

Meeting Date: 20 June 2019

RISK MANAGEMENT FRAMEWORK

SECURITY AND RELIABILITY COUNCIL

This paper provides a summarised dashboard of the controls identified during the risk management framework development that are relevant to the Security and Reliability Council (SRC). The purpose of this paper is to facilitate a discussion around risk and strategy and establish a series of ongoing updates for future SRC meetings.

Note: This paper has been prepared for the purpose of the Security and Reliability Council. Content should not be interpreted as representing the views or policy of the Electricity Authority.

1. Actions from the 28 March 2019 meeting

- 1.1. The SRC considered a paper on planning for the risk management framework in March 2019.¹ The SRC concluded their discussion by directing the secretariat:

“Not to proceed with the full plan outlined in the paper and instead complete the low-cost task of analysing past agendas.

To develop a dashboard of key risks with assessments, suitable for updating and presenting to every SRC meeting. The dashboard would describe risks that may manifest in short/medium/long timeframes.

To allow an extra two hours at the June meeting of the SRC for a discussion of risk and strategy.”²
- 1.2. The secretariat has interpreted the SRC’s direction as implicit agreement to close the two actions that were part of the ‘full plan’.³
- 1.3. The secretariat has developed a risk-based dashboard of matters for SRC attention. The remainder of this paper describes the approach used to create the dashboard and includes the dashboard itself.
- 1.4. The risk and strategy discussion immediately after this agenda item will be influential for further development of the risk dashboard.

2. How the dashboard was developed

- 2.1. The secretariat had previously developed a bowtie-based visualisation of electricity industry controls and mitigations against a large, unplanned loss of power.
- 2.2. Using that bowtie visualisation, the secretariat reviewed the controls and mitigations to identify those that were likely worthy of some SRC attention. That produced a list of ~30 items. Those items tended to be from the ‘left-hand side’ of the bowtie (controls intended to reduce the likelihood of an event), as many of the mitigations from the ‘right-hand side’ cannot be assessed in advance (so can only be assessed on exception, retrospectively).
- 2.3. The secretariat held a brainstorming and assessment session with a group of experienced peer reviewers. The peer reviewers recommended adding and removing items from the list. The group arrived at a consensus assessment (1-5 grade) of the list against two criteria:
 - a) criticality
 - b) effectiveness.
- 2.4. The criticality score indicates the importance in preventing an event from occurring, and/or the extent to which it can mitigate the impact. A score of 1

¹ Available from <https://www.ea.govt.nz/dmsdocument/25240-rmf>

² From paragraph 12.2 of the draft minutes of 28 March 2019, included as agenda item #7 in this 20 June 2019 meeting.

³ Actions #2 and #3, shown as closed in agenda item #9 in this 20 June 2019 meeting.

indicates that the control is not critical, while a score of 5 indicates the highest level of criticality.

- 2.5. The (in)effectiveness score provides an indication of how confident the SRC should be that the control works well to prevent or mitigate the event. In principle, a score of 5 could indicate that the control is known to be ineffective, but in every case so far means that either the SRC has never been informed about the topic or that the effectiveness cannot be assessed with confidence. A score of 1 indicates that the control is highly effective and that the SRC has received information on the topic.⁴
- 2.6. These scores are then multiplied to create an overall risk rating as a score from 1 to 25. The higher the risk rating, the more important it is that the SRC consider the matter.
- 2.7. The dashboard is ranked and colour-coded according to the risk rating. Each entry is categorised with an 'area of interest' and described as an actionable item for the SRC to consider information from someone (the 'responsible party').
- 2.8. The top seven entries in the dashboard are primarily there because they've never been discussed with the SRC, rather than concerns about the quality of the controls. The secretariat believes the controls are generally effective.
- 2.9. Once the SRC has discussed the following 'risk and strategy' topic, and the outcomes of the Electricity Price Review are known, the secretariat will develop a multi-year work programme to prioritise matters for SRC attention.

3. Questions for the SRC to consider

3.1. The SRC may wish to consider the following questions.

- Q1. What further information, if any, does the SRC wish to have provided to it by the secretariat?**
- Q2. What advice, if any, does the SRC wish to provide to the Authority?**

⁴ In order to know whether the SRC has been informed of particular matters, the secretariat compiled a list of past SRC agendas and considered each matter in light of that list.

4. The dashboard

4.1. The dashboard described in section two above is shown below.

Line identifier	Criticality	Effectiveness	Risk rating	SRC action	Area of interest	Responsible party
1	5	5	25	SRC could obtain information from the system operator on its Credible Event Reviews (that determine whether, and how, power system risks managed).	System operations	System operator
2	5	5	25	SRC could obtain information on the automatic under-frequency load shedding (extended reserves) arrangements.	System operations	Electricity Authority and system operator
3	4	5	20	SRC could obtain information on the system operator's emergency preparedness and business continuity planning.	System operations	System operator
4	4	5	20	SRC could obtain information from the system operator on ancillary services (frequency keeping, instantaneous reserves, over-frequency reserve, voltage support, but excluding black start).	System operations	System operator
5	3	5	15	SRC could obtain information on the System Operator Rolling Outage Plan (SOROP).	Capacity and energy security	System operator
6	3	5	15	SRC could obtain information on the communications plans and preparedness strategies of key agencies for supply emergencies.	Social impact	Transpower and the Electricity Authority
7	3	5	15	SRC will shortly obtain information from Ministry of Civil Defence and Emergency Management about emergency preparedness with regards to the electricity industry.	Social impact	Ministry of Civil Defence & Emergency Mgmt
8	3	4	12	SRC could obtain information directly from a selection of distributors on their risk and asset management (e.g. planning, reporting, documentation, emergency management etc.).	System failure	Distributors
9	3	4	12	SRC could receive presentations from distributors on their cyber-security management.	System failure	Distributors
10	4	3	12	SRC could hear again from the system operator about power system restoration	System	System operator

				arrangements including black start.	operations	
11	5	2	10	SRC could hear again from the Commerce Commission about whether regulation and compliance monitoring of Transpower is adequate, is keeping up with technology and is fit for purpose.	System failure	Commerce Commission
12	2	5	10	SRC could obtain information on business continuity and disaster recovery of market operation service providers other than the system operator.	Social impact	Electricity Authority
13	2	5	10	SRC could obtain presentations from a variety of generators on their emergency preparedness, including fuel supply availability in a post-emergency situation.	Social impact	Generators
14	2	5	10	SRC could receive presentations directly from a selection of generators on their risk and asset management (e.g. planning, reporting, documentation, emergency management etc.).	System failure	Generators
15	3	3	9	SRC could hear again from its secretariat about the overall cyber-security preparedness of the electricity industry.	System failure and social impact	Secretariat
16	3	3	9	SRC receives annual reports on measures of reliability from the Electricity Authority's Market Monitoring team.	Regulation	Electricity Authority
17	<i>N/A. Could lead to enhancements in the above item.</i>			SRC due to receive a report from the Quality of Supply working group on Commerce Commission reporting of asset management.	Regulation	Electricity Networks Association
18	3	3	9	SRC could obtain information that regulation and compliance monitoring relating to the failure of generation equipment is adequate, is keeping up with technology and is fit for purpose (such as the under-frequency event regime, asset owner performance obligations, dispatch requirements).	System failure	Electricity Authority
19	4	2	8	SRC could hear again from the two largest metering equipment providers about their cyber-security management.	System failure	Metering provider
20	4	2	8	SRC could hear again about the reliability and resilience of the gas industry (with implications for electricity generation capacity and energy security).	Capacity and energy security	Gas sector representatives
21	4	2	8	SRC has recently heard from the Commerce Commission about whether regulation and compliance monitoring of distributors is adequate, is keeping up with technology and is fit for purpose.	System failure	Commerce Commission

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22	4	2	8	SRC could obtain information from the grid owner on their risk and asset management (planning, reporting, documentation, emergency management etc.).	System failure	Grid owner
23	4	2	8	SRC could hear again from Transpower on their cyber-security management.	System failure	Transpower
24	4	2	8	SRC regularly receives system operator reports on generation capacity security (NZ Generation Balance and the Annual Assessment of Security of Supply).	Capacity security	System operator
25	4	2	8	SRC regularly receives reporting on energy security (Security of supply updates and the Annual Assessment of Security of Supply).	Energy security	System operator
26	3	2	6	SRC could receive presentations from generators on their cyber-security management.	System failure	Generators
27	1	5	5	SRC could obtain information that regulation and compliance monitoring of consumer-premise equipment is adequate, is keeping up with technology and is fit for purpose (hosting capacity of low voltage networks, frequency and voltage response, standards development, awareness of existence of equipment).	System failure	Secretariat
28	2	2	4	SRC has been kept informed of official conservation campaign and security of supply forecasting and information policy (SOSFIP) regulatory development.	Energy security	Electricity Authority and system operator
29	3	1	3	SRC could obtain information from grid owner transmission capacity planning (Transmission tomorrow, asset management documentation, demand forecasting, transmission alternatives, demand response etc.).	Capacity security	Grid owner
30	3	1	3	SRC has requested information on the regulatory arrangements for transmission investment (grid reliability standards, estimating value of lost load, investment analysis and approval).	Capacity security	Commerce Commission and Electricity Authority