17th July 2020

Submission by email to:
2020PSFRR@aemo.com.au

DRAFT 2020 POWER SYSTEM FREQUENCY RISK REVIEW – STAGE 1, CONSULTATION

Dear AEMO,

SA Power Networks is grateful for the opportunity to comment on the Draft 2020 Power System Frequency Risk Review report published by AEMO on the 3rd July 2020.

We acknowledge the importance of robust emergency frequency control schemes (EFCSs) and the need to address emerging issues to ensure the effectiveness of Under Frequency Load Shedding (UFLS) with increasing Distributed Energy Resources. Our empirical evidence supports the analysis undertaken by AEMO, suggesting there is an urgent need for alternate measures to manage under frequency events in South Australia due to the reduction in curtailable load.

In the longer term, SA Power Network's flexible export capability will serve to provide much needed curtailment capability for DER, however it will not be available in time to address the immediate needs. SA Power Networks asserts that Enhanced Voltage Management (EVM) is one of the few technically feasible capabilities possible to meet the immediate needs in South Australia and as such we support the rapid deployment of this technology. We have commenced the implementation of EVM to provide some of these capabilities as early as Spring of 2020.

Given increasing DER and reverse power flows across the distribution network, SA Power Networks supports the need for dynamic arming of UFLS relays subject to directional flows on distribution feeders. To this end, we anticipate the outcomes of AEMO's further analysis, to determine the technical capabilities required of UFLS. It is important to consider the technical implications associated with existing UFLS arrangements in South Australia. Much of the protection relay technology in service for UFLS at SA Power Networks is incapable of providing dynamically armed response to power flows, therefore requiring replacement. Furthermore, the existing scheme operates at relatively coarse tripping points within the distribution network and therefore fails to provide the necessary resolution to maximise curtailable load available for UFLS. We believe it is necessary to consider the adequacy of existing UFLS trip points, to maximise the amount of load available for UFLS. We should also take the opportunity to review the existing UFLS scheme more broadly, to optimise the operational response.

As part of further studies to determine UFLS requirements, we strongly encourage AEMO to consider both the necessary immediate and long-term prudent capabilities required. We must ensure that the implementation provides the necessary flexibility to respond to increasing fluctuations in load and generation and thereby avoid re-work to the UFLS scheme in future. Consideration should be given to the maximum permissible response time for dynamic arming, and whether dynamic allocation of load to different frequency trip set points is necessary in the longer term.

In our view, it's important that AEMO specify the technical requirements for UFLS, for both the immediate and long term, to provide adequate optionality given uncertainties with respect to increasing DER. The DNSP will then be required to meet these technical requirements in the most cost-effective manner. This is consistent with AEMO's and SA Power Network's roles with respect to broader electricity system operation.

SA Power Networks remains committed to working closely with AEMO to identify and implement the necessary requirements to ensure a robust EFCS in South Australia.

Sincerely,

Doug Schmidt
General Manager Network Management