

## Reliability Panel AEMC

### Review of Mainland Frequency Operating Standards during periods of Supply Scarcity Request for Submissions on further NEMMCO Advice Explanatory Note

5 March 2009

#### Request for Submissions

The AEMC Reliability Panel (Panel) is undertaking a special consultation on a specific issue in relation to the frequency operating standards that apply in an islanded region on the NEM mainland during periods of load restoration. In particular, the Panel invites written submissions and comments from interested parties on whether the minimum allowable frequency for a single generator contingency during load restoration following an islanding event should be:

- 48.0 Hz for Queensland and South Australia but 48.5 Hz for New South Wales and Victoria to reflect the higher risks in these regions; or
- 48.5 Hz for all the NEM mainland regions to provide a consistent treatment for NEM mainland regions.

Further details on this issue are set out below.

Submissions must be received by **27 March 2009** and should be forwarded to [submissions@aemc.gov.au](mailto:submissions@aemc.gov.au). Submissions must only address the specific issue that is outlined in this explanatory note and should cite the reference **REL0030** on their cover page.

#### Background

On 6 November 2007 NEMMCO requested the Panel to review the frequency operating standards for the NEM mainland of Australia during periods of supply scarcity associated with load restoration events following islanding events. This request follows the investigations into the events involving the loss of supply in Victoria on 16 January 2007. In particular, NEMMCO was seeking clarification from the Panel as to whether it is intended to hold sufficient generation in reserve to cover the loss of a generating unit during periods of load restoration following a contingency event. NEMMCO proposed an alternative arrangement where the minimum allowable frequency for a single generator contingency would be reduced to 47.5 Hz during periods of load restoration, which would allow less FCAS raise service to be procured and thus more load be restored.

On 18 March 2008, the AEMC approved the attached terms of reference to the Panel to conduct this review. The Panel received submissions on NEMMCO's proposal from Powerlink, the ERAA and the NGF. On 24 September the Panel published its Draft Determination for its review of the mainland frequency operating standards during periods of supply scarcity. The Panel's recommendation raised, on the advice of NEMMCO, the minimum allowable frequency for a single generator contingency from 47.5 Hz to 48 Hz.

The NGF stated in its second round submission that it considered that the Panel's draft determination and the NEMMCO advice did not appear to fully consider the generator's grandfathered technical performance, in particular, that some generators have advised the NGF that significant blocks of generation have operating frequency limits that are significantly higher than 48 Hz.

Therefore, the Panel sought the further advice from NEMMCO in relation to the minimum allowable frequency for a single generator contingency during periods of load restoration that takes into account the registered technical performance of the NEM mainland generators. The advice is attached to this explanatory note. NEMMCO has provided a version of its advice with the table of grandfathered Generator technical performance information removed because it may be commercial sensitive. An aggregated summary is included in the main body of the advice.

### **NEMMCO recommendations**

In its advice, NEMMCO considers the size and location of the NEM mainland generators that frequency operating limits between 48 and 48.5 Hz. That is, where generators have registered performance standards that do not oblige them to continue to operate below a frequency operating limit in this range.

In its advice NEMMCO recommends that during an island event:

- the minimum allowable frequency for a single generator contingency for the Queensland and South Australian regions be nominated as 48.0 Hz since from the registered performance standards there seems to be only a small increase in risk in adopting this value rather than 48.5 Hz;
- the minimum allowable frequency for a single generator contingency for the New South Wales and Victorian regions be nominated as 48.5 Hz since from the registered performance standards there is an increased risk of uncertain magnitude in adopting the alternative value of 48.0 Hz; and
- in cases where an island incorporates more than one region then the critical frequency to be adopted be the maximum value of the critical frequencies for these regions (e.g. for an island comprised of the regions of Victoria and South Australia the critical frequency would be 48.5 Hz).

### **Issue for consultation**

In addition to NEMMCO’s proposal, the Panel is also considering the alternative approach where the minimum allowable frequency for a single generator contingency following an island event for all the NEM mainland regions be nominated as 48.5 Hz. The following Table summarises, at each stage of the consultation, the minimum allowable frequency for a single generator contingency during load restoration following an islanding event.

<b>Stage of consultation</b>	<b>Minimum allowable frequency for a single generator contingency following an island event</b>
Original proposal	•47.5 Hz in all regions
Panel’s draft report	•48.0 Hz in all regions
Options for final determination	
(1) NEMMCO recommendation	•48.0 Hz for Qld and SA •48.5 Hz for NSW and Vic
(2) alternative approach	•48.5 Hz in all regions

NEMMCO’s recommendation (1 above) would be more efficient than the alternative because load could be restored at a faster rate in Queensland and South Australia, where the associated risks

are small, while avoiding increased risks when restoring load in New South Wales and Victoria. However, under the alternative approach (2 above) all NEM mainland regions would be considered equally.

The Panel is seeking stakeholder views on these two alternative approaches before it makes a final determination as to which approach best advances the national electricity objective. That is, whether the efficiency gains of a less tight standard for Queensland and South Australia outweighs the regulatory advantages of a harmonised standard across the NEM mainland.<sup>1</sup>

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<sup>1</sup> The Panel notes that this difference in the treatment of Queensland and South Australia, compared to New South Wales and Victoria, only applies to periods of load restoration. For all other times a uniform frequency operating standard would apply to the entire NEM mainland.