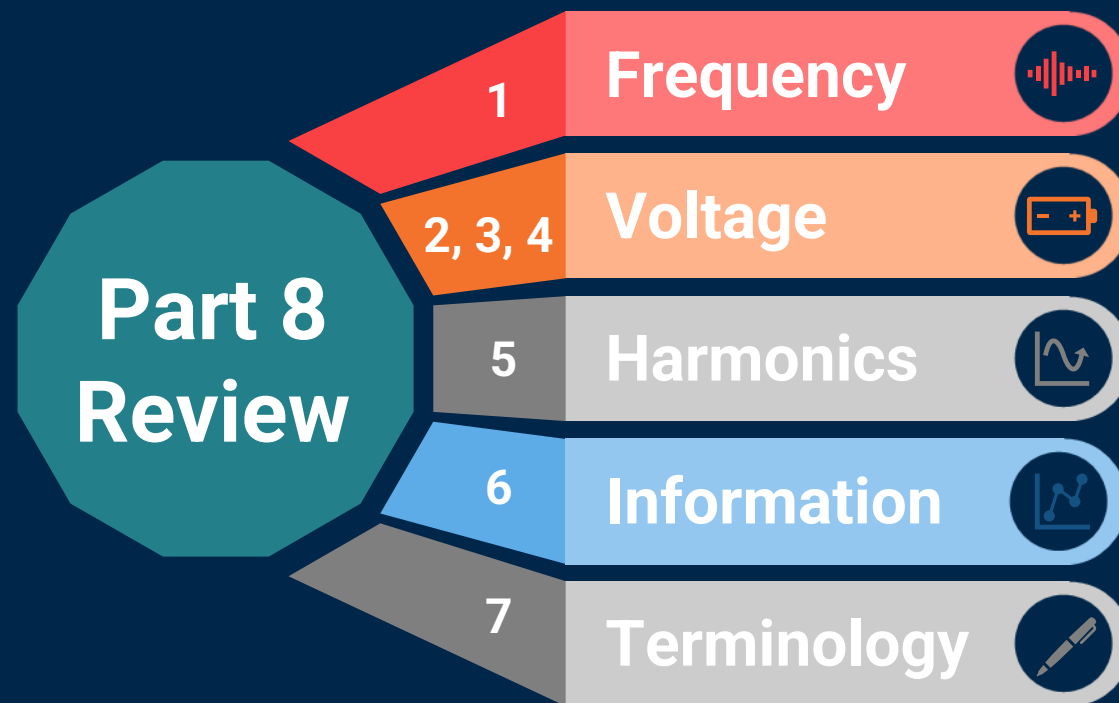


Future Security and Resilience: Common Quality Technical Group (FSR CQTG)



Meeting 15: 03 December 2025

Purpose

Provide feedback on Code
Amendment Proposals

Agenda

Time	Item
1:00 pm	Finalise minutes for Meeting 13 and 14
1:15 pm	Code amendment proposals
3:00 pm	Short break
3:10 pm	Code amendment proposals
3:45 pm	AOB
4:00pm	End of meeting

FSR-001

Align over-frequency limits between the Code and the System Operators Policy Statement

Issue:

- The Code specifies a maximum frequency level for the South Island but not for the North Island. The maximum frequency level for the North Island is set out in the Policy Statement.
- The Code does not explicitly assign responsibility to the System Operator for ensuring frequency remains below the maximum level for both Islands.

Proposal:

Re-insert in clause 7.2A, frequency levels for the North and South Island to align with the Policy Statement. That is, frequency does not exceed 52 Hertz in the North Island and 55 Hertz in the South Island during a contingent event and an extended contingent event.

Code amendment:

7.2A System operator to maintain frequency

...

(5) During a contingent event in the North Island, the **system operator** must ensure that, for ~~the that island in which the contingent event takes place~~—

(a) frequency remains at or above 48 Hertz; and

(b) frequency returns to or above 49.25 Hertz within 60 seconds after the contingent event; and

(c) frequency remains at or below 52 Hertz; and

(d) frequency returns to or below 51.25 Hertz within 60 seconds after the contingent event].

(5A) During a contingent event in the South Island, the **system operator** must ensure that, for that **island**—

(a) frequency remains at or above 48 Hertz; and

(b) frequency returns to or above 49.25 Hertz within 60 seconds after the contingent event; and

(c) frequency remains at or below 55 Hertz; and

(d) frequency returns to or below 52 Hertz within 60 seconds after the contingent event.

(6) During an extended contingent event in the North Island, the **system operator** must ensure that, for that **island**—

(a) frequency remains at or above 47 Hertz; and

(b) frequency does not drop to or below 47.1 Hertz for longer than 5 seconds; and

(c) frequency does not drop to or below 47.3 Hertz for longer than 20 seconds; and

(d) frequency returns to or above 49.25 Hertz within 60 seconds after the extended contingent event; and

(e) frequency remains at or below 52 Hertz; and

(f) frequency returns to or below 51.25 Hertz within 60 seconds after the extended contingent event].

(7) During an extended contingent event in the South Island, the **system operator** must ensure that, for that **island**—

(a) frequency remains at or above 45 Hertz; and

(b) frequency returns to or above 49.25 Hertz within 60 seconds after the extended contingent event; and

(c) frequency remains at or below 55 Hertz; and

(d) frequency returns to or below 52 Hertz within 60 seconds after the extended contingent event.

...

Proposal (continued):

- Remove ‘**over frequency limit**’ and ‘**maximum South Island frequency**’ definitions in Part 1 of the Code, and insert a reference to 50.5 Hertz in Schedule 8.3, Technical Code B, clause 9(b).

Code amendment:

1.1 Interpretation

...

~~maximum South Island frequency~~ means the maximum frequency permitted in the South Island, which is 55 Hertz

~~over frequency limit~~ means the maximum frequency of 50.5 Hz

Schedule 8.3

Technical codes

...

Technical Code B – Emergencies

...

9 Obligations of generators and ancillary service agents to take independent action

...

(b) when ~~the over frequency limit is reached and~~ the frequency reaches 50.5 Hertz and continues to rise, each **generator** must use reasonable endeavours to take the following immediate independent action to assist in restoring frequency:

FSR-002

Clarify the connection transformer is at the point of connection

Issue:

- The Code requires generators to ensure that each of their generating units connected to the transmission grid is equipped with a connection transformer with an on-load tap changer.
- Currently it could be interpreted as applying to generating units that form part of a generating station with a point of connection to the grid, but do not themselves have a point of connection to the grid.

Proposal:

- Amend Schedule 8.3, Technical Code A, clause 5 to clarify that the requirement to provide a connection transformer applies at the point of connection between the transmission grid and a generating station or generating unit.

Code amendment:

5 Specific requirements for generators

...

(2) Each **generator** must ensure that each of its **generating units** directly connected to the **grid** ~~is equipped with~~—

(a) is equipped with a voltage **control system**—

(i) with a voltage set point that is adjustable over the range of voltage set out in clause 8.23; and

(ii) that operates continuously in the voltage control mode when **synchronised**; and

(b) ~~has in order to meet the asset owner performance obligations~~, 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).

(2A) Each **generator** must ensure that for each of its **generating stations** directly connected to the **grid** and which has no **generating units** directly connected to the **grid**—

(a) the **generating station** is equipped with a voltage **control system**—

(i) with a voltage set point that is adjustable over the range of voltage set out in clause 8.23; and

(ii) that operates continuously in the voltage control mode when **synchronised**; and

(b) the **generating station** has either—

(i) a connection transformer with an appropriate range of taps together with an on-load tap-changer; or

(ii) **assets** to give a dynamic performance equivalent to those required by subparagraph (i).

FSR-003

Amend the definitions for 'fast instantaneous reserve' and 'sustained instantaneous reserve' to remove confusion

Issue:

- A previous amendment to the definition of **fast instantaneous reserve** removed the reference to interruptible load responding within 1 second and included wording 'no later than 6 seconds and measured at 6 seconds'.
- This has created confusion for industry participants on whether interruptible load must be provided within 1 second or 6 seconds.
- **Sustained instantaneous reserve** definition contains a performance requirement for generation and load – which has potential for confusion

Proposal:

- Amend the definitions for:
 - **fast instantaneous reserve** and
 - **sustained instantaneous reserve.**
- The performance requirements will be defined in the Procurement Plan.
- These changes will require an update to the Procurement Plan.

Code amendment:

fast instantaneous reserve means ~~instantaneous reserve provided the increase in generation or reduction in demand (in MW) provided no later than 6 seconds, and measured at 6 seconds,~~ after the start of a “Contingent Event” (as defined in the policy statement) ~~in accordance with the requirements for fast instantaneous reserve set out in the procurement plan~~ and that is sustained until at least 60 seconds after the start of the “Contingent Event”.

sustained instantaneous reserve means ~~instantaneous reserve provided the average increase in generation or reduction in demand (in MW) provided by instantaneous reserve during the first 60 seconds~~ after the start of a “Contingent Event” (as defined in the **policy statement**) ~~in accordance with the requirements for sustained instantaneous reserve set out in the procurement plan~~ and that is sustained until at least 15 minutes after the start of the “Contingent Event” (unless a new **dispatch instruction** is given before the expiry of that 15 minute period).

FSR-004

Revising two fault ride through (FRT) exclusions

Issue:

- Two Code clauses exclude wind generation from the FRT obligations under certain circumstances.
- Other variable and intermittent generation technologies who face the same challenges as wind generation are not excluded, thus giving wind generation a competitive advantage over those types of generation.

Proposal:

- Amend two Code clauses to clarify that other forms of variable and intermittent generation do not have to complying with fault ride through obligations (FRT) in certain circumstances – the same as is the case for wind generation.

Code amendment:

8.25B Reactive current and active power output

...

(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~~ **an intermittent generating station** if there has been a reduction in ~~the its variable~~ **[and/or intermittent]** ~~wind~~ power source during the 6 seconds following the commencement of the fault.

8.25D Application

Clauses 8.25A and 8.25B do not apply—

~~to a wind generating station when it operates at less than 5% of rated MW;~~
~~or~~

to any **asset** at an **excluded generation station**.

FSR-005

Clarify who provides information to assess compliance with fault ride through (FRT) obligations

Issue:

- The Code states that fault ride through compliance should be assessed using study cases provided by the relevant grid owner.
- This does not reflect what happens in reality.
- Instead, the System Operator provides network models to assess compliance.

Proposal:

- Amend the Code to reflect the actual arrangements in place to determine compliance – ie, the System Operator provides network models to assess compliance.

Code amendment:

8.25A Fault ride through

...

(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 network models provided by the ~~relevant grid owner~~ **system operator**; and
- (b) relevant system assumptions provided by the **system operator**.

FSR-006

Administrative timeline for dispensations, equivalence arrangements and alternative ancillary service arrangements

Issue:

- The Code requires the System Operator to consider and respond to applications for dispensations, equivalence arrangements and alternative ancillary service within 5 business days.
- This timeframe is challenging to comply with in certain situations.

Proposal:

- Extend the timeframe from 5 business days to 10 business days.

Code amendment:

Schedule 8.1

Approval of equivalence arrangement or grant of dispensation

...

3 System operator obligations on receipt of application

As soon as practicable, but no later than 5-10 business days after receiving the application made under clause 2, the **system operator** must—

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

give written notice to the **Authority** of the application; and

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.

Schedule 8.2

Approval of alternative ancillary service arrangement

1 Process for approval of alternative ancillary service arrangement

...

(2) As soon as practicable, but no later than 5-10 business days after receiving the application under subclause (1), the **system operator** must—

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

give written notice to the **Authority** of the application; and

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.

FSR-007

Frequency support requirements for South Island generators

Issue:

- The Code is inconsistent across clauses 8.17 and 8.19 on what assets are excluded from the obligations to support frequency management and frequency during under-frequency events.

Proposal:

- Amend the Code to clarify and make consistent the drafting of clauses 8.17 and 8.19 on what assets are excluded from the obligations from these clauses.

Code amendment:

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**.

...

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 synchronised~~, its **assets**, other than any **excluded generating station 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, while synchronised, each of its assets, other than excluded generating units any excluded generating station, contribute to supporting frequency by remaining remains synchronised, ensuring that each of its generating units and can and do, at a minimum, sustains pre-event output—

- (a) at all times when the frequency is at or above 47 Hertz; and
 - (b) for 30 seconds if the frequency falls below 47 Hertz but not below 45 Hertz.
- ...