

13 July 2018

John Pierce
Chairman
Australian Energy Market Commission (AEMC)
PO Box A2449
SYDNEY SOUTH NSW 1235

By online submission.

Dear Mr Pierce

Generator technical performance standards – draft determination (ERC0222)

Hydro Tasmania appreciates the opportunity to make a submission in response to the Australian Energy Market Commission's (AEMC) Generator Technical Performance Standards Draft Rule Determination.

We appreciate the thorough approach that the AEMC has undertaken in the preparation of this draft rule determination, including the detailed consideration given to issues raised in submissions in response to the Consultation Paper.

Hydro Tasmania has fifty registered hydro generating units with a capacity of over 2,250 MW and is also the owner of AETV Pty Ltd. With an ongoing program of plant upgrades to our hydro generating units, the impact of changes to generator technical performance standards is therefore a matter of significant interest to our business.

Hydro Tasmania notes the following responses to key items:

Assessment - modelling, monitoring and measuring

Hydro Tasmania is concerned, particularly with the proposed standard '*S5.2.5.5: Generating System Response to Disturbances Following Contingency Events*', that the proposed criteria are complex, involve numerous combinations and are open to interpretation. With so much variability in the proposed requirements, a proponent would face increased complexity and cost in considering multiple combinations of faults. Without a clear standard the TNSP or AEMO may also review the proponent's submission based on a different set of assumptions to that of the proponent. Monitoring of such complex criteria would also be difficult, noting in particular that high speed metering data may not be available at the required measurement points (these concerns are further outlined in Appendix A). Hydro Tasmania therefore urges the AEMC to simplify and standardise

these requirements.

Recognition of Existing Performance Standards

As Hydro Tasmania's submission to the Consultation Paper outlined (and other respondents identified), a key concern is that under the Generator Connection Modification process (NER 5.3.9), new performance standards may be imposed on existing generators that were either prohibitively expensive or the generator was inherently unable to meet. This would be a major disincentive to upgrade existing synchronous plant. As such Hydro Tasmania proposed that the existing generator performance standards be grandfathered.

In light of this concern, Hydro Tasmania welcomes the AEMC's consideration of these issues and supports draft Rule 5.3.4A(b)(1A):

'with respect to a submission by a Generator under clause 5.3.9(b)(3), be no less onerous than the performance standard that corresponds to the technical requirement that is affected by the alteration to the generating system;'

In the event of equipment changes covered by NER 5.3.9(b)(3), the draft rule would effectively mean that the performance standard can be negotiated between the existing registered generator performance standard (rather than the minimum access standard) and the automatic access standard. Hydro Tasmania believes that this significantly addresses the concerns raised with the Generator Connection Modification process in respect to the modification of existing standards.

Hydro Tasmania is, however, concerned by the uncertainty that remains in the Generator Connection Modification process where a new technical requirement is introduced for which there is not an existing generator performance standard. In this case an existing generator would not have a registered performance standard as a "fall back" in the case of technical incompatibility or potentially prohibitive costs in meeting that new requirement. Hydro Tasmania is concerned that new technical requirements (that may be focused on the performance of asynchronous generators but may be costly to apply to or technically incompatible with existing synchronous plant) could consequently dissuade participants from upgrading existing synchronous generators. Hydro Tasmania therefore recommends that the AEMC considers this issue further. A potential solution may be an exclusion included in the Generator Connection Modification process, in line with the same principles applied to the modification of existing generator technical standards, if a new requirement involving generator technical standards is introduced.

5.2.6A AEMO review of technical requirements for connection:

Hydro Tasmania supports the AEMC's draft rule 5.2.6A detailing a process for AEMO's review of technical requirements for connection. This rule outlines an appropriate process for a considered review of the appropriate technical requirements, which allows for input from potentially affected participants and time for assessing the technical implications of any changes.

This rule would address concerns raised in Hydro Tasmania's submission to the Consultation Paper that the introduction of a number of detailed technical rule changes requires sufficient time and opportunity for an appropriate technical review by impacted participants.

Detailed technical responses:

Appendix A details comments in relation to particular technical requirements. For the sake of conciseness comments are only made on key matters that Hydro Tasmania considers require further consideration.

If you have any queries on this submission or require further information please contact Peter Palencia (03) 6230 5798 or via email peter.palencia@hydro.com.au .

Yours sincerely



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Appendix A: Generator technical performance standards Draft Determination – technical comments

Technical Requirements Rule Clause	Hydro Tasmania’s Comments
S5.2.5.5 : Generating System Response to Disturbances Following Contingency Events	<p>Hydro Tasmania is concerned about both the complexity and variability of this technical standard and the issues involved in implementation in protection systems as well as the modelling and assessment required to determine performance.</p> <p>To address an issue originally identified with event counters in asynchronous generator protection systems the proposed standard in the draft determination has become very complex with much wider implications.</p> <p>For example, in the standard protection systems used for Hydro Tasmania’s existing synchronous generators, it would be unlikely to be able to meet the Automatic access standards and may be difficult to even meet the Minimum access standards given the complexity and variability of the parameters identified in sections 1A of the standards proposed in the draft determination.</p> <p>Going forward, to potentially completely change standard protection systems would not only be potentially expensive to implement but also introduce additional operational complexity and potential risk.</p> <p>In the modelling and assessment of performance under these clauses, given the number of combinations of faults that may be considered, without a standard reference, there is either a risk of not covering a relevant scenario or expending a considerable amount of effort (and cost) to consider all possibilities.</p> <p>It is noted that metering requirements to capture the performance of equipment during these events requires consideration.</p> <p>As noted in the covering letter, Hydro Tasmania requests the AEMC to reconsider this proposed technical standard with a view to significantly simplify and standardise the requirements.</p>
S5.2.5.11 : Frequency Control S5.2.5.14 : Active Power Control	<p>As raised in the submission to the original rule change proposal, Hydro Tasmania raised concerns of the potential at times of competing priorities to meet requirements for both (Active Power Control) dispatch targets via Central Dispatch and (Frequency Control) generating unit governor responses to frequency changes.</p> <p>We note that in practice that the operational compliance is required under <i>‘NER 3.8.23 Failure to conform to dispatch instructions’</i>.</p> <p>As identified by AEMC the Frequency Control Frameworks Review is considering frequency control issues and we trust that this issue is addressed as part of that review.</p>

