically disconnected**:
- (iii) as far as reasonably practicable, preserve power system stability; and
- (b) it provides duplicated **main protection systems** for each of its **assets** at voltages of 220 kV a.c. or above, other than busbars; and
- (c) it provides, for each of its 220 kV a.c. busbars—
- (i) a single **main protection system** and a **back up protection system**; or
- (ii) if the performance of its **back up protection system** does not meet the requirements of paragraph (a), a duplicated **main protection system**; and
- (d) it provides duplicated **main protection systems** for each of its busbars at voltages above 220 kV a.c; and
- (e) it designs, tests and maintains its **main protection systems** at voltages of 220 kV a.c. or above in accordance with the requirements set out in Appendix A; and

- (f) it provides a **circuit breaker failure protection system**, that need not be duplicated, for each **circuit breaker** at voltages of 220 kV a.c. or above. **Circuit breaker** duplication is not required; and
  - (g) protection system design for a connection of **assets** to the **grid** at lower voltages must be similar to existing design practice in adjacent connections of **assets** to ensure coordination of protection systems.
- (5) At a **point of connection**—
- (a) an **asset owner**, other than a **grid owner**, must provide a means of checking **synchronisation** before the switching of **assets** if it is possible that such switching may result in **electrical connection** of parts of the New Zealand electric power system that are not **synchronised**; and
  - (b) a **grid owner** must provide a means of checking **synchronisation** before the switching of **assets** in locations agreed with the **system operator** so that it is not possible for such switching to result in **electrical connection** of parts of the New Zealand electric power system that are not **synchronised**.
- (6) An auto-reclose facility at the **grid interface**, at which power flows into the **grid** can occur, must include an appropriate **synchronising** check facility.

Compare: Electricity Governance Rules 2003 clause 4 technical code A schedule C3 part C

Clause 4 Heading: amended, on 15 May 2014, by clause 11 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

Clause 4(1), (3), (4) and (5): amended, on 5 October 2017, by clause 115 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 4(4) and (5): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

## 5 Specific requirements for generators

- (1) Each **generator** must ensure that—
- (a) each of its **generating units**, and its associated **control systems**,—
    - (i) supports the **system operator** to plan to comply, and to comply, with the **principal performance obligations**; and
    - (ii) is able to **synchronise** at a stable frequency within the frequency range stated in the **asset capability statement** for that **asset**; and
  - (b) the rate of change in the output of any of its **generating units** does not adversely affect the **system operator's** ability to plan to comply, and to comply, with the **principal performance obligations**. The rate of change must be adjustable to allow for changes in **grid** conditions; and
  - (c) each of its **generating units** has a speed governor that—
    - (i) provides stable performance with adequate damping; and
    - (ii) has an adjustable droop over the range of 0% to 7%; and
    - (iii) does not adversely affect the operation of the **grid** because of any of its non-linear characteristics; and
  - (d) appropriate speed governor settings to be applied before commencing **system tests** for a **generating unit** are agreed between the **system operator** and the **generator**. The performance of the **generating unit** is then assessed by measurements from **system tests** and final settings are then applied to the **generating unit** before making it ready for service after those final settings are

- agreed between the **system operator** and the **generator**. An **asset owner** must not change speed governor settings without **system operator** approval.
- (2) Each **generator** with a **generating unit** connected to the **grid** must—
- (a) have an excitation and voltage control system with a voltage set point that is adjustable over the range of voltage set out in clause 8.23 and operates continuously in the voltage control mode when **synchronised**; and
  - (b) in order to meet the **asset owner performance obligations**, ensure that each of its **generating units** is equipped with either—
    - (i) a connection transformer with an appropriate range of taps on each transformer together with an on-load tap-changer; or
    - (ii) **assets** to give a dynamic performance equivalent to those required by subparagraph (i).
- (3) If the output of more than 1 **generating unit** is controlled by a common **control system**, the **generator** must ensure that—
- (a) the common **control system** does not adversely affect the ability of the **system operator** to plan to comply, and to comply, with the **principal performance obligations**; and
  - (b) the combined output from the **generating units** performs as though it were from 1 **generating unit**; and
  - (c) the **control system** does not degrade the individual performance of any one **generating unit**.
- (4) Each **generator** and **grid owner** must ensure that each of its **assets** is capable of operating under the voltage imbalance conditions stated in clause 4.9 of the **Connection Code** and, when operated within the limits stated in its **asset capability statement**, does not—
- (a) contribute unbalanced phase currents into the **grid**; or
  - (b) aggravate any current imbalance that may occur on the **grid**.
- (5) At some **points of connection**, a **generator** must ensure that its **generating units** have both **main protection systems** and **back-up protection systems** for nearby faults on the **grid**, if the necessity for, and the method of providing, such protection systems is agreed between the **system operator** and the **generator**.

Compare: Electricity Governance Rules 2003 clause 5 technical code A schedule C3 part C

Clause 5(2): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 5(2): amended, on 5 October 2017, by clause 116 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 5(4): amended, on 19 May 2016, by clause 29 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.

## 6 Specific requirements for connected asset owners

Each **connected asset owner** must agree with the **system operator** any temporary or permanent connection of the **connected asset owner's assets** if those **assets** become simultaneously connected to the **grid** at more than 1 **point of connection**.

Compare: Electricity Governance Rules 2003 clause 6 technical code A schedule C3 part C

Clause 6 Heading: amended, on 1 February 2016, by clause 18(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 6: amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment

(Distributed Generation) 2014.

Clause 6: amended, on 1 February 2016, by clause 18(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 6: amended, on 5 October 2017, by clause 117 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 7 Modifications and changes to assets

- (1) **Assets** that have been modified, or are proposed to be modified, are deemed to be new **assets** for the purposes of this Code and this **Technical Code** and are subject to the requirements for connection to the **grid** and the requirements for **commissioning assets**. For the purposes of this Schedule, the following are considered to be modifications to **assets**, if the new connection or alteration may affect the capacity of the **assets** or may affect **asset owner performance obligations** or **technical code** requirements:
  - (a) a new connection of **assets** to the **grid** or a **local network**;
  - (b) a new connection of **assets** to form part of the **grid**;
  - (c) a new connection of an **embedded generator** to a **local network** other than an **excluded generator** as defined in clause 8.21(1);
  - (d) an alteration to **assets** already connected to the **grid** or, in the case of **embedded generator**, already connected to a **local network**.
- (2) The **asset owner** must give written notice to the **system operator** in a timely manner of any **assets** that have been **decommissioned** if the **assets** affect or could affect the **system operator's** ability to comply with its **principal performance obligations**.

Compare: Electricity Governance Rules 2003 clause 7 technical code A schedule C3 part C

Clause 7(1): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 7(1) and (2): amended, on 5 October 2017, by clause 118 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 8 Records, tests and inspections

- (1) Each **asset owner** must arrange for, and retain, records for each of its **assets** to demonstrate that the **assets** comply with the **asset owner performance obligations** and this **technical code**.
- (2) In addition to the requirements for **commissioning** or testing in clause 2(6) to (8), each **asset owner** must carry out periodic testing—
  - (a) of its **assets** in accordance with Appendix B; and
  - (b) in the case of an **asset owner** that is an **extended reserve provider**, of **assets** specified in its **statement of extended reserve obligations** in accordance with that statement.
- (3) If the **system operator** advises an **asset owner** that it reasonably believes that an **asset** may not comply with an **asset owner performance obligation** or this **technical code**, the **asset owner** must—
  - (a) as soon as practicable, but no later than 30 days after receiving a written request, advise the **system operator** of its remedial or test plan for the **assets**; and
  - (b) as soon as reasonably practicable undertake any remedial action or testing of its **assets** in accordance with its plan advised to the **system operator** in paragraph (a). The **system operator** may require such testing or remedial action to be undertaken in the presence of a **system operator** representative.

- (4) Each **asset owner** must, at the request of the **system operator**, provide access to records of the performance or testing of an **asset** and access to inspect an **asset**.

Compare: Electricity Governance Rules 2003 clause 8 technical code A schedule C3 part C

Clause 8(2): substituted, on 7 August 2014, by clause 16 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 8(2): amended, on 5 October 2017, by clause 119 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **9 Status of system operator approval**

A review and approval by the **system operator** under this Code must not be construed as confirming or endorsing the design or warranting the safety, durability or reliability of an **asset**. Such review or approval does not relieve the **asset owner** from its obligations to continue to meet the requirements of this Code. The **system operator** is not, by reason of any such review or lack of review, responsible for strength, adequacy of design or capacity of an **asset**. In undertaking a review, the **system operator** is not responsible for any consequence of a failure of an **asset** due to inadequate design.

Compare: Electricity Governance Rules 2003 clause 9 technical code A schedule C3 part C

*Appendix A: Main protection system requirements*

**1 General requirements**

An **asset owner** must design, test and maintain all **main protection systems** at voltages of 220 kV a.c. or above to conform to electricity industry standards and practices as they are reasonably and ordinarily applied by a skilled and experienced **asset owner** to current installations at voltages of 220 kV a.c. or above in the New Zealand context.

Compare: Electricity Governance Rules 2003 clause 1 appendix A technical code A schedule C3 part C

**2 Specific requirements for main protection systems**

**Main protection systems** at voltages of 220 kV a.c. or above must meet the requirements set out below:

- (a) either test blocks or both test switches and test terminals must be provided:
- (b) the electrical continuity of fused protection circuits, including d.c. and voltage transformer circuits must be supervised:
- (c) the electrical continuity of **circuit breaker** trip circuits must be supervised.

Compare: Electricity Governance Rules 2003 clause 2 appendix A technical code A schedule C3 part C

**3 Specific requirements for duplicated main protection systems**

Duplicated **main protection systems** (the 2 components of which are referred to in this appendix as main 1 protection and main 2 protection) at voltages of 220 kV a.c. or above must meet the requirements set out below:

- (a) duplicated **main protection systems** must be designed with sufficient coverage and probability of detection that if any or all parts of 1 **main protection system** fail, the other **main protection system electrically disconnects** a faulted **asset** before a **back up protection system** initiates the **electrical disconnection** of other non-faulted **assets**:
- (b) the d.c. supply to duplicated **main protection systems** must consist of 2 independent station batteries, each with its own charger, supervision, and with a capacity and carry over duty to cover charger failure until repair and restoration. Station batteries may only feed a common primary d.c. busbar provided that the busbar is insulated and isolated from earth:
- (c) the d.c. supply to each duplicated **main protection system** must be independently fused at the primary d.c. busbar:
- (d) the manufacturer of main 1 protection must not be the same as the manufacturer of main 2 protection, unless one protection uses different measurement principles from the other:
- (e) the current transformer core (or an equivalent instrument) and the cabling associated with that current transformer core or equivalent instrument (as the case may be) used for main 1 protection must be independent from that used for main 2 protection:
- (f) if a voltage transformer supply is required for main 1 or main 2 protection—
  - (i) the supply must be fused at the voltage transformer; and
  - (ii) the supply for main 1 protection must use an independent fuse and cable

from those used for main 2 protection:

- (g) main 1 protection must use, in each of the **circuit breakers** tripped by that main 1 protection, an independent trip coil from that used for main 2 protection:
- (h) if protection signalling is used, main 1 protection must use a signal channel over an independent bearer on a different route from that used for main 2 protection:
- (i) main 1 protection cabling must be segregated from main 2 protection cabling in a manner that minimises the risk of common mode failure of main 1 and 2 protection and minimises the number of connections in any protection circuit.

Compare: Electricity Governance Rules 2003 clause 3 appendix A technical code A schedule C3 part C  
Clause 3(a) and (i): amended, on 5 October 2017, by clause 120 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.  
Clause 3(i): amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

#### 4 Existing equipment

Despite clauses 1 and 3—

- (a) a current transformer **commissioned** before 31 May 2007 is not required to comply with clause 3(e) until the current transformer is replaced; and
- (b) a **circuit breaker commissioned** before 31 May 2007, if not designed to incorporate a second trip coil, is not required to comply with clause 3(g) until the **circuit breaker** is replaced; and
- (c) cabling **commissioned** before 31 May 2007, if not designed to be segregated, is not required to comply with the segregation requirements of clause 3(i) until the cabling is replaced.

Compare: Electricity Governance Rules 2003 clause 4 appendix A technical code A schedule C3 part C  
Clause 4: amended, on 5 October 2017, by clause 121 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

*Appendix B: Routine testing of assets*

Cross heading: amended, on 7 August 2014, by clause 17 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

**1 Periodic tests to be carried out**

- (1) This Appendix sets out periodic tests required for the purposes of clause 8(2) of **Technical Code A**.
- (2) Each **asset owner** may be legally required, other than under this Code, to carry out additional tests to ensure that their **assets** are safe and reliable.
- (3) For the purposes of this Appendix, **generating unit** does not include a **generating unit** for which wind is the primary power source.

Compare: Electricity Governance Rules 2003 clause 1 appendix B technical code A schedule C3 part C  
Clause 1: substituted, on 7 August 2014, by clause 18 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

**2 Generating unit frequency response**

Each **generator**, other than **generators** who are owners of **excluded generating stations** that are not subject to a directive issued by the **Authority** under clause 8.38, must—

- (a) test the trip frequencies and trip time delays of each of its **generating units'** analogue over-frequency relays and analogue under-frequency relays at least once every 4 years; and
- (b) test the trip frequencies and trip time delays of each of its **generating units'** non-self monitoring digital over-frequency relays and non-self monitoring digital under-frequency relays at least once every 4 years; and
- (c) test the trip frequencies and trip time delays of each of its **generating units'** self monitoring digital over-frequency relays and self monitoring digital under-frequency relays at least once every 10 years; and
- (d) based on the tests carried out in accordance with paragraphs (a) to (c), provide a verified set of under-frequency trip settings and time delays to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test; and
- (e) based on the tests carried out in accordance with paragraphs (a) to (c), provide a verified set of over-frequency trip settings and time delays to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test.

Compare: Electricity Governance Rules 2003 clause 2 appendix B technical code A schedule C3 part C

**3 Generating unit governor and speed control**

Each **generator**, other than **generators** who are owners of **excluded generating stations** that are not subject to a directive issued by the **Authority** under clause 8.38 must—

- (a) test the governor system response of each of its **generating units'** mechanical or analogue speed governors at least once every 5 years; and
- (b) test the governor system response of each of its **generating units'** digital or



- electro-hydraulic speed governors at least once every 10 years; and
- (c) based on the tests carried out in accordance with paragraphs (a) or (b), provide a verified set of modelling parameters and governor system response data to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test, including—
- (i) a block diagram showing the mathematical representation of the governor; and
  - (ii) a block diagram showing the mathematical representation of the turbine dynamics including non-linearity and the applicable fuel source; and
  - (iii) a parameter list showing gains, time constants and other settings applicable to the block diagrams.

Compare: Electricity Governance Rules 2003 clause 3 appendix B technical code A schedule C3 part C

#### 4 **Generating unit transformer voltage control**

Each **generator** with a **point of connection** to the **grid** must—

- (a) test the operation of each of its **generating unit** transformers' on-load tap changer analogue **control systems** at least once every 4 years; and
- (b) test the operation of each of its **generating unit** transformers' on-load tap changer digital **control systems** at least once every 10 years; and
- (c) based on the tests carried out in accordance with paragraphs (a) or (b), provide a verified set of control parameters including voltage set points, operating dead bands and response times to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test.

Compare: Electricity Governance Rules 2003 clause 4 appendix B technical code A schedule C3 part C

#### 5 **Generating unit voltage response and control**

Each **generator** with a **point of connection** to the **grid** must—

- (a) test the modelling parameters and voltage response of each of its **generating units'** analogue excitation systems at least once every 5 years; and
- (b) test the modelling parameters and voltage response of each of its **generating units'** digital excitation systems at least once every 10 years; and
- (c) based on the tests carried out in accordance with paragraphs (a) or (b), provide a verified set of modelling parameters and voltage response data to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test, including—
  - (i) a block diagram showing the mathematical representation of the automatic voltage regulator; and
  - (ii) a block diagram showing the mathematical representation of the exciter; and
  - (iii) a parameter list showing gains, time constants and other settings applicable to the block diagrams.

Compare: Electricity Governance Rules 2003 clause 5 appendix B technical code A schedule C3 part C

**6** *[Revoked]*

Compare: Electricity Governance Rules 2003 clause 6 appendix B technical code A schedule C3 part C  
Clause 6: revoked, on 7 August 2014, by clause 19 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

**7** *[Revoked]*

Compare: Electricity Governance Rules 2003 clause 7 appendix B technical code A schedule C3 part C  
Clause 7: revoked, on 7 August 2014, by clause 19 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

**8** **Grid owner transformer voltage range**

Each **grid owner** must—

- (a) test the operation of each of its transformers' on-load tap changer analogue **control systems** at least once every 4 years; and
- (b) test the operation of each of its transformers' on-load tap changer digital **control systems** at least once every 10 years; and
- (c) based on the tests carried out in accordance with paragraphs (a) or (b), provide a verified set of control parameters to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test, including voltage set points, operating dead bands and response times.

Compare: Electricity Governance Rules 2003 clause 8 appendix B technical code A schedule C3 part C

**9** **Grid owner static var compensator transient response and control**

Each **grid owner** must—

- (a) test the transient response, steady state response and a.c. disturbance response of each of its static var compensators at least once every 10 years; and
- (b) test the operation of each of its static var compensators' analogue **control systems** at least once every 4 years; and
- (c) test the operation of each of its static var compensators' digital **control systems** at least once every 10 years; and
- (d) based on the test carried out in accordance with paragraph (a), provide a verified set of modelling parameters, transient response parameters, steady state response parameters, and a.c. disturbance response data to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test including—
  - (i) a block diagram showing the mathematical representation of the static var compensator; and
  - (ii) a parameter list showing gains, time constants, limiters and other settings applicable to the block diagrams; and
  - (iii) a detailed functional description of all of the components of the static var compensator and how they interact in each mode of control; and
  - (iv) step response test results; and
  - (v) a.c. fault recovery disturbance test results; and
- (e) based on tests carried out in accordance with paragraphs (b) or (c), provide a set of **control system** test results to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test.

Compare: Electricity Governance Rules 2003 clause 9 appendix B technical code A schedule C3 part C

## 10 Grid owner capacitors and reactive power control systems

Each **grid owner** must—

- (a) test the capacitance of each of its capacitors at least once every 8 years; and
- (b) test the operation of each of its reactive power control assets' analogue **control systems** at least once every 4 years; and
- (c) test the operation of each of its reactive power control assets' digital **control systems** at least once every 10 years; and
- (d) based on the test carried out in accordance with paragraph (a), provide a set of test results to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test; and
- (e) based on tests carried out in accordance with paragraphs (b) or (c), provide a verified set of **control system** test results including voltage set points, operating dead bands and time delays to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test.

Compare: Electricity Governance Rules 2003 clause 10 appendix B technical code A schedule C3 part C

## 11 Grid owner synchronous compensators

Each **grid owner** must—

- (a) test each of its synchronous compensators' analogue and electromechanical excitation systems at least once every 5 years; and
- (b) test each of its synchronous compensators' digital excitation systems at least once every 10 years; and
- (c) based on the tests carried out in accordance with paragraphs (a) or (b), provide a verified set of modelling parameters and voltage response data to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test including—
  - (i) a block diagram showing the mathematical representation of the automatic voltage regulator; and
  - (ii) a block diagram showing the mathematical representation of the exciter; and
  - (iii) a detailed functional description of the excitation system in all modes of control; and
  - (iv) a parameter list showing gains, time constants, limiters and other settings applicable to the block diagrams.

Compare: Electricity Governance Rules 2003 clause 11 appendix B technical code A schedule C3 part C

## 12 HVDC link frequency control and protection

The **HVDC owner** must—

- (a) test the operation of each of its **HVDC link's** analogue **control systems** at least once every 4 years; and
- (b) test the operation of each of its **HVDC link's** digital **control systems** at least once every 10 years; and
- (c) test the operation of each of its **HVDC link's** analogue protection systems at least

- once every 4 years; and
- (d) test the operation of each of its **HVDC link**'s digital protection systems at least once every 10 years; and
- (e) test the modulation functions on its **HVDC link** at least once every 10 years; and
- (f) based on the tests carried out in accordance with paragraphs (a) or (b), provide a set of **control system** test results and verified modelling parameters to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test; and
- (g) based on the tests carried out in accordance with paragraphs (c) or (d), provide a set of protection system test results to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test; and
- (h) based on the tests carried out in accordance with paragraph (e), provide a set of modulation function test results to the **system operator** in an updated **asset capability statement** within 3 months of the completion date of each such test including—
  - (i) a block diagram showing the mathematical representation of the **HVDC link**; and
  - (ii) a parameter list showing gains, time constants, limiters and other settings applicable to the block diagram; and
  - (iii) a detailed functional description of all of the components of the **HVDC link** and how they interact in each mode of control.

Compare: Electricity Governance Rules 2003 clause 12 appendix B technical code A schedule C3 part C

### 13 Asset owner a.c. protection systems

Each **asset owner** must—

- (a) test the operation of the analogue protection systems on its a.c. **assets** at least once every 4 years; and
- (b) test the operation of the non-self monitoring digital protection systems on its a.c. **assets** at least once every 4 years; and
- (c) test the operation of the self monitoring digital protection systems on its a.c. **assets** at least once every 10 years; and
- (d) test the operation of the protection system measuring circuits on its a.c. **assets** by secondary injection at least once every 4 years; and
- (e) test the operation of the protection system trip circuits, including circuit breaker trips, on its a.c. **assets** at least once every 4 years; and
- (f) confirm at least once every 4 years that its protection settings are identified, coordinated, applied correctly and meet the requirements of the **AOPOs** and the **technical codes**; and
- (g) based on tests carried out in accordance with paragraphs (a) to (e), provide a verification to the **system operator** in an updated **asset capability statement** that the protection systems meet the requirements of the **AOPOs** and **technical codes** within 3 months of the completion date of each such test; and
- (h) based on the confirmation carried out in accordance with paragraph (f), provide an

updated **asset capability statement** to the **system operator** within 3 months of the completion date of each such confirmation.

Compare: Electricity Governance Rules 2003 clause 13 appendix B technical code A schedule C3 part C

#### 14 **Representative testing**

- (1) Subject to clause 8(3) of **Technical Code A**, each **asset owner** may provide the information required under clauses 3(c), 5(c), and 11(c) to the **system operator**, based on representative modelling parameters and response data instead of based on the tests required under clauses 3(a) and (b), 5(a) and (b), and 11(a) and (b), for any group of identical **assets**, if each of those **assets**—
  - (a) was manufactured to the same specification; and
  - (b) is installed at the same location; and
  - (c) is controlled in the same way; and
  - (d) has a similar maintenance history.
- (2) Each **asset owner** providing representative modelling parameters and response data to the **system operator** in accordance with subclause (1) for a group of identical **assets** must—
  - (a) complete a full set of tests in accordance with clauses 3(a) or (b), 5(a) or (b), and 11(a) or (b), as applicable, on an **asset** that is representative of that group to derive a verified set of modelling parameters and response data; and
  - (b) complete sufficient testing on the remaining **assets** in that group of identical **assets** in accordance with clauses 3(a) or (b), 5(a) or (b), and 11(a) or (b), as applicable, to verify that the performance of the remaining **assets** in that group is fully consistent with the modelling parameters and response data derived from the tests carried out on the representative **asset**; and
  - (c) certify to the **system operator**, that to the best of the **asset owner's** information, knowledge and belief, the performance of that group of **assets** is fully consistent with the representative modelling parameters and response data provided to the **system operator** for that group of **assets**.

Compare: Electricity Governance Rules 2003 clause 14 appendix B technical code A schedule C3 part C

#### 15 **Transitional provisions**

- (1) Unless a test interval of less than 60 months is specified in this Appendix, each **asset owner** must complete the first of each test required in this Appendix no later than 5 June 2013.
- (2) A test that is required to be carried out in accordance with this Appendix, but that an **asset owner** carried out before 5 June 2008, is deemed to be the first test of that type required in this Appendix, if—
  - (a) the **asset owner** has submitted the relevant written test results to the **system operator**; and
  - (b) the **system operator** has advised the **asset owner** that the specification of the test is acceptable; and
  - (c) the interval between the actual date of the test and the date on which this Code came into force is less than the maximum test interval specified for the

corresponding test in this Appendix.

- (3) If a test has been deemed to be the first test in accordance with subclause (2), the date by which the next such test must be carried out must be calculated using the actual date upon which the first test was carried out, not the date upon which it was deemed to have been carried out.

Compare: Electricity Governance Rules 2003 clause 15 appendix B technical code A schedule C3 part C  
Clause 15(1): amended, on 21 September 2012, by clause 11(1) of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

Clause 15(2): amended, on 21 September 2012, by clause 11(2) of the Electricity Industry Participation (Minor Amendments) Code Amendment 2012.

*Technical Code B – Emergencies*

**1 Purpose and application**

The purpose of this **technical code** is to set out the basis on which the **system operator** and **participants** must anticipate and respond to emergency events on the **grid** that affect the **system operator's** ability to plan to comply, and to comply with its **principal performance obligations**.

Compare: Electricity Governance Rules 2003 clause 1.1 technical code B schedule C3 part C

**2 Application**

This **technical code** applies to all **asset owners** except for **excluded generating stations**. If the **system operator** reasonably considers it necessary to assist the **system operator** in planning to comply and complying with the **principal performance obligations**, the **system operator** may require that an **excluded generating station** comply with some or all of the requirements of this **technical code**.

Compare: Electricity Governance Rules 2003 clause 1.2 technical code B schedule C3 part C

**3 Obligations of all parties**

The **system operator** and all **participants** must plan individually and, if appropriate, collectively, for a **grid emergency**, and act quickly and safely during a **grid emergency** in accordance with this **technical code**, so that the actual and potential impacts of any **grid emergency** are minimised.

Compare: Electricity Governance Rules 2003 clause 2 technical code B schedule C3 part C

**4 Obligations of the system operator**

The **system operator** must use reasonable endeavours to ensure that—

- (a) if necessary, each **participant** is advised of any independent action required of it if there is a **grid emergency**; and
- (b) facilities to be put in place by **grid owners** or other **asset owners** to manually **electrically disconnect demand** at each **point of connection** are specified.

Compare: Electricity Governance Rules 2003 clause 3 technical code B schedule C3 part C

Clause 4: amended, on 15 May 2014, by clause 12 of the Electricity Industry Participation (Minor Code Amendments) Code Amendment 2014.

Clause 4(b): amended, on 5 October 2017, by clause 122 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

**5 Formal notices and responses**

- (1) The **system operator** must issue a notice either orally or in writing to relevant **participants** whenever, or as soon as practicable after, any of the following events has occurred:

- (a) the ability of the **system operator** to plan to comply, and to comply, with the **principal performance obligations** is at risk or is compromised (as set out in the **policy statement**);
- (b) public safety is at risk;
- (c) there is a risk of significant damage to **assets**;
- (d) independent action has been taken in accordance with this **technical code** to

restore the **system operator's principal performance obligations**.

- (1A) The **system operator** must issue a notice in writing to all **participants** whenever, or as soon as practicable after, an **island** wide instruction to **electrically disconnect demand** has been issued, amended, or revoked under clause 6.
- (1B) For the purposes of subclause (1A), an **island** wide instruction is when the electrical or geographical region affected by a notice is all of an **island**.
- (1C) The **system operator** must provide any notice issued under subclause (1A) to the **pricing manager** by 0730 hours on the following **trading day**.
- (2) The **system operator** must ensure that a **formal notice** issued in accordance with subclause (1) or subclause (1A) includes the following:
  - (a) the electrical or geographical region affected by the notice:
  - (b) the potential consequences of the situation:
  - (c) the responses requested of **participants**:
  - (d) the start time and end time of the situation to which the notice applies.
- (3) The **system operator** must record the issue of a **formal notice**, and each **participant** must record receipt of a **formal notice**.
- (4) If the **system operator** issues a request in accordance with this **technical code** to a **participant**, the **participant** must use reasonable endeavours to respond to the request.

Compare: Electricity Governance Rules 2003 clause 4 technical code B schedule C3 part C

Clause 5(1A): inserted, on 1 June 2013, by clause 5(a) of the Electricity Industry Participation (Scarcity Pricing) Code Amendment 2011.

Clause 5(1A): amended, on 5 October 2017, by clause 123 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 5(1B): inserted, on 1 June 2013, by clause 5(a) of the Electricity Industry Participation (Scarcity Pricing) Code Amendment 2011.

Clause 5(1C): inserted, on 1 June 2013, by clause 5(a) of the Electricity Industry Participation (Scarcity Pricing) Code Amendment 2011.

Clause 5(2): amended, on 1 June 2013, by clause 5(b) of the Electricity Industry Participation (Scarcity Pricing) Code Amendment 2011.

Clause 5(2)(d): amended, on 19 January 2017, by clause 4 of the Electricity Industry Participation Code Amendment (Scarcity Pricing) 2016.

## **6 Actions to be taken by the system operator in a grid emergency**

- (1) If insufficient generation and **frequency keeping** gives rise to a **grid emergency**, the **system operator** may, having regard to the priority below, if practicable, and regardless of whether a **formal notice** has been issued, do 1 or more of the following:
  - (a) request that a **generator** varies its **offer** and **dispatch** the **generator** in accordance with that **offer**, to ensure there is sufficient generation and **frequency keeping**:
  - (b) request that a **purchaser** or a **connected asset owner** reduce **demand**:
  - (c) require a **grid owner** to reconfigure the **grid**:
  - (d) require the **electrical disconnection** of **demand** in accordance with clause 7A:
  - (e) take any other reasonable action to alleviate the **grid emergency**.
- (2) If insufficient transmission capacity gives rise to a **grid emergency**, the **system operator** may, having regard to the priority below, if practicable, and regardless of whether a **formal notice** has been issued, do 1 or more of the following:
  - (a) request that a **generator** varies its **offer** and **dispatch** the **generator** in accordance with that **offer**, to ensure that the available transmission capacity



- within the **grid** is sufficient to transmit the remaining level of **demand**:
- (b) request that an **asset owner** restores its **assets** that are not in service:
  - (c) request that a **purchaser** or **connected asset owner** reduces its **demand**:
  - (d) require the **electrical disconnection of demand** in accordance with clause 7A:
  - (e) take any other reasonable action to alleviate the **grid emergency**.
- (3) If frequency is outside the **normal band** and all available **injection** has been **dispatched**, the **system operator** may require the **electrical disconnection of demand** in accordance with clause 7A in appropriate block sizes until frequency is restored to the **normal band**.
- (4) If any **grid** voltage reaches the minimum voltage limit set out in the table contained in clause 8.22(1), and is sustained at or below that limit, the **system operator** may require the **electrical disconnection of demand** in accordance with clause 7A in appropriate block sizes until the voltage is restored to above the minimum voltage limit.
- (5) The **system operator** may, if an unexpected event occurs giving rise to a **grid emergency**, take any reasonable action to alleviate the **grid emergency**.

Compare: Electricity Governance Rules 2003 clause 5 technical code B schedule C3 part C

Clause 6: amended, on 5 October 2017, by clause 124 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 6(1)(b): amended, on 1 February 2016, by clause 19 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 6(1)(d), amended, on 7 August 2014, by clause 20(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 6(2)(c): amended, on 1 February 2016, by clause 19 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 6(2)(d): amended, on 7 August 2014, by clause 20(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 6(3): amended, on 7 August 2014, by clause 20(2) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 6(4): amended, on 7 August 2014, by clause 20(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

## 7 Extended reserve providers to provide extended reserve

- (1) Each **extended reserve provider** must provide **extended reserve** at all times in accordance with its current **statement of extended reserve obligations** issued by the **system operator** under clause 8.54P.
- (2) An **extended reserve provider** must give written notice to the **system operator** as soon as practicable if the **extended reserve provider** is unable to comply with subclause (1).

Compare: Electricity Governance Rules 2003 clause 6 technical code B schedule C3 part C

Clause 7: substituted, on 7 August 2014, by clause 21 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 7(2): amended, on 19 December 2014, by clause 15 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 7(2): amended, on 5 October 2017, by clause 125 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 7(9A) and (9B): inserted, from 3 January 2013 to 2 October 2013, by clause 4(a) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(9A) and (9B): inserted, on 2 October 2013, by clause 4(a) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(9A) and (9B): revoked, on 3 April 2014, by clause 5(a) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(10): revoked, from 3 January 2013 to 2 October 2013, by clause 4(b) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(10): revoked, on 2 October 2013, by clause 4(b) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(10): inserted, on 3 April 2014, by clause 5(b) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(11): amended, from 3 January 2013 to 2 October 2013, by clause 4(c) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(11): amended, on 2 October 2013, by clause 4(c) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(11): amended, on 3 April 2014, by clause 5(c) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(12A) and (12B): inserted, from 3 January 2013 to 2 October 2013, by clause 4(d) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(12A) and (12B): inserted, on 2 October 2013, by clause 4(d) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(12A) and (12B): revoked, on 3 April 2014, by clause 5(d) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(13): amended, from 3 January 2013 to 2 October 2013, by clause 4(e) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(13): amended, on 2 October 2013, by clause 4(e) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(13): amended, on 3 April 2014, by clause 5(e) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(15): amended, from 3 January 2013 to 2 October 2013, by clause 4(f) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(15): amended, on 2 October 2013, by clause 4(f) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(15): amended, on 3 April 2014, by clause 5(f) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(16): substituted, from 3 January 2013 to 2 October 2013, by clause 4(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(16): substituted, on 2 October 2013, by clause 4(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(16): substituted, on 3 April 2014, by clause 5(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(16A) and (16B): inserted, from 3 January 2013 to 2 October 2013, by clause 4(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2012.

Clause 7(16A) and (16B): inserted on 2 October 2013, by clause 4(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

Clause 7(16A) and (16B): revoked on 3 April 2014, by clause 5(g) of the Electricity Industry Participation (Automatic Under-Frequency Load Shedding Systems) Code Amendment 2013.

## **7A Emergency load shedding**

- (1) Each **connected asset owner** must maintain a process for **electrical disconnection of demand** for **points of connection**.
- (2) The process must specify the **participant** that will effect the **electrical disconnection of demand**.
- (3) The **connected asset owner** must obtain agreement for the process from the **system operator** and each **grid owner**.
- (4) Each **connected asset owner** must advise the **system operator** of the agreed process in addition to any changes to a process previously advised.
- (5) If the **system operator** requires the **electrical disconnection of demand** under this **technical code**, the **system operator** must instruct **connected asset owners** and **grid owners** in accordance with the agreed process under subclause (3) to **electrically disconnect demand** for the relevant **point of connection**.
- (6) If the **system operator** and a **connected asset owner** or **grid owner** have not agreed on a process for **electrical disconnection of demand** at a **point of connection**, the **system**

**operator** must instruct **grid owners** to **electrically disconnect demand** directly at the relevant **point of connection**.

- (7) To the extent practicable, the **system operator** must use reasonable endeavours when instructing the **electrical disconnection of demand** to ensure equity between **connected asset owners**.
- (8) Each **connected asset owner** or **grid owner** must act as instructed by the **system operator** operating under clause 6.

Clause 7A: inserted, on 7 August 2014, by clause 21 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 7A(1), (2), (5), (6) and (7): amended, on 5 October 2017, by clause 126 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 7A(1), (3), (4), (5), (6), (7) and (8): amended, on 1 February 2016, by clause 20 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

## **7B Obligations of extended reserve providers in relation to automatic under-frequency load shedding**

- (1) On the operation of **extended reserve** that is an **automatic under-frequency load shedding** system, an **extended reserve provider**—
- (a) must, as soon as practicable, advise the **system operator** of the operation of the **automatic under-frequency load shedding** system and, if reasonably required by the **system operator** to plan to comply, or to comply, with its **principal performance obligations**, a reasonable estimate of the amount of **demand** that has been **electrically disconnected**; and
  - (b) may **electrically connect demand** only when permitted to do so by the **system operator**; and
  - (c) must ensure **demand electrically connected** under paragraph (b) complies with the obligations in its **statement of extended reserve obligations**; and
  - (d) must report to the **system operator** if **demand** is moved between **points of connection**; and
  - (e) may request permission to **electrically connect demand** from the **system operator** if no instruction to **electrically connect demand** is received from the **system operator** within 15 minutes of the frequency returning to the **normal band**; and
  - (f) may cautiously and gradually **electrically connect the demand electrically disconnected** through the **automatic under-frequency load shedding** system if there is a **loss of communication** with the **system operator**, 15 minutes after the **loss of communication** occurred.
- (2) An **extended reserve provider** may **electrically connect demand** only while frequency is within the **normal band** and voltage is within the required range.
- (3) Each **extended reserve provider** must immediately cease the **electrical connection of demand** and, to the extent necessary, **electrically disconnect demand**, if the frequency drops below the **normal band** or the voltage moves outside the required range.
- (4) As soon as practicable after communications are restored, each **extended reserve provider** must report to the **system operator** on the status of **electrical connection** of load and the status of re-arming the **automatic under-frequency load shedding** system.

Clause 7B: inserted, on 7 August 2014, by clause 21 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 7B: amended, on 5 October 2017, by clause 127 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### **7C Obligations of extended reserve providers in security of supply situations**

- (1) This clause applies if a direction under clause 9.15 is in force.
- (2) The **system operator** may give notice to 1 or more of the **participants** specified in subclause (5), specifying modifications to the **participant's statement of extended reserve obligations** during any 1 or more periods, or in any 1 or more circumstances, specified in the notice.
- (3) The **system operator** must keep a record of each notice given under subclause (2).
- (4) When a notice under subclause (2) is in force in relation to a **participant**, the requirements of the **participant's statement of extended reserve obligations** are modified for that **participant** to the extent, and during the periods or in the circumstances (as the case may be), specified in the notice.
- (5) The **participants** to whom the **system operator** may issue a notice in accordance with subclause (2) are—
  - (a) **connected asset owners** in the North Island; and
  - (b) **grid owners** in the South Island.
- (6) The **system operator** may amend or revoke a notice, or revoke and substitute a new notice.
- (7) A notice under subclause (2) expires on the earlier of—
  - (a) the date (if any) specified in the notice for its expiry; and
  - (b) the revocation or expiry of the direction referred to in subclause (1).

Clause 7C: inserted, on 7 August 2014, by clause 21 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.

Clause 7C(5)(a): amended, on 1 February 2016, by clause 21 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

### **8 Obligations of grid owners**

- (1) A **grid owner** must use reasonable endeavours to ensure that appropriate **assets** are installed for the manual **electrical disconnection of demand at points of connection**.
- (2) A **grid owner** must take independent action as may be required by the **system operator** in accordance with clause 6(4), to **electrically disconnect demand at points of connection** when any **grid** voltage reaches the minimum voltage limit set out in the table contained in clause 8.22(1) and is sustained at or below that level. A **grid owner** must continue to **electrically disconnect demand at points of connection** while the voltage remains below that minimum voltage limit, being guided by any arrangements with **connected asset owners** as advised by the **system operator**.

Compare: Electricity Governance Rules 2003 clause 7 technical code B schedule C3 part C

Clause 8(2): amended, on 1 February 2016, by clause 22 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Clause 8(1) and (2): amended, on 5 October 2017, by clause 128(1) and (2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

- 9 Obligations of generators and ancillary service agents to take independent action**  
The following independent action is required of **generators** and **ancillary service agents** during the occurrence of extreme variations of frequency or voltage at the **points of connection** to which their **assets** are connected (such extreme levels of frequency or voltage are deemed to constitute a **grid emergency** and require a fast and independent response from each **generator** and each **ancillary service agent**):
- (a) when the **under-frequency limit** is reached and the frequency continues to fall, each **generator** must use reasonable endeavours to take the following immediate independent action to assist in restoring frequency:
    - (i) increase the energy **injection** from each **generating unit** that is physically capable of increasing such **injection**;
    - (ii) attempt to restore **grid** frequency to the **normal band** by **synchronising** and loading each **generating unit** that is not **electrically connected** but is able to be **electrically connected** and operated in this manner;
    - (iii) **re-synchronise** and load each **generating unit** that has tripped and is able to be **electrically connected** and operated in this manner;
    - (iv) report to the **system operator** as soon as practicable after taking action in accordance with subparagraphs (i) to (iii):
  - (b) when the **over frequency limit** is reached and the frequency continues to rise, each **generator** must use reasonable endeavours to take the following immediate independent action to assist in restoring frequency:
    - (i) decrease the energy injection from **electrically connected generating units** if the **generator** is physically capable of decreasing such **injection**;
    - (ii) report to the **system operator** as soon as practicable after taking action in accordance with subparagraph (i):
  - (c) when either the minimum voltage limit or the maximum voltage limit set out in the table contained in clause 8.22(1) is exceeded at any **point of connection**, **generators** and **ancillary service agents** must use reasonable endeavours to take immediate independent action to return the voltage to, as close as practicable, within such limits. Each **generator** must use reasonable endeavours to **synchronise** and, as necessary, load and adjust all available **generating units** that can assist in restoring the voltage. **Ancillary service agents** must also use reasonable endeavours to **electrically connect** to the **grid** and, as necessary, load all available **reactive capability** resources, that can assist in restoring the voltage. As soon as practicable after taking such actions, each **generator** and **ancillary service agent** must report to the **system operator** on the action taken to correct voltage:
  - (d) for a **loss of communication** with the **system operator**, lasting at least 5 minutes, each **generator** must use reasonable endeavours to—
    - (i) for **synchronised generating units**, take independent action to adjust supply to maintain frequency as close as possible to the **normal band**, and maintain voltage as close as possible either to that previously advised by the **system operator**, or as can be best established by the **generator**; and

- (ii) **synchronise** available **generating units** to the **grid** if the **generating units** currently **electrically connected** do not have the capacity to control the frequency and voltage as required by paragraph (e)(i); and
  - (iii) continue to attempt to maintain the frequency and voltage to meet the requirements of paragraph (e)(i); and
  - (iv) as soon as practicable after communications are restored, report to the **system operator** on the action taken:
- (e) for a **loss of communication** with the **system operator** lasting at least 5 minutes, **ancillary service agents** must use reasonable endeavours to—
- (i) if on load, take independent action to adjust any real or **reactive power** resources to maintain frequency and voltage as close as possible either to that previously advised by the **system operator** or as can be best established by the **ancillary service agent**; and
  - (ii) **electrically connect** available **reactive capability** resources to the **grid** if the currently **electrically connected reactive power** resources do not have the capacity to control the voltage above the minimum limit set out in the table contained in clause 8.22(1); and
  - (iii) continue to attempt to maintain the voltage above the minimum limit set out in the table contained in clause 8.22(1); and
  - (iv) as soon as practicable after communications are restored, report to the **system operator** on the action taken:
- (f) in the event of a failure at the **system operator's** operational centre that disables the main **dispatch** or communication systems, the **system operator** may temporarily transfer its operational activities to an alternative operational centre, and the **system operator** must arrange for communication facilities to transfer to the new location and must give written notice to **participants** of those arrangements.

Compare: Electricity Governance Rules 2003 clause 8 technical code B schedule C3 part C  
Clause 9: amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.  
Clause 9: amended, on 5 October 2017, by clause 129 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

*Technical Code C – Operational communications*

**1 Purpose**

The purpose of this **technical code** is to state the minimum requirements for the communications required under this Code between **asset owners**, except owners of **excluded generating stations**, and the **system operator**, in order to assist the **system operator** to plan to comply, and to comply, with the **principal performance obligations**. Additional requirements may be set out in other clauses. This **technical code** does not deal with the content of communications, which is dealt with in each **technical code** and in Part 13 where relevant.

Compare: Electricity Governance Rules 2003 clause 1.1 technical code C schedule C3 part C

**2 Application**

This **technical code** applies to the **system operator** and to all **asset owners** except owners of **excluded generating stations**. If the **system operator** reasonably considers it necessary to assist the **system operator** in planning to comply, and complying, with the **principal performance obligations**, the **system operator** may require that an **excluded generating station** comply with some or all of the requirements of this **technical code**.

Compare: Electricity Governance Rules 2003 clause 1.2 technical code C schedule C3 part C

**3 General requirements for operational communications**

- (1) Each voice or electronic communication between the **system operator** and an **asset owner** must be logged by the **system operator** and the **asset owner**. Unless otherwise agreed between the **system operator** and the **asset owner**, every voice instruction must be repeated back by the person receiving the instruction and confirmed by the person giving the instruction before the instruction is actioned.
- (2) The **system operator** and each **asset owner** must nominate and advise each other of the preferred points of contact and the alternative points of contact to be used by the **system operator** and the **asset owner**. Each **asset owner** must also nominate and advise the **system operator** of the person to receive instructions and **formal notices** as set out in **Technical Code B**. The preferred points of contact must include those to be used when the **system operator** instructs the **asset owner**, when the **system operator** sends **formal notices** to the **asset owner** and when the **asset owner** contacts the **system operator**. The alternative points of contact must be used only if the preferred points of contact are not available.
- (3) The **grid owner** and each other **asset owner** must nominate and advise each other of the preferred points of contact and the alternative points of contact to be used by the **grid owner** and the other **asset owner** for the purpose of communications regarding the availability of the **grid owner's** data transmission communications. The alternative points of contact must only be used if the preferred points of contact are not available.

Compare: Electricity Governance Rules 2003 clause 2 technical code C schedule C3 part C

#### 4 Specific requirements for voice communication

- (1) Each **asset owner** must have in place a primary means of communicating by voice between the **control room** of the **asset owner** and the **system operator**. The primary means of voice communication must use either—
  - (a) the **grid owner's** speech network; or
  - (b) a widely available public switched telephone network that operates in real time and in full duplex mode.
- (2) Each **asset owner** must have in place a backup means of communicating by voice between the **control room** of the **asset owner** and the **system operator**. The backup means of voice communication—
  - (a) must be approved by the **system operator** (such approval not to be unreasonably withheld); and
  - (b) may include, but is not limited to, satellite phone or cellular phone; and
  - (c) may be used only if the primary means of voice communication described in subclause (1) is unavailable or otherwise with the agreement of the **system operator**.
- (3) An **asset owner** who has a **control room** with, at any time, operational control of more than 299 MW of **injection, offtake**, or power flow must have 2 or more back up means of voice communication between the **control room** of the **asset owner** and the **system operator**, each of which must meet the requirements of subclause (2).

Compare: Electricity Governance Rules 2003 clause 3 technical code C schedule C3 part C

#### 5 Specific requirements for transmitting information

- (1) Each **asset owner** must transmit information between its **control room** and the **system operator** in writing.
- (2) Despite subclause (1), an **asset owner** may request the **system operator** to approve an alternative means of transmitting information (such approval not to be unreasonably withheld).
- (3) Each **asset owner** must have in place a backup means of transmitting information. The backup means of transmitting information—
  - (a) must be approved by the **system operator** (such approval not to be unreasonably withheld); and
  - (b) may include, but is not limited to, voice communication or email; and
  - (c) may only be used if the primary means of transmitting information described in subclause (1) or (2) is unavailable or otherwise with the agreement of the **system operator**.

Compare: Electricity Governance Rules 2003 clause 4 technical code C schedule C3 part C

Heading: amended, on 5 October 2017, by clause 130(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 5(1): replaced, on 5 October 2017, by clause 130(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 5(2) and (3): amended, on 5 October 2017, by clause 130(3) and (4) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.



## **6 Specific requirements for data transmission communication**

- (1) Each **asset owner** (other than a **grid owner**) must have in place—
  - (a) a primary means of transmitting data between the **assets** of the **asset owner** and a **SCADA** remote terminal unit of a **grid owner**; or
  - (b) if approved by the **system operator** (such approval not to be unreasonably withheld), a primary means of transmitting data between the **assets** of the **asset owner** and the **system operator**.
- (2) A **grid owner** must have in place a primary means of transmitting data between the **assets** of the **grid owner** and the **system operator**.
- (3) Each **asset owner** must have in place a backup means of transmitting data for each type of indication and measurement specified in Appendix A of this **technical code**. The backup means of data transmission communication—
  - (a) must be approved by the **system operator** (such approval not to be unreasonably withheld); and
  - (b) may include, but is not limited to, use of voice communication or document transmission communication; and
  - (c) may only be used if the primary means of data transmission communication described in subclause (1) or (2) is unavailable or otherwise with the agreement of the **system operator**.

Compare: Electricity Governance Rules 2003 clause 5 technical code C schedule C3 part C

## **7 Availability of primary means of communication**

- (1) Each **asset owner** must use reasonable endeavours to ensure that the primary means of communication described in clauses 4(1), 5(1) or (2), and 6(1) or (2) is available continuously.
- (2) If the primary means of communication described in clauses 4(1), 5(1) or (2), and 6(1) or (2) is unavailable, an **asset owner** must use reasonable endeavours to restore availability of the primary means of communication as soon as practicable.

Compare: Electricity Governance Rules 2003 clause 6 technical code C schedule C3 part C

## **8 Notice of planned outages of primary means of communication**

Each **asset owner** must give written notice to the **system operator** of any planned outage of a primary means of communication described in clauses 4(1), 5(1) or (2), and 6(1) or (2).

Compare: Electricity Governance Rules 2003 clause 7 technical code C schedule C3 part C

Clause 8 heading: amended, on 1 November 2018, by clause 16 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2018.

Clause 8: amended, on 5 October 2017, by clause 131 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **9 Performance requirements for indications and measurements**

- (1) Each **asset owner** must provide the relevant indications and measurements shown in Appendix A to the **system operator**, in accordance with clause 6. The **system operator** may require the **asset owner** to provide additional information if, in the reasonable opinion of the **system operator**, such information is required for the **system operator** to plan to comply, and to comply, with its **principal performance obligations**.

- (2) The **asset owner** must use reasonable endeavours to ensure that the accuracy of the measurements it provides to the **system operator** in accordance with subclause (1) complies with Appendix A.
- (3) Each indication and measurement provided in accordance with subclause (1) must be updated at the **grid owner's SCADA** remote terminal or the **system operator's** interface unit at least once every 8 seconds when provided by the primary means of data transmission communications.

Compare: Electricity Governance Rules 2003 clause 8 technical code C schedule C3 part C

*Appendix A: Indications and Measurements  
(Clause 9(1)-(3) of Technical Code C)*

**Table A1: Requirements of generators**

Each **generator** must provide the indications and measurements in Table A1. If net (or gross) measurements are required in Table A1, the use of **scaling factors** together with the provision of the relevant gross (or net) values is acceptable with the **system operator's** approval. Each **generator** must provide **scaling factors** to the **grid owner** so that the **grid owner** can apply the adjustment at the **SCADA** server.

Indication or measurement	Values required	Accuracy <sup>3</sup>
<b>Station net MW</b>	Import and export	±2%
<b>Generating unit gross MW<sup>1</sup></b>	Import and export, for each <b>generating unit</b>	±2%
<b>Station net Mvar</b>	Import and export	±2%
<b>Generating unit gross Mvar<sup>1</sup></b>	Import and export, for each <b>generating unit</b>	±2%
<b>Generating unit circuit breaker status<sup>1</sup></b>	Open /closed /in transition/ indication error <sup>2</sup>	N/A
<b>Grid interface circuit breaker status</b>	Open /closed /in transition/ indication error <sup>2</sup>	N/A
<b>Grid interface disconnecter status</b>	Open /closed /in transition/ indication error	N/A
<b>Special protection scheme status</b>	Enabled/disabled/summer/winter	N/A
Maximum output capacity of <b>generating station (for intermittent generators only)</b>	Number of connected <b>generating units</b> × <b>MW</b> capability of each <b>generating unit</b>	N/A

Compare: Electricity Governance Rules 2003 table A1 appendix A technical code C schedule C3 part C

Table A1: amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Table A1: amended, on 5 October 2017, by clause 132 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

**Table A2: Requirements of grid owners:**

Each **grid owner** must provide the indications and measurements shown in Table A2 in respect of **assets** connected to, or forming part of, the **grid**.

Indication or measurement	Values required	Accuracy <sup>3</sup>
<b>Grid interface circuit breaker status</b>	Open /closed /in transition/ indication error <sup>2</sup>	N/A
<b>Grid interface disconnecter status</b>	Open/ closed/ in transition/ closed to earth/ indication error	N/A
<b>Grid interface auto reclose status</b>	Enabled/disabled/ operated/locked out	N/A
<b>Grid interface MW</b>	Import and export	±2%

Indication or measurement	Values required	Accuracy <sup>3</sup>
<b>Grid interface</b> Mvar	Import and export	±2%
Circuit Amps	Current at each termination point of a circuit	N/A
Circuit MW	MW at each termination point of a circuit	N/A
Circuit Mvar	Mvar at each termination point of a circuit	N/A
<b>Special protection scheme</b> status	Enabled/disabled/summer/winter	N/A
Tap positions for <b>interconnecting transformers</b> and supply transformers with on-load tap changers	Tap position for all windings including tapped tertiaries	N/A
Tap positions for <b>interconnecting transformers</b> and supply transformers with off-load tap changers <sup>4</sup>	Tap position for all windings including tapped tertiaries	N/A
Reactive plant (eg RPC equipment, capacitor, reactor, condenser) Mvar	Import and export	±2%
Bus voltage	kV	±2%
<b>Special protection scheme</b> status	Enabled/disabled/summer/winter	N/A
HVDC modulation status	Frequency stabiliser/ spinning reserve sharing/ Haywards frequency control/ AC transient voltage support	N/A

Compare: Electricity Governance Rules 2003 table A2 appendix A technical code C schedule C3 part C

Table A2: amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Table A2: amended, on 5 October 2017, by clause 133 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

### Table A3: Requirements of connected asset owners

Each **connected asset owner** must provide the indications and measurements shown in Table A3 in respect of **assets** connected to, or forming part of, the **grid**.

Indication or measurement	Values required	Accuracy <sup>3</sup>
<b>Grid interface circuit breaker</b> status	Open/ closed/ in transition/ indication error <sup>2</sup>	N/A
<b>Grid interface</b> disconnecter status	Open/ closed/ in transition/ indication error	N/A
<b>Grid interface</b> auto reclose status	Enabled/disabled/operated/locked out	N/A
<b>Special protection scheme</b> status	Enabled/disabled/summer/winter	N/A
Reactive plant <sup>5</sup> (eg RPC equipment, capacitor, reactor, condenser) Mvar	Import and export	±2%

Table A3 Heading: amended, on 1 February 2016, by clause 23(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Table A3: amended, on 23 February 2015, by clause 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Table A3: amended, on 1 February 2016, by clause 23(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2015.

Table A3: amended, on 5 October 2017, by clause 134 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

- <sup>1</sup> Required only if a **generating unit** has a maximum continuous rating of greater than 5 **MW**.
- <sup>2</sup> No intentional time delays should be included for **circuit breaker** indications as these are time tagged by the **system operator** to less than 10 ms.
- <sup>3</sup> If accuracy is measured at the input terminal of the RTU of the **grid owner**, under normal operating conditions at full scale.
- <sup>4</sup> Indication required within 5 minutes of status change.
- <sup>5</sup> Required only if reactive plant has a maximum continuous rating of greater than 5 Mvar.

Compare: Electricity Governance Rules 2003 table A3 appendix A technical code C schedule C3 part C

*Technical Code D – Co-ordination of outages affecting common quality*

**1 Purpose**

The purpose of this **technical code** is to set out the obligations of **asset owners** to give written notice of planned outages of **assets** that affect **common quality**, and to set out the obligations of the **system operator** in relation to outage co-ordination and the provision of timely advice to **asset owners** on the security implications of **notified planned outages**.

Compare: Electricity Governance Rules 2003 clause 1 technical code D schedule C3 part C  
Clause 1: amended, on 5 October 2017, by clause 135 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

**2 Notice of planned outages**

- (1) Each **asset owner** must, in relation to each of its **assets**, give written notice to the **system operator** as soon as practicable of all planned outages of such **assets** if such outages may impact on the **system operator's** ability to plan to comply, and to comply, with the **principal performance obligations**.
- (2) If the **asset owner** is unsure whether an outage of an **asset** may impact on the **system operator's** ability to plan to comply, and to comply, with the **principal performance obligations**, the **asset owner** must contact the **system operator** for advice.
- (3) Each **asset owner** must give written notice to the **system operator** up to 12 months ahead of planned outages and update the **system operator** of changes to the planned outages as and when the **asset owner** becomes aware of them.

Compare: Electricity Governance Rules 2003 clause 2 technical code D schedule C3 part C  
Heading: amended, on 5 October 2017, by clause 136(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.  
Clause 2(1) and (3): amended, on 5 October 2017, by clause 136(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

**3 Assessment of notified planned outages**

The **system operator** must assess all **notified planned outages** and the extent to which they impact on the **system operator's** ability to plan to comply, and to comply with the **principal performance obligations**.

Compare: Electricity Governance Rules 2003 clause 3 technical code D schedule C3 part C

**4 Assets may be requested to remain in service**

The **system operator** may request that an **asset owner** of **assets** that are the subject of a **notified planned outage** keep those **assets** in service until a more suitable time, if such outage would, in the reasonable opinion of the **system operator**, adversely affect the **system operator's** ability to plan to comply, and to comply, with the **principal performance obligations**. The **system operator** may propose a suitable alternative time for the **notified planned outage**.

Compare: Electricity Governance Rules 2003 clause 4 technical code D schedule C3 part C

**5 Asset owners to assist security**

- (1) An **asset owner** must endeavour to programme its **notified planned outage** at a time when there will be no disruption to the **system operator's** ability to plan to comply, and

to comply, with the **principal performance obligations**.

- (2) The **system operator** may advise an **asset owner** when an appropriate time would be.
- (3) If an **asset owner** is able to modify the **notified planned outage** period for an **asset** in the manner suggested by the **system operator** without material cost or disruption, the **asset owner** must endeavour to do so.

Compare: Electricity Governance Rules 2003 clause 5 technical code D schedule C3 part C

## **6 Asset outage programme**

The **system operator** must regularly publish an **asset** outage programme containing all **notified planned outage** information provided by the **asset owners**.

Compare: Electricity Governance Rules 2003 clause 6 technical code D schedule C3 part C

## **7 Assets may be requested to return to service**

The **system operator** may request an **asset owner** to terminate a **notified planned outage** in progress within a pre-arranged period so that **assets** that are the subject of the **notified planned outage** can be returned to service to support the **system operator** in planning to comply, and in complying, with the **principal performance obligations**.

Compare: Electricity Governance Rules 2003 clause 7 technical code D schedule C3 part C

**Schedule 8.4**  
***[Revoked]***

cl 7.2

Compare: Electricity Governance Rules 2003 schedule C6 part C  
Schedule 8.4: revoked, on 19 May 2016, by clause 30 of the Electricity Industry Participation Code Amendment (System Operator and Alignment with Statutory Objective) 2016.



## Schedule 8.5

cl 8.54D(7), 8.54E(4)(b), 8.54F(2)(b)(ii),  
8.54G(4), 8.54I(2), 8.54J(8), (9)

### Consultation and approval requirements for extended reserve procurement documents

#### Part 1

#### Consultation on extended reserve technical requirements schedule

##### 1 Application of this Part

This Part sets out the consultation requirements that apply to the **extended reserve technical requirements schedule**.

##### 2 Publication of extended reserve technical requirements schedule

- (1) The **system operator** must prepare a draft of the **extended reserve technical requirements schedule**.
- (2) The **system operator** must give the draft schedule to the **Authority** for comment, along with the **extended reserve technical requirements report**.
- (3) The **Authority** must provide comments on the draft schedule to the **system operator** as soon as practicable after receiving it.
- (4) The **system operator** must consider the **Authority's** comments.
- (5) After the **system operator** has considered the **Authority's** comments, the **system operator** must—
  - (a) consult with persons that the **system operator** thinks are representative of the interests of persons likely to be substantially affected by the draft schedule; and
  - (b) consider submissions made on the draft schedule.
- (6) The **system operator** must give a copy of each submission made to it and a copy of the draft schedule that the **system operator** proposes to **publish** to the **Authority**.
- (7) The **Authority** must provide comments on the draft schedule as soon as practicable after receiving it.
- (8) The **system operator** must consider the **Authority's** comments.
- (9) Following the consultation required by this clause, the **system operator** must finalise and **publish** the draft schedule.

##### 3 Technical and non-controversial changes

- (1) The **system operator** may at any time make a change to the **extended reserve technical requirements schedule** that it considers is technical and non-controversial.
- (2) If the **system operator** makes a change to the **extended reserve technical requirements schedule** under subclause (1), the **system operator** is not required to comply with clause 2 of this Schedule.
- (3) The **system operator** must give written notice to the **Authority** of any changes to the **extended reserve technical requirements schedule** made under this clause.

Clause 3(3): amended, on 19 December 2014, by clause 16 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 3(3): amended, on 5 October 2017, by clause 137 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## Part 2

### Consultation on extended reserve selection methodology

#### 4 Application of this Part

This Part sets out the consultation and approval requirements that apply to the **extended reserve selection methodology**.

#### 5 Preparation of and consultation on extended reserve selection methodology

- (1) The **extended reserve manager** must prepare a draft of the **extended reserve selection methodology**.
- (2) The **extended reserve manager** must give the draft methodology to the **Authority** and the **system operator** for comment, along with one or more worked examples of an **extended reserve procurement schedule**, created using—
  - (a) the draft **extended reserve selection methodology**; and
  - (b) data specified by the **system operator**.
- (3) The **Authority** and the **system operator** must provide comments on the draft methodology to the **extended reserve manager** as soon as practicable after receiving it.
- (4) The **extended reserve manager** must consider the comments provided by the **Authority** and the **system operator**.
- (5) After the **extended reserve manager** has considered the comments provided by the **Authority** and the **system operator**, the **extended reserve manager** must—
  - (a) consult with persons that the **extended reserve manager** thinks are representative of the interests of persons likely to be substantially affected by the draft methodology; and
  - (b) consider submissions made on the draft methodology.

#### 6 Approval of extended reserve selection methodology

- (1) The **extended reserve manager** must give the **Authority** and the **system operator**—
  - (a) a copy of each submission made on the draft **extended reserve selection methodology**; and
  - (b) a response to each issue raised in each submission; and
  - (c) a copy of the draft methodology that the **extended reserve manager** proposes to **publish**.
- (2) As soon as practicable, but no later than 15 **business days** after receiving a copy of the draft methodology, the **system operator** must—
  - (a) give the **Authority** any comments it wishes to make on the draft methodology; or
  - (b) advise the **Authority** that it does not wish to make any comments.
- (3) As soon as practicable after receiving the **system operator's** comments, or advice that the **system operator** does not wish to make any comments, the **Authority** must, by notice in writing to the **extended reserve manager** and the **system operator**,—
  - (a) approve the draft methodology; or

- (b) decline to approve the draft methodology.
  - (4) If the **Authority** declines to approve the draft methodology, the **Authority** must either—
    - (a) **publish** the changes that the **Authority** wishes the **extended reserve manager** to make to the draft methodology; or
    - (b) require the **extended reserve manager** to prepare a new draft methodology.
- Clause 6(4)(a): amended, on 5 October 2017, by clause 138 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## 7 Consultation on proposed changes

- (1) When the **Authority publishes** changes that the **Authority** wishes the **extended reserve manager** to make to the draft **extended reserve selection methodology** under clause 6(4), the **Authority** must advise the **extended reserve manager** and interested parties of the date by which submissions on the changes must be made to the **Authority**.
- (2) Each submission on the changes to the draft methodology must be made in writing to the **Authority** and be received by the date specified by the **Authority**.
- (3) The **Authority** must—
  - (a) give a copy of each submission made to the **extended reserve manager**; and
  - (b) **publish** the submissions.
- (4) The **extended reserve manager** may make its own submission on the changes to the draft methodology and the submissions made in relation to the changes.
- (5) The **Authority** must **publish** the **extended reserve manager's** submission when it is received.
- (6) The **Authority** must consider the submissions made to it on the changes to the draft methodology and prepare a revised draft methodology incorporating any amendments that the **Authority** proposes be made to the methodology.
- (7) The **Authority** must give the revised draft methodology prepared under subclause (6) to the **system operator**, and clause 6(2) applies as if the revised draft methodology was the draft methodology prepared under clause 5.
- (8) As soon as practicable after receiving the **system operator's** comments, or advice that the **system operator** does not wish to make any comments, the **Authority** must,—
  - (a) by notice in writing to the **extended reserve manager** and the **system operator**,—
    - (i) approve the revised draft methodology; or
    - (ii) amend the revised draft methodology to address any comments received from the **system operator**, and approve it; or
  - (b) **publish** a further revised draft methodology, and advise the **extended reserve manager** and interested parties of the date by which submissions on the changes must be made to the **Authority**.
- (9) If the **Authority publishes** a further revised draft methodology under subclause (8)(b), subclauses (2) to (8) apply as if the further revised draft methodology was the revised draft methodology.

Clause 7(1): amended, on 19 December 2014, by clause 17 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 7(1) and (9): amended, on 5 October 2017, by clause 139(1) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 7(3)(b), (5) and (8)(b): amended, on 5 October 2017, by clause 139(2) of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 7(8)(b): amended, on 19 December 2014, by clause 17 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

## **8 Technical and non-controversial changes**

- (1) The **extended reserve manager** may at any time propose a change to the **extended reserve selection methodology** that it considers is technical and non-controversial by giving a draft methodology to the **Authority** together with an explanation of the proposed change.
- (2) If the **extended reserve manager** gives a draft methodology to the **Authority** under subclause (1) the **extended reserve manager** is not required to comply with clauses 5 and 6 of this Schedule.
- (3) The **Authority** must give written notice to the **system operator** of any proposed change to the **extended reserve selection methodology** that it receives under subclause (1).
- (4) The **Authority** must, as soon as practicable after receiving a draft methodology and the information required by subclause (1), by notice in writing to the **extended reserve manager** and the **system operator**—
  - (a) approve the draft methodology; or
  - (b) decline to approve the draft methodology, giving reasons.

Clause 8(3): amended, on 19 December 2014, by clause 18 of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 8(3): amended, on 5 October 2017, by clause 140 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **9 Publication of extended reserve selection methodology**

As soon as practicable after the **Authority** approves the **extended reserve selection methodology** under clause 6(3)(a), 7(8)(a), or 8(4)(a), the **extended reserve manager** must **publish** the methodology.

Clause 9: amended, on 5 October 2017, by clause 141 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **Part 3**

### **Consultation on extended reserve procurement schedule**

#### **10 Application of this Part**

This sets out the consultation and approval requirements that apply to the **extended reserve procurement schedule**.

#### **11 Preparation of and consultation on extended reserve procurement schedule**

- (1) The **extended reserve manager** must prepare a draft of the **extended reserve procurement schedule**.
- (2) The **extended reserve manager** must—
  - (a) give the draft to the **Authority** and the **system operator** for comment; and
  - (b) if requested, give the **Authority** or the **system operator** the information used by the **extended reserve manager** to prepare the draft.

- (3) The **Authority** and the **system operator** must provide comments on the draft procurement schedule to the **extended reserve manager** as soon as practicable after receiving it.
- (4) The **extended reserve manager** must consider the comments provided by the **Authority** and the **system operator**.
- (5) After the **extended reserve manager** has considered the comments provided by the **Authority** and the **system operator**, the **extended reserve manager** must—
  - (a) consult with persons that the **extended reserve manager** thinks are representative of the interests of persons likely to be substantially affected by the draft procurement schedule; and
  - (b) consider submissions made on the draft procurement schedule.

## **12 Approval of extended reserve procurement schedule**

- (1) The **extended reserve manager** must give the **Authority** and the **system operator**—
  - (a) a copy of each submission made on the draft **extended reserve procurement schedule**; and
  - (b) a response to each issue raised by each submission; and
  - (c) a copy of the draft procurement schedule that the **extended reserve manager** proposes to **publish**.
- (2) As soon as practicable, but no later than 15 **business days** after receiving a copy of the draft procurement schedule, the **system operator** must—
  - (a) give the **Authority** any comments it wishes to make on the draft procurement schedule; or
  - (b) advise the **Authority** that it does not wish to make any comments.
- (3) As soon as practicable after receiving the **system operator's** comments, or advice that the **system operator** does not wish to make any comments, the **Authority** must, by notice in writing to the **extended reserve manager** and the **system operator**,—
  - (a) approve the draft procurement schedule; or
  - (b) decline to approve the draft procurement schedule.
- (4) If the **Authority** declines to approve the draft procurement schedule, the **Authority** must either—
  - (a) **publish** the changes that the **Authority** wishes the **extended reserve manager** to make to the draft procurement schedule; or
  - (b) require the **extended reserve manager** to prepare a new draft procurement schedule.

Clause 12(4)(a): amended, on 5 October 2017, by clause 142 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

## **13 Consultation on proposed changes**

- (1) When the **Authority publishes** changes that the **Authority** wishes the **extended reserve manager** to make to the draft **extended reserve procurement schedule** under clause 12(4), the **Authority** must advise the **extended reserve manager** and interested parties of the date by which submissions on the changes must be made to the **Authority**.
- (2) Each submission on the changes to the draft procurement schedule must be made in

- writing to the **Authority** and be made by the date advised by the **Authority**.
- (3) The **Authority** must—
    - (a) give a copy of each submission made to the **extended reserve manager**; and
    - (b) **publish** the submissions.
  - (4) The **extended reserve manager** may make its own submission on the changes to the draft procurement schedule and the submissions made in relation to the changes.
  - (5) The **Authority** must **publish** the **extended reserve manager's** submission when it is received.
  - (6) The **Authority** must consider the submissions made to it on the changes to the draft procurement schedule and prepare a revised draft procurement schedule incorporating any amendments that the **Authority** proposes be made to the schedule.
  - (7) The **Authority** must give the revised draft procurement schedule prepared under subclause (6) to the **system operator**, and clause 12(2) applies as if the revised draft procurement schedule was the draft procurement schedule prepared under clause 11.
  - (8) As soon as practicable after receiving the **system operator's** comments, or advice that the **system operator** does not wish to make any comments, the **Authority** must,—
    - (a) by notice in writing to the **extended reserve manager** and the **system operator**,—
      - (i) approve the revised draft procurement schedule; or
      - (ii) amend the revised draft procurement schedule to address any comments received from the **system operator**, and approve it; or
    - (b) **publish** a further revised draft procurement schedule, and advise the **extended reserve manager** and interested parties of the date by which submissions on the changes must be made to the **Authority**.
  - (9) If the **Authority publishes** a further revised draft procurement schedule under subclause (8)(b), subclauses (2) to (8) apply as if the further revised draft procurement schedule was the revised procurement schedule.

Clause 13(1) and (8)(b): amended, on 19 December 2014, by clause 19(1) of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 13(2): amended, on 19 December 2014, by clause 19(2) of the Electricity Industry Participation Code Amendment (Minor Code Amendments) (No 3) 2014.

Clause 13(1), (3)(b), (5), (8)(b) and (9): amended, on 5 October 2017, by clause 143 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

#### **14 Publication of extended reserve procurement schedule**

As soon as practicable after the **Authority** approves the **extended reserve procurement schedule** under clause 12(3)(a) or 13(8)(a), the **extended reserve manager** must **publish** the schedule.

Schedule 8.5: inserted, on 7 August 2014, by clause 22 of the Electricity Industry Participation Code Amendment (Extended Reserve) 2014.