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

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—
(a) complete and accurate; and
(b) not misleading or deceptive; and
(c) 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.


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

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]
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

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.


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.

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).


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


**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.


**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(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.


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.

8.13 [Revoked]
Compare: Electricity Governance Rules 2003 rule 12 section II part C

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

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
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


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

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

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.

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:

<table>
<thead>
<tr>
<th>Nominal grid voltage (kV)</th>
<th>Voltage limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum (kV)</td>
</tr>
<tr>
<td>220</td>
<td>198</td>
</tr>
<tr>
<td></td>
<td>-10.0%</td>
</tr>
<tr>
<td>110</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>-10.0%</td>
</tr>
<tr>
<td>66</td>
<td>62.7</td>
</tr>
<tr>
<td></td>
<td>-5.0%</td>
</tr>
<tr>
<td>50</td>
<td>47.5</td>
</tr>
<tr>
<td></td>
<td>-5.0%</td>
</tr>
</tbody>
</table>

(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).
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:

<table>
<thead>
<tr>
<th>Nominal grid voltage (kV)</th>
<th>Voltage range for which reactive power is required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum (kV)</td>
</tr>
<tr>
<td>220</td>
<td>198</td>
</tr>
<tr>
<td>110</td>
<td>99</td>
</tr>
<tr>
<td>66</td>
<td>62.7</td>
</tr>
<tr>
<td>50</td>
<td>47.5</td>
</tr>
<tr>
<td>33</td>
<td>31.35</td>
</tr>
<tr>
<td>22</td>
<td>21.45</td>
</tr>
<tr>
<td>11</td>
<td>10.725</td>
</tr>
</tbody>
</table>

(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:

<table>
<thead>
<tr>
<th>Nominal grid voltage (kV)</th>
<th>Voltage range for which reactive power is required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum (kV)</td>
</tr>
<tr>
<td>220</td>
<td>209</td>
</tr>
<tr>
<td>110</td>
<td>104.5</td>
</tr>
<tr>
<td>66</td>
<td>62.7</td>
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(c) when synchronised, continuously operate in a manner that supports voltage and voltage stability on the grid in compliance with the technical codes.
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

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) 2015.

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
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.


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).


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.


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

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

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.
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:

\[
\text{DispCost}_{\text{GENxt}} = 0.5 \times Q_{\text{GENxt}} \times P_{\text{IRt}}
\]

where

\(\text{DispCost}_{\text{GENxt}}\) 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.
**Electricity Industry Participation Code 2010**

**Part 8**

Q\(_{\text{GEN}xt}\) 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).

\(P_{\text{IR}t}\) 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(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

**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 AOPOs 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

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

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]

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

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.


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.


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).


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

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.


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
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.


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.


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.


#### 8.46 [Revoked]

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


### 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


### 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

Subpart 4—Interruptible load


8.54A Contents of this subpart

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

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) 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


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.

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).

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.

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.


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—

(a) set out the results of the selection process; and

(b) identify the asset owners that are required to be extended reserve providers; and

(c) specify the extended reserve to be provided; and

(d) include information as to how the amounts payable (if any) to each extended reserve provider will be calculated; and

(e) 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.


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(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.

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.


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.


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.

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 January 2017, by clause 10(1) of the Electricity Industry Participation Code Amendment (Extended Reserve) 2016.
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.

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.


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).


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.

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.

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.

Information required for transitional purposes

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.


Transitional provisions—extended reserve


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.

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).


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

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
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:

\[
\text{Share}_{\text{PURx}} = \frac{F_c \times \max(0, \sum_t (\text{Offtake}_{\text{PURxt}} - E^{FK}_{\text{PURxt}}))}{\sum_x \max(0, \sum_t (\text{Offtake}_{\text{PURxt}} - E^{FK}_{\text{PURxt}}))}
\]

where

- \(\text{Share}_{\text{PURx}}\) is purchaser x’s share of allocable cost in relation to frequency keeping
- \(F_c\) is the allocable cost of frequency keeping services in the billing period
- \(\text{Offtake}_{\text{PURxt}}\) is the total reconciled quantity in kWh for purchaser x across all grid exit points in trading period t in the billing period
- \(E^{FK}_{\text{PURxt}}\) 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:

\[
\text{Share}_t = \frac{A_c \times m_t}{M_t}
\]

where
Share_t is the availability cost allocated to a generator who owns generating unit x or to the HVDC link for trading period t for the North Island or South Island as appropriate.

A_{c_t} is the availability cost for the North Island or South Island as appropriate incurred in respect of trading period t.

\[ m_t = \begin{cases} \max(0, \text{INJGEN}_{xt} - (h \times \text{INJ}_D) - E^{\text{IR}}_{\text{GEN}_{xt}}) = m_{xt} & \text{for any generating unit} \\ \max(0, \text{HVDCRisk}_{t} - (h \times \text{INJ}_D) - E^{\text{IR}}_{\text{HVDC}_{t}}) = m_{ht} & \text{for the HVDC link} \end{cases} \]

\[ M_t = \sum x m_{xt} + m_{ht} \]

h is 0.5 MWh/MW.

INJ_{GEN_{xt}} is the electricity injected (expressed in MWh) by generating unit x in trading period t into the North Island or South Island as appropriate.

E^{\text{IR}}_{\text{GEN}_{xt}} is the quantity of any instantaneous reserve provided under any alternative ancillary service arrangements for instantaneous reserve authorised by the system operator for generating unit x in trading period t.

HVDC_{Risk_{t}} is the at risk HVDC transfer (expressed in MWh) in trading period t into the North Island or South Island as appropriate.

E^{\text{IR}}_{\text{HVDC}_{t}} is the quantity of any instantaneous reserve provided under any alternative ancillary service arrangement for instantaneous reserve authorised by the system operator for at risk HVDC transfer in trading period 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(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.

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(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

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

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 * (∑y (INT ye for all y) - INJD)

where

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

ECR is $1,250 per MW

INJD is 60 MW

INT ye 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

**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:

\[
\text{Rebate}_{xe} = EC_e \times \frac{Z_{xe}}{Z_{tote}}
\]

where

Rebatexe 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

ECe is the **event charge** paid for Event e

Zxe 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**

Ztote 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.
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:

\[ \text{NomCharge}_{xz} = \text{PeakRate}_z \times \sum_j Q_{xjz} \]

where

- \( \text{NomCharge}_{xz} \) is the total nominated peak charges for connected asset owner \( x \) in zone \( z \)
- \( \text{PeakRate}_z \) is the fixed $/kvar set annually in advance by system operator for zone \( z \)
- \( Q_{xjz} \) 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:

\[ \text{PeakPenaltyCharge}_{\text{LINE}xz} = \text{PenaltyRate}_z \times \sum_j \text{PenaltyQuantity}_{\text{LINE}xjz} \]

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 \( j \) of 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:

\[
\text{Residual}_{\text{ALLZ}} = \text{Vcost}_z - \text{Nom Charge}_{\text{ALLZ}} - \text{PeakPenaltyCharge}_{\text{ALLZ}}
\]

\[
\text{Residual}_{\text{LINEallz}} = \text{Residual}_{\text{ALLZ}} \times \left( \frac{\sum x_j \text{NomPeak}_{\text{LINEjxz}}}{\sum x_j Q_{xjz}} \right)
\]

\[
\text{Residual}_{\text{LINExz}} = \text{Residual}_{\text{LINEallz}} \times \left( \frac{\text{BillingPeriodOfftake}_{\text{LINExz}}}{\text{BillingPeriodOfftake}_{\text{ALLZ}}} \right)
\]

where

- \(\text{Vcost}_z\) is the total allocable costs for voltage support in zone \(z\) in the billing period
- \(\text{Nom Charge}_{\text{ALLZ}}\) is the sum of all \(\text{Nom Charge}_{xz}\) for zone \(z\)
- \(\text{PeakPenaltyCharge}_{\text{ALLZ}}\) is the sum of all connected asset owners’ PeakPenaltyChargeLINExz for zone \(z\)
- \(\text{Residual}_{\text{ALLZ}}\) is the total residual to be recovered from or paid to connected asset owners in zone \(z\)
- \(\text{Residual}_{\text{LINEallz}}\) is the portion of \(\text{Residual}_{\text{ALLZ}}\) to be recovered from or paid to connected asset owners in zone \(z\)
- \(\text{Residual}_{\text{LINExz}}\) is the portion of \(\text{Residual}_{\text{LINEallz}}\) to be recovered from or paid to connected asset owner \(x\) in zone \(z\)
- \(\text{BillingPeriodOfftake}_{\text{LINExz}}\) 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
- \(\text{BillingPeriodOfftake}_{\text{ALLZ}}\) is the sum of metering information for all connected asset owners across all connected asset owner kvar reference nodes.
nodes in zone $z$ for the **billing period** for all **trading periods**

$\Sigma_{xj}$ is the sum across all **connected asset owner kvar reference nodes** $j$ for all **connected asset owners** $x$ in **zone** $z$

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

$Q_{xjz}$ is Nom PeakLINES$_{xjz}$, 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** $j$

(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

**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:

Extended reserve charge$_D$ = $(TERAC_{NI} \times \frac{L_{NI, D}}{L_{NI, TOT}}) + (TERAC_{SI} \times \frac{L_{SI, D}}{L_{SI, TOT}})$

where

Extended reserve charge$_D$ is the **extended reserve** charge owing by the **connected asset owner** for the **billing period**

TERAC$_{NI}$ is the sum of all payments for **extended reserve** provided in the North Island for the **billing period**

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

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

TERAC$_{SI}$ is the sum of all payments for **extended reserve** provided in the South Island for the **billing period**
Electricity Industry Participation Code 2010
Part 8

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
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


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

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.

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.

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

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 cls 8.48 and 8.50

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

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) 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

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(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

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Electricity Industry Participation Code 2010
Schedule 8.3, Technical Code A
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.

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.
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

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

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.

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.

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.

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.
Appendix B: Routine testing of assets


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.


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

7 **[Revoked]**

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

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.
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.

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.

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, co-ordinated, 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
(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
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

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(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.

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

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(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(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(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.


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.

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.

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(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
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

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


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.

<table>
<thead>
<tr>
<th>Indication or measurement</th>
<th>Values required</th>
<th>Accuracy²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station net MW</td>
<td>Import and export</td>
<td>±2%</td>
</tr>
<tr>
<td>Generating unit gross MW¹</td>
<td>Import and export, for each generating unit</td>
<td>±2%</td>
</tr>
<tr>
<td>Station net Mvar</td>
<td>Import and export</td>
<td>±2%</td>
</tr>
<tr>
<td>Generating unit gross Mvar¹</td>
<td>Import and export, for each generating unit</td>
<td>±2%</td>
</tr>
<tr>
<td>Generating unit circuit breaker status¹</td>
<td>Open/closed/in transition/ indication error²</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid interface circuit breaker status</td>
<td>Open/closed/in transition/ indication error²</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid interface disconnector status</td>
<td>Open/closed/in transition/ indication error</td>
<td>N/A</td>
</tr>
<tr>
<td>Special protection scheme status</td>
<td>Enabled/disabled/summer/winter</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum output capacity of generating station (for intermittent generating units only)</td>
<td>Number of connected generating units × MW capability of each generating unit</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 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.

<table>
<thead>
<tr>
<th>Indication or measurement</th>
<th>Values required</th>
<th>Accuracy²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid interface circuit breaker status</td>
<td>Open/closed/in transition/ indication error²</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid interface disconnector status</td>
<td>Open/closed/in transition/closed to earth/indication error</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid interface auto reclose status</td>
<td>Enabled/disabled/operated/locked out</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid interface MW</td>
<td>Import and export</td>
<td>±2%</td>
</tr>
</tbody>
</table>
### Indication or measurement

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

### 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.

<table>
<thead>
<tr>
<th>Indication or measurement</th>
<th>Values required</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grid interface circuit breaker</strong> status</td>
<td>Open/ closed/ in transition/ indication error</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Grid interface</strong> disconnector status</td>
<td>Open/ closed/ in transition/ indication error</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Grid interface</strong> auto reclose status</td>
<td>Enabled/disabled/operated/locked out</td>
<td>N/A</td>
</tr>
<tr>
<td>Special protection scheme status</td>
<td>Enabled/disabled/summer/winter</td>
<td>N/A</td>
</tr>
<tr>
<td>Reactive plant* (eg RPC equipment, capacitor, reactor, condenser) Mvar</td>
<td>Import and export</td>
<td>±2%</td>
</tr>
</tbody>
</table>

---

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 A3: 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.

1. Required only if a **generating unit** has a maximum continuous rating of greater than 5 MW.

2. 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.

3. If accuracy is measured at the input terminal of the RTU of the **grid owner**, under normal operating conditions at full scale.

4. Indication required within 5 minutes of status change.

5. 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
Electricity Industry Participation Code 2010
Schedule 8.3, Technical Code D

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

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
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]

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

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.

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.


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.

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.


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.


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.
Electricity Industry Participation Code 2010
Schedule 8.5

(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.


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.

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.