Review of the Frequency Operating Standards – Terms of Reference

Revised – 26 July 2018

Introduction

Under section 38 of the National Electricity Law (NEL) and clause 8.8.3(c) of the National Electricity Rules (NER), the Australian Energy Market Commission (AEMC) requests that the Reliability Panel (the Panel) undertake a review of the frequency operating standards that apply in the National Electricity Market (NEM). This review is related to and is intended to complement the ongoing work program that the AEMC is undertaking to enable the maintenance of power system security in the NEM.

The Panel's role and responsibility in relation to the FOS: Clause 8.8.1(a)(2) of the National Electricity Rules (NER or the rules) requires the Reliability Panel to: "review and, on the advice of AEMO, determine the power system security standards". The reliability panel is required to determine the FOS as a subset of the power system security standards.

Background

The frequency operating standard*s* (FOS): NER clause 8.8.1(a)(2) requires the Reliability Panel to review and, on the advice of AEMO, determine the power system security standards. These standards may include various matters but at present include standards for the range of allowable frequency of the power system under different conditions, including normal operation and following contingencies. These standards are set out in the FOS.

The FOS set out the frequency standards to which AEMO operates the power system. This includes defined frequency bands and timeframes in which the system frequency must be restored to these bands following different events, such as the failure of a transmission line or separation of a region from the rest of the NEM. These requirements then inform how AEMO operates the power system, including through applying constraints to the dispatch of generation or procuring ancillary services.

The FOS currently includes two separate standards: one for the mainland NEM, and one for Tasmania. This reflects the different physical and market characteristics of the Tasmanian region as opposed to the mainland NEM. The settings in the frequency operating standard for Tasmania were last reviewed and determined by the Reliability Panel on 18 December 2008. The settings in the frequency operating standard for the mainland were last reviewed and determined by the Reliability Panel on 16 April 2009.

On 14 November 2017, the panel published a final determination for stage one of the review of the FOS. This determination included a revised FOS for Tasmania and the mainland which addressed the following issues:

- the inclusion of a standard for protected events in alignment with the *Emergency frequency control schemes* rule change published on 30 March 2017
- clarification of the FOS in relation to multiple contingency events
- revision of the definitions in the FOS in relation to island operation and generation events
- revision of the limit on accumulated time error that applies in the mainland.

This revised terms of reference relates to the completion of stage two of the review of the FOS.

Revised scope for stage two of the review

The Panel is requested to undertake a review of the NEM mainland and the Tasmanian frequency operating standards.

In undertaking this review, the Panel should give consideration to key system security issues currently being addressed by the AEMC and AEMO. This should include, but is not limited to, the consequences of the changing NEM generation fleet, including the impacts of decreased system inertia and associated rates of change of frequency following a contingency event.

Relatedly, the Panel should give consideration to the outcomes from the AEMO and AEMC projects and investigations set out in the ongoing frequency control work plan, published as part of the final report for the AEMC's *Frequency Control Frameworks Review*.

Given these key issues and the ongoing work programs, in undertaking this review, the Panel should give consideration to:

- Whether the terminology, standards and settings and definitions in the FOS remain appropriate, including:
    - the settings of the frequency bands and time requirements for maintenance and restoration of system frequency
    - the thresholds that apply for load and generation events
    - the limit in the FOS on accumulated time error.
- improvements to the structure and consistency of the FOS document
- other issues related to the FOS as determined by the Panel.

The Panel's review of the FOS must consider and determine the FOS to apply to both Tasmania and the mainland regions of the NEM. This must include consideration of the different physical and market characteristics relating to the power system.

Timing and Consultation Process

In conducting this review the Panel may determine its own approach, including the staging of issues to be addressed, but must carry out the review to develop the FOS in accordance with the following consultation processes:

- Give notice to all registered participants of commencement of this review.
- Publish an issues paper for consultation with stakeholders following the notification of the commencement of the review and invite submissions for a period of at least three weeks. This paper should outline the key issues and questions the Panel will consider when determining the FOS.

- Publish a draft report or reports and invite submissions for a period of at least four weeks.
- At the time of publishing the draft report(s), notify stakeholders that they may request a public meeting on the draft report(s) within five business days of the draft report(s) being published.
- If stakeholders have requested a public meeting, notify stakeholders that a public meeting will be held. At least two weeks' notice of the public meeting must be given.
- Publish a final report or reports and submit this report(s) to the AEMC no later than ten weeks after the period for consultation on the draft report(s) has closed.

The Panel may decide on its own timing for delivery of the review, provided the review is completed by 31 March 2019.