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By electronic submission to SRAS2018@aemo.com.au

Australian Energy Market Operator
Level 22, 530 Collins Street
Melbourne VIC 3000

First Stage System Restart Ancillary Services (SRAS) Guidelines Consultation

Hydro Tasmania appreciates the opportunity to make a submission to the Australian Energy Market Operator (AEMO) in relation to the SRAS guidelines, electrical sub-network boundaries, and NSCAS tender guidelines (Guidelines).

As communicated, by multiple parties during the 23 June 2017 teleconference and reiterated at the Tasmanian SRAS Forum on 10 July 2017, there are several significant issues requiring further information in the draft Guidelines. As such, this additional information is required from AEMO before a fully informed response can be formulated by participants.

Hydro Tasmania requests AEMO to ensure that the additional information is made available for participants on;

- (1) The formula or methodology AEMO intends to use to calculate aggregate reliability;
- (2) Assessment of impacts of SRAS testing at 24 hours' notice; and

that sufficient time is allowed for participants to review prior to responding.

As outlined in previous correspondence and referred to in this submission one of Hydro Tasmania's key concerns remains the provision of only one contracted SRAS in Tasmania. As was seen in South Australia the risk of a system black event is real and present. That event, where two SRAS facilities failed to re-start the South Australian sub-network, reinforced Hydro Tasmania's concerns around a single SRAS procurement, for any region. In addition, although inter-connectors may potentially assist in restarting black regions, as was the case in South Australia, Tasmania cannot rely on assistance from any other region during a system restart event due to the technical constraints of the Basslink HVDC cable. In light of the new System Restart Standard (SRS) to be effective from 1 July 2018 and with the amendment of the SRAS guidelines we hope that this key issue is addressed.

Hydro Tasmania is providing these initial responses to AEMO's current questions based on the assumption that AEMO will provide further requested information and provide an appropriate opportunity to respond in detail.

AEMO's proposed Guidelines

Technical and reliability requirements for individual SRAS

Further information is requested from AEMO on how the technical data will be used in the reliability calculations.

The proposed process for modelling, assessment, and testing of the capability of individual proposed SRAS, including proposed assumptions about the state of the transmission network

Hydro Tasmania appreciates the requirement for additional testing as noted in item 3.5.2 of the draft Guidelines. This additional testing would be in line with the recommendations of the Finkel Report.¹

However, testing with just 24 hours' notice from AEMO is onerous on the SRAS provider and in particular the Transmission Network Service Provider (TNSP). Configuring the Network for the testing and arranging isolations at such short notice could be detrimental to system security. Whilst meeting the more rigorous testing principle it may be worth considering a one week notice period to undertake such a test. It should be acknowledged that participants have many competing demands on a day to day basis whereas in a real system black event the initiation of SRAS would have ultimate priority and attention.

As identified during the teleconference, consultation in advance by AEMO with the relevant TNSP is necessary to ensure that testing within tight time frames is possible. This is relevant because the SRAS provider is contractually liable to undertake the test but may be relying on the TNSP's switching to actually facilitate the test. To be clear, if the TNSP cannot facilitate the testing at short notice then the SRAS provider should not be penalised.

Although the draft Guidelines allow for the consideration of market and power system conditions it is not defined how these considerations will be assessed. If the decision to conduct a short notice SRAS test rests solely with AEMO what market impacts, including the SRAS provider's commercial interests, are considered in the assessment of the timing of the test?

The risk of any unknown or unforeseen testing costs would need to be factored into the SRAS provider's contract test charges.

Hydro Tasmania believes that realistic assumptions about the state of the transmission network, particularly consideration of possible network failures, are critical considerations in the accurate modelling of potential SRAS performance. As outlined later in this paper, Hydro Tasmania urges AEMO to include the principles of network diversity and single points of failure in any modelling and assessment.

¹ <http://www.environment.gov.au/system/files/resources/1d6b0464-6162-4223-ac08-3395a6b1c7fa/files/electricity-market-review-final-report.pdf> recommendation 2.4, pg 62.

The proposed process for meeting the aggregate required reliability of SRAS for each electrical sub-network

As discussed during the teleconference it was clear that many participants could not give a considered response as to how AEMO proposed to meet its aggregate SRAS reliability obligations based purely on the draft Guidelines. Many participants sought to understand AEMO's proposed calculation methodology, requesting further information to allow for a fully informed consultation prior to the issuing of the second draft of the guidelines.

Transparency of the method is essential if participants are to understand how AEMO will treat possible single points of failure in the transmission systems. This is particularly pertinent in Tasmania considering the possible single points of failure that exist between the State's major load centres.

It is noted that the SRS Diversity criteria require AEMO to consider a number of factors; however it is not clear how those factors are weighted or assessed in determining the aggregate reliability. This needs to be clarified with the additional information requested to allow for a fully informed reply.

Hydro Tasmania urges AEMO to utilise all the inputs provided by the TNSP's in its aggregate reliability considerations. Hydro Tasmania also urges AEMO to outline to the broader market the principles it applies in determining the aggregate reliability.

How AEMO proposes to determine the number and location of services with the capability to meet the SRS for each electrical sub-network

Again, without knowledge of AEMO's actual calculation methodology, including particularly the assessment of diversity, it is difficult to comment on how AEMO proposes to determine the number and location of services.

The Australian Energy Market Commission's Reliability Panel noted, during the SRS consultation period, that electrical diversity and the failure of any single significant transmission element (single line or corridor) must be taken into account when assessing the number of services required as part of SRAS procurement. For instance, the currently contracted SRAS in Tasmania sits behind two separate (Farrell and Sheffield) substations and more significantly the connecting Sheffield-Farrell 220kV Transmission Lines. The Sheffield-Farrell single transmission corridor runs through remote and rugged terrain and constitutes a significant single network point of failure risk. If any of these single points fail most of Tasmania will be isolated from its contracted SRAS.

Any risk would be compounded if there was only a single corridor between the contracted SRAS station and the respective substation.

The current draft Guidelines do not indicate how such a scenario would be assessed, or what weighting may be given to the risk of a single point of failure, but potentially this risk may imply either the breakpoint of a sub-network or the requirement for an alternative SRAS.

Without alternative contracted SRAS in Tasmania there is a reliance on uncontracted units. Such uncontracted units may be unavailable due to planned or unplanned network or station outages. Furthermore, if TasNetworks or Hydro Tasmania has no clear direction where to maintain, test and train for black system events then system restarts will be much less coordinated at a time when staff and processes will already be under considerable pressure. This lack of certainty adds unnecessary difficulty to planning and resourcing for such an emergency event.

How AEMO proposes to determine an appropriate procurement option (competitive tender or selective negotiation), and the description of each process

With regards to items 5.2, 5.3 and 5.4 of the draft SRAS Guideline it is hoped that AEMO will provide further detail to allow participants to provide appropriately informed feedback.

Relevant technical information for AEMO's determination of electrical sub-network boundaries

In consideration of item 7, Boundaries of Electrical Sub-Networks in the draft Guidelines, Hydro Tasmania draws attention to the requirement to consider (a) *The number and strength of transmission corridors connecting an area to the remainder of the power system*; in determining the electrical sub-networks.

In the case of the Tasmanian region there is concern that the current assessment of only one sub-network in the region does not sufficiently consider the risks associated with loss of the single transmission corridor between Northern and Southern Tasmania.

This transmission corridor from Palmerston Substation to Waddamana Substation connecting the north and south of Tasmania is a single corridor extending for considerable length through, and adjacent to, heavily timbered areas which are often exposed to significant bushfire activity. An event in this corridor, or at one of the critical substations, has the potential of separating the Tasmanian Power System into North and South sub-networks (splitting the region's load and generation approximately in half).

Without an SRAS source in the relevant 'sub-network', this potentially exposes one half of the Tasmanian region to an extended outage during a system black event. A north/south separation event is not fanciful; in 2013 this major transmission corridor was affected by bushfire which had the potential to cause the lines being de-energised for safe fire-fighting purposes.

AEMO have specifically noted they will request input from all relevant TNSPs on any technical characteristics, including single points of failure, required to determine electrical sub-network boundaries. In this assessment, technical information from TasNetworks will assist AEMO to satisfy the SRAS Guidelines and AEMO's power system security responsibilities by facilitating the procurement of adequate SRAS to enable a co-ordinated response to any major supply disruption in Tasmania.

We note the concern, expressed by other parties also, to ensure that not only the SRAS procurement objective is met, but that in this process consideration is also given to the ultimate objective of supplying customer load.

We also anticipate, as discussed in the Tasmanian forum, that the relevant Jurisdictional System Security Co-ordinator (JSSC) will be consulted during this process.

We urge AEMO, as part of this consultation, to consider in detail the issues associated with the Tasmanian transmission network and the relevant technical information provided by TasNetworks based on their extensive knowledge and experience as the relevant TNSP.

Hydro Tasmania encourages AEMO to fully embrace the recommendations made in the Finkel report which note it will be important to ensure that there is sufficient availability of system restart capabilities in each NEM region to cope with the possibility of a system-wide blackout.²

Please contact Prajit Parameswar on (03) 6230 5612 if you would like to discuss any matters associated with this submission.

Yours sincerely

Allan Jones
Manager Spot Market & Operations

For

² <http://www.environment.gov.au/system/files/resources/1d6b0464-6162-4223-ac08-3395a6b1c7fa/files/electricity-market-review-final-report.pdf> pg 32