31 August 2020

The Network Operator
Power and Water Corporation
GPO Box 1921
Darwin NT 0801

By email to networkdevelopandplanning.pwc@powerwater.com.au

Dear Network Operator

System Strength Impact Assessment Guidelines and Generator and Load Model Guidelines

Thank you for the opportunity to provide a submission regarding the draft System Strength Impact Assessment Guidelines and the Generator and Load Model Guidelines published on 31 July 2020.

EDL is a leading global producer of sustainable distributed energy. We own and operate around one hundred power stations across Australia, North America and Europe including our Pine Creek generator connected into the Darwin-Katherine Power System (DKIS).

In general, EDL is supportive of the System Strength Impact Assessment Guidelines which appears to be aligned to practices in other jurisdictions.

Regarding the Generator and Load Model Guidelines, EDL notes that existing proponents were required to undertake Generator Performance Modelling in the last 18 months. RMS modelling in DIgSILENT PowerFactory format was undertaken at the direction of, and in collaboration with, Power and Water Corporation.

EDL queries the techno-economic assessment underlying the requirement to provide both RMS and EMT models. Providing multiple model formats create additional costs for proponents, particularly given both models would need to be updated for any plant modification. As DIgSILENT itself submitted in response to AEMOs NEM model guideline proposal[1]:

> *In the case of synchronous machines, the RMS and EMT models are identical. Modelling the control systems in EMT will likely provide no benefit because of their time constants. An EMT model of a synchronous machine is thus an additional and, arguably, unnecessary cost on synchronous generating systems.*

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[1]   https://www.digsilent.com.au/publications/2018/papers/CommentsToDraftModelGuidelines.pdf.

If EMT modelling is a 'must-have' in addition to RMS modelling, EDL strongly advocates that this should be undertaken in DIgSILENT PowerFactory format to align with the recent (RMS) Generator Performance Modelling. Utilising the same model format avoids the additional cost of a second software that would then need further benchmarking, validation studies and on site testing.

Please feel free to contact me on (0412) 039 860 or anthony.englund@edlenergy.com should you wish to discuss any aspect of the above.

Yours faithfully

Anthony Englund
Head of Regulatory Affairs

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