

MIKE UNDERHILL
11C/186 THE TERRACE
WELLINGTON 6011

18 June 2018

Brent Layton
Chair
Electricity Authority

Dear Brent

I wish to tender my resignation, effective immediately, from my role as Chair of the Security and Reliability Council.

I have just been appointed to the Boards of two Lines Companies. My appointment to the Board of Electra has recently been announced and my second appointment will be announced shortly. In this situation I no longer meet the required criteria for being an independent Chair

I have enjoyed the challenge of chairing the SRC and the interactions with you and the Authority

I would also like to acknowledge the work of Callum Mclean and Carl Hansen in ensuring that the SRC was well serviced.

Yours Sincerely

A handwritten signature in dark ink, appearing to read 'Mike Underhill', with a stylized, flowing script.

Mike Underhill

26 April 2018

Dr Brent Layton
Chair
Electricity Authority
PO Box 10041
Wellington 6143

Dear Brent

Advice resulting from 28 March 2018 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 five different papers at its 28 March 2018 meeting. This letter is the SRC's advice arising from all of those papers.

Advice on the system operator's annual assessment of security of supply for 2018

The SRC received the system operator's annual assessment of security of supply for 2018. The assessment forecasts demand and generation to assess the adequacy of the power system to meet the security standards set by the Authority.

The SRC's advice to the Authority is:

- the assessment indicates that the pipeline of generation available for development is adequate for at least five years under a wide variety of scenarios
- there is value in the assessment's focus on physical capability
- there is likely value in the assessment (or some other forecasting instrument) illustrating the dynamic nature of the generation market. The system operator should consider further improvements that better illustrate this dynamism
- there is a 'consents cliff' approaching with a significant number of resource consents for prospective electricity generation expiring in 2022-23. Consents for wind generation may be particularly challenging to re-consent, as the optimal technology has developed significantly and is now more intrusive (larger and taller) than when consents were issued over 10 years ago
- the assessment's assumptions about how long it takes to build generation are generally accurate
- the system operator should consider analysis to better account for climate change, such as giving more weight to recent hydro sequences as a better indication of the future.

The SRC has requested further reporting on the treatment of thermal fuel availability in the system operator's security of supply forecasting. The SRC expects to give advice to the Authority on this topic in due course.

Advice on the system operator's New Zealand Generation Balance (NZGB) reporting of winter 2018

The SRC received the system operator's NZGB report for March 2018, with written and oral updates on the latest NZGB results to hand.

The SRC's advice to the Authority is:

- that the NZGB process seems sound and is producing useful results
- the results available to the SRC were no cause for concern.

Advice on risk from the natural gas industry that could impact on the electricity industry's security or reliability

The SRC received two presentations relating to the natural gas industry:

- a representative from Woodward Partners presented about the prospects for future gas production
- representatives from First Gas presented about its management of high-impact risks on its gas pipelines with the potential to significantly impact gas-fired electricity generators.

The SRC's advice to the Authority is:

- there are good reasons to suppose the gas industry is well-placed to meet future demand:
 - o New Zealand has for many years maintained 10-12 years of gas reserves
 - o there are exploration options available should developers be incentivised to make additional investment
 - o there is demand-side flexibility in the form of the country's largest gas user also being sensitive to gas prices
 - o recent exits and acquisitions of companies in the upstream gas industry indicate greater investment will be made in extending the life of existing gas production assets
 - o there is potential for gas storage at Ahuroa to be expanded
- however, there is some delivery risk posed by major gas fields with declining extraction rates leading to insufficient intra-day supply to meet peak capacity demand for gas
- owners of gas-fired electricity generation appear to be contracting for less gas supply in advance and having more options to procure additional supply
- that the SRC took assurance from First Gas that their approach to risk management of gas pipelines is appropriate.

The SRC intends to seek further information about intra-day delivery risk and the wider gas industry's management of events. The SRC expects to provide further advice about the potential impact of the gas industry on the security and reliability of the electricity industry.

Advice on the Authority's annual review of the system operator's performance for the year ending 30 June 2017

The SRC received the Authority's annual review of the system operator's performance for the year ending 30 June 2017. The SRC previously received and advised on the Authority's draft executive summary of the same review.

The SRC's advice to the Authority is that the SRC was satisfied with the Authority's review.

There is no further advice arising from the matters discussed at the SRC's 28 July 2017 meeting. I note that the SRC was due to receive a presentation from Transpower about a cyber-security exercise undertaken by many participants in New Zealand's electricity industry. Through no fault of Transpower's, I decided we needed to defer that presentation to a future meeting. We will provide advice on it in due course.

Yours sincerely



Mike Underhill

Chair

Security and Reliability Council

cc SRC members, Carl Hansen (Electricity Authority)

13 April 2018

Mike Underhill
Chair
Security and Reliability Council (SRC)

Dear Mike

The SRC's advice resulting from its meetings on 6 November and 13 December 2017

Thank you for the SRC's advice resulting from its meetings in late 2017. The Authority Board received and discussed the advice at its 12 March 2018 meeting.

Advice resulting from the 6 November 2017 SRC meeting

The SRC advised that "...when reviewing regulatory settings, the Authority should regard the ability to successfully explain the security of supply regime to the public as an essential design parameter of the regulatory settings." The Board agrees with this advice and I understand the SRC secretariat has passed on this advice to the relevant project team.

The SRC advised that it wished for "...Transpower to share its inverter testing results with relevant organisation(s) such as Worksafe New Zealand, Standards New Zealand, International Accreditation New Zealand." This advice has been communicated to Transpower and the Authority's Chief Executive has directed Authority staff to assist however they can.

The Authority has also provided your advice about Waikato and upper-North Island voltage management to the Commerce Commission to ensure it is aware of the SRC's consideration of this topic.

The SRC encouraged the system operator to reduce the likelihood of manual errors causing issues. The Authority has relayed this advice to the system operator. I note this has been a focus of attention for them, and their programme of internal business assurance audits is an important tool for their work in this area.

Advice resulting from the 13 December 2017 SRC meeting

A copy of the SRC's advice has been provided to Transpower, as all of it has some relevance for them. That advice is helping Transpower to update its reporting to the Authority on the event of 2 March 2017. Once the Authority receives updated reporting, we will consider all relevant information (including the SRC's advice) before developing an action plan to address any remaining matters.

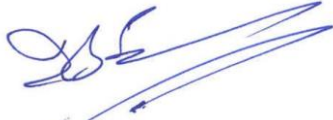
The Authority Board greatly appreciates the advice the SRC has been able to give the Authority on post-event investigations and encourages the SRC to continue being alert to advising on any opportunities for improving such post-event investigations.

While the Authority has excluded the 2 March 2017 event from the scope of its annual review of system operator performance, we are committed to ensuring there is publicly available reporting that accurately reflects our views on the event. Such reporting must include a fair assessment of the system operator's performance.

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We are satisfied we do not need to conduct any additional investigation of the runback of generation at Aviemore on 2 March 2017. Meridian Energy promptly self-reported its breach of the Electricity Industry Participation Code on 5 April 2017. That compliance process was closed in June 2017 and a letter was sent to Meridian's Chief Executive issuing a strong warning. When developing our action plan to address any remaining matters, we will consider whether to issue advice about the lessons learned concerning generation control systems.

Yours sincerely



Brent Layton
Chair