

22 August 2020

Dr Brent Layton
Chair
Electricity Authority
PO Box 10041
Wellington 6143

Dear Brent

Advice resulting from the 6 August 2020 meeting of the SRC

The Security and Reliability Council (SRC) is tasked with providing the Electricity Authority (Authority) with independent advice on the performance of the electricity system and the system operator, and reliability of supply issues.

The SRC considered and discussed four papers at its 6 August 2020 meeting. This letter is the SRC's advice arising from those papers.

In addition to those papers, the SRC also met with the Authority Board to discuss the Authority's new strategy and the SRC's role in that, the performance of the system operator and various other matters.

This meeting had fewer papers than a standard SRC meeting as it also included the annual strategy and priorities working session, guided by James Tipping from the Authority.

Gap analysis of the industry response to COVID-19

The SRC received a short paper to prompt discussion on the industry response to the COVID-19 pandemic with a view to considering preparedness for moving back up alert levels. Members largely discussed the deferral/backlogging of work (particularly at the network level), the effect of consumers' ability to pay on the industry, information sharing between participants, and concerns with regards to access to personal protective equipment (PPE) and COVID-19 testing for security-critical staff.

The SRC's advice to the Authority is:

- industry representative groups should be encouraged to share lessons with their peers
- the Authority should prompt companies to work collaboratively again, should the country go back into level four, and should consider providing central oversight and reporting to encourage this collaboration
- the Authority should also consider whether the priority position of the industry with regards to constraints in COVID-19 testing and the provision of PPE is of concern

as well as border access issues for off-shore experts and if so, refer this concern to the appropriate agency.

Wellington's exposure to grid n-security risks in March 2019

The SRC received advice and had discussions related to this topic at its October 2019, March 2020 and August 2020 meetings. The Authority Board specifically asked for advice on this topic in a 20 August 2019 letter to the SRC.

Transpower (in its role as grid owner) had a project to replace 12 km of corroded conductor on one of the two lines between Wilton and Central Park substations in Wellington (Central Park – Wilton B line). The line has two circuits. A third circuit links the two substations via the separate Central Park – Wilton A line (but shares a tower at the Central Park end).

Transpower planned a four-month construction programme beginning February 2019. The planned construction methodology involved keeping one circuit on the B line live while working on the other circuit. This would have maintained N-1 grid security.

After completing replacement of several spans, Transpower found the new conductor moved out of sync with the old live conductor in strong winds. This was judged to pose a risk to the line crew, so the construction methodology was amended so both B line circuits were de-energised while crews were working (with the second circuit not re-energised overnight).

The methodology was initially amended such that Central Park was on N security for 20 days continuously, until consultation with the EDB amended the methodology. This placed the Central Park substation – which serves 45,000 connections in the Wellington CBD, Eastern suburbs, hospital and airport – on N-security for an initial 7 days continuously and then a further 11 days continuously during March - April 2019. At the time, New Zealand was on heightened alert in the wake of the 15 March Christchurch mosque shootings.

The SRC's advice to the Authority is:

- While it was *possible* for the grid owner's risk assessments to have identified asymmetric conductor swing, the SRC has seen no evidence to suggest the failure to do so was unreasonable. In future, it would be reasonable to expect the grid owner to identify the triggers for asymmetric conductor swing. The grid owner considers it has updated its procedures accordingly.
- Once it had amended the methodology, Transpower did undertake communication with a few key stakeholders. The SRC considers Transpower's communication was insufficient for such a significant risk. However, as noted in the following section of advice, the SRC is confident Transpower's communication is subsequently much improved.

- The consideration of whether Transpower chose the most appropriate methodology to re-plan the outage is outside the scope of what the SRC received advice on. The SRC did consider that re-planning in the wake of an unplanned outage is an area where some gaps exist. The advice in the next section further details these gaps and the SRC's conclusions.

Industry communication of supply risks and emergencies

The SRC received a paper on Transpower's communication of reduced security and outages, which included information regarding specific outages and reduced security incidents.

In 2019, the SRC secretariat's work on a risk management framework identified the communication preparedness of the Authority and Transpower were important for minimising the adverse impacts of various supply shortages. A paper was presented to the 12 March 2020 meeting to review whether these communication arrangements were appropriate.

As the SRC was not satisfied it understood what it needed to, a series of questions were developed and approved at the 12 May meeting, to ensure that an exhaustive list of concerns was presented to Transpower. Transpower responded promptly to that request and their written answers enabled a final discussion at the 6 August meeting.

In the same period, the SRC also received advice from the system operator and the Authority about their respective communications plans in the event of a security of supply emergency.

The SRC's advice to the Authority is:

- The planned outage process for transmission assets is sufficient for well-resourced and motivated parties to examine proposed asset outages, get more information and make counterproposals.
- Unplanned outages are generally well handled. However, the above advice about Wellington's n-security in March 2019 highlights two gaps in the arrangements where changed circumstances to a previously well-planned outage means the outage needs to be re-planned at short notice.
 - the grid owner needs to appropriately balance the cost and timing impact to itself against the risk of impact to the community (both end consumers and affected distributors)
 - distributors and their customers are reliant on the grid owner using good judgement to know in which circumstances to undertake more detailed re-planning and engagement with stakeholders. The principles of the planned

outage process (especially whole-of-system economic impacts being considered, and stakeholder engagement) should be formally adopted to the extent practicable by Transpower for re-planning at short notice.

Furthermore, good relationships between relevant transmission and distribution experts should be encouraged by both Transpower and distributors.

- Transpower's knowledge of distribution networks is, understandably, not as good as each distribution network owner. This asymmetry of information can sometimes mean that Transpower (as grid owner or system operator) may make sub-optimal decisions for consumers when distribution network reconfiguration can improve security or mitigate impacts. Such situations will be unusual. As such, it is incumbent on distribution network owners to both proactively and reactively make Transpower aware of these situations and for Transpower to maintain open communication.
- Currently, for planned and unplanned outages, Transpower's communication is appropriate. Transpower has put significant effort into improving its communication of outages and this seems to have been successful.
- For communication of security of supply emergencies, the SRC was satisfied with the preparedness of both the system operator and the Authority.

Measures of reliability

The SRC received a paper on various measures of reliability in the industry. The data and charts for this paper are largely provided by the Authority's market monitoring team, with some additional data provided by the Commerce Commission. This annual report tracks measures relating to frequency-keeping, outages, and reserves and is a backwards-looking report, as future reliability events (such as the Penrose fire) are difficult to predict.

The SRC's advice to the Authority is:

- the Authority should continue to track trends observed by the various measures they provide and be able to provide an opinion on the overall health of reliability.

The SRC also complimented the Authority's market monitoring team for the work that goes into compiling the report.

SRC Strategy and Prioritisation

The SRC held their annual strategy session and the results of this session will be used by the SRC to guide their work programme for the upcoming year. The themes addressed in this session were:

- Performance of network owners and operators: how do we know network operators and owners (covering both transmission and distribution) are doing a good job and managing their risks appropriately?
- Impacts of new technology: how do we monitor the impacts of new technology and assess the ability of the system to absorb and take most advantage of these technologies?
- Cyber security: how do we ensure the sector is managing and adapting to these constantly evolving risks on an ongoing basis?
- Impacts of disruption on the longer-term outlook for security and reliability: how do we ensure the sector remains secure and reliable through significant changes in demand and supply?
- Resilience of the system to sudden, unexpected shocks: how do we ensure the sector is resilient to shocks?

There is no further advice arising from matters covered at the 6 August 2020 meeting.

Yours sincerely

A handwritten signature in black ink, appearing to read 'H Roy', is positioned above the printed name.

Heather Roy

Chair of the SRC

cc: SRC members, Grant Benvenuti (Authority)

7 October 2020

Hon Heather Roy
Chair
Security and Reliability Council (SRC)

By email: heatherjroy@gmail.com

Dear Heather

Response to your letter of 22 August 2020

Thank you for your letter of 22 August 2020 that gives the SRC's advice arising from its 6 August 2020 meeting. The Authority Board considered this advice at our 7 October 2020 meeting. On behalf of the Authority, I have responded below to most of the advice received.

Gap analysis of the industry response to COVID-19

The SRC made three recommendations in advice on the industry response to the COVID-19 pandemic. This advice concerned industry collaboration, and essential workers within the industry being provided with COVID testing and personal protective equipment (PPE).

The Authority will consider ways to facilitate industry communication regarding lessons learned and preparedness for future outbreaks. The Authority's staff will refer concerns regarding the provision of testing and PPE to the relevant agencies.

Wellington's exposure to grid n-security risks in March 2019

The Board thanks the SRC for performing a review of this incident as requested. We note the improvements that have already been made to both the process and resulting communication because of this incident and consider that this process was enhanced by the SRC's involvement.

The Authority will keep a watchful eye on future incidents and continue to monitor Transpower's communication of these issues and whether intervention may be warranted.

The Board noted the Authority has not previously asked the SRC to investigate grid incidents, instead performing the investigation itself and asking the SRC to review the results. It appreciates the work performed by the SRC performing the primary investigation in this case.

Industry communication of supply risks and emergencies

The SRC has provided a thorough and considered review of Transpower's communication of supply risks and emergencies.

The Authority agrees with the SRC's advice, particularly that more targeted collaboration between participants and grid owner would produce better outcomes for consumers. If distributors are better informed about outage situations, they can in turn provide better communication to their consumers.

The Authority will write to Transpower and encourage it to consider how to give effect to the SRC's advice around achieving better outcomes for consumers with respect to unplanned outages.

Measures of reliability

I am pleased to pass on the SRC's compliments to the Authority's Market Monitoring team for their work on the reliability report. As additional data becomes available to them, these measures will be made available to the SRC where appropriate. In a related matter to the above two items, we are expecting new data about n-security situations to become available through Transpower's reporting to the Commerce Commission.

SRC strategy and prioritisation

The Board met on 2 September 2020 for our annual strategy day. The conversations with the SRC on 6 August 2020 were useful context ahead of this strategy day, and the Board appreciated the opportunity to meet personally and discuss relevant matters with the SRC.

The SRC has provided the themes from its annual strategy session. The only additional area we would suggest you consider explicitly including is action being taken in relation to climate change mitigation and adaptation, particularly with regards to network investment. This could fall under the heading of 'Impacts of disruption on the longer-term outlook for security and reliability'.

The Board encourages the SRC to continue to annually review the strategic environment, as it provides timely feedback and input for the Authority and is a feature of any well-functioning entity.

Yours sincerely



Brent Layton
Chair