

Development of a risk management framework

Planning for a workshop to advance the development of a risk management framework

22 October 2015

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Executive summary

The function of the Security and Reliability Council (SRC) is to provide independent advice to the Electricity Authority (Authority) on the performance of the electricity system and the system operator, and reliability of supply issues. The SRC has considered the structures through which the electricity industry manages supply reliability risks and how it might use a risk management framework to assist it in understanding, communicating and advising on major security and reliability risks.

The SRC has considered, at a concept level, how the use of a risk management framework (RMF) could assist the SRC in undertaking its monitoring role and providing better advice to the Authority. For example, the RMF could improve the communications between risk owners and stakeholders and allow risks arising from multiple triggers to become more visible.

The development of metrics for the likelihood and consequence of identified risks will enable the SRC to better define and prioritise the security and reliability risks that fall within its terms of reference.

This paper is to assist the SRC to progress its thinking on a RMF and establish the metrics for those risks that it will consider, and potentially monitor, as part of its role in advising the Authority on security and reliability issues. The metrics identified through a workshop session will be used to further develop the concept design and select the risks that will be included in the RMF.

SRC members are requested to undertake the preparation described in section 3.1 and provide this to the secretariat by 5pm on Monday 19 October 2015.

1 Introduction

1.1 The purpose of this paper is to provide an outline of the workshop session

- 1.1.1 The purpose of this paper is to outline the content and proposed plan for a workshop session that will take place during the 22 October 2015 SRC meeting. The main objective of the workshop session is to elicit thoughtful discussion amongst the SRC that gives insight and direction to the secretariat on the future development of the RMF.

1.2 The workshop builds on previous papers and discussions

- 1.2.1 On 1 July 2015, the SRC discussed the concept for a security and reliability RMF. The RMF concept drew on past papers and SRC discussions to consider a framework through which material security and reliability risks and their management could be made more visible.

- 1.2.2 The SRC agreed that there is potentially some value in a RMF for the group, and discussed:

- a) establishing processes that facilitate a meaningful SRC discussion at an appropriately high level
- b) ensuring that the next development steps stay small and exploratory at this stage
- c) the potential for the RMF to become big and bureaucratic if it was not appropriately managed, with the risk of it creating unwarranted cost on industry (particularly in terms of data collection)
- d) the need to trust that individual risk owners will appropriately manage their own risks.

- 1.2.3 The SRC Chair contacted members in June 2015 to seek feedback on the performance of the secretariat and the direction of the SRC itself. Two themes in the feedback were that members would like:

- a) to see the SRC focus more on strategic security issues particularly in the light of the potential changes the electricity sector will face in the future
- b) more opportunity to discuss security and reliability of supply throughout the whole supply chain so that a customer perspective can be considered as part of their deliberations.

- 1.2.4 The secretariat has kept this feedback in mind and is keen to ensure the RMF is developed in a way that allows the SRC to:

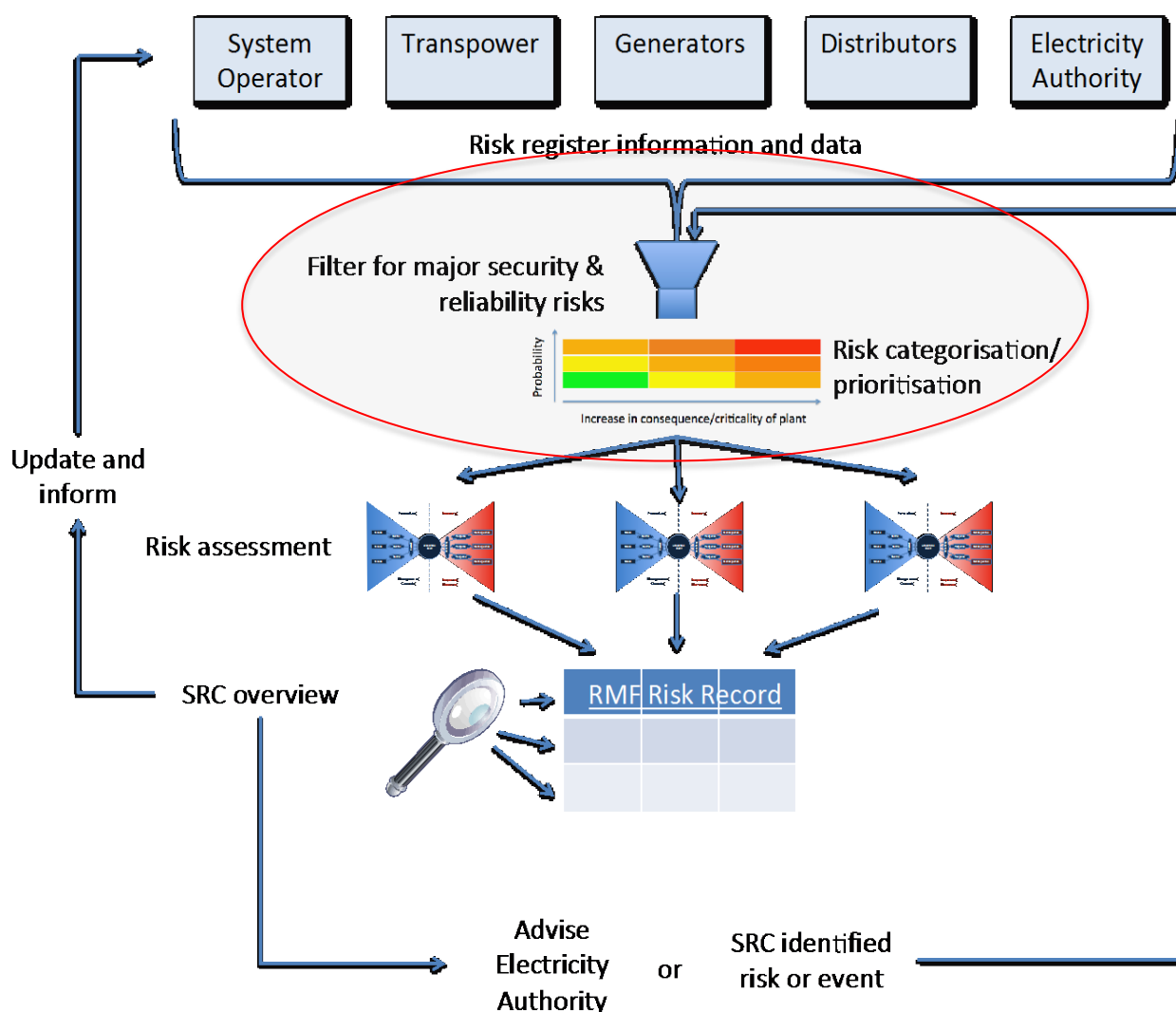
- a) more easily sift strategically important risks from the rest
- b) record risks in language that draws attention to the consumer-level impact of the risk.

2 The workshop will develop metrics for filtering and categorising risks

2.1 The scope of the workshop is limited to the filtering and categorising stages of the RMF

- 2.1.1 Consistent with the SRC's guidance on 1 July 2015, the next step in the RMF concept development is to identify metrics that will be used to filter risks and enable categorisation and prioritisation to take place. The red oval in Figure 1 highlights the RMF development area that the workshop session will cover.

Figure 1 - Overview of the workshop's scope in the context of the entire RMF



2.2 The purpose of the workshop is to determine filtering and categorisation metrics

2.2.1 The primary task to be undertaken during the workshop session is to determine the metrics that will be applied to filter, categorise and prioritise risks that fall within the SRC's ambit.

2.2.2 While some preparatory work has been undertaken by the secretariat, draft metrics have not been fully developed for the SRC to discuss and approve. Instead, the secretariat has developed possible metrics to prompt discussion amongst the SRC at the workshop. That discussion will be an interactive session that draws on the experience and knowledge of SRC members.

2.2.3 The outputs from the workshop session will inform the SRC in its consideration of whether there is value in undertaking further development of the RMF.

2.3 The consideration of metrics will determine what types of risks the SRC will focus on

2.3.1 It would be impractical and unwieldy for the SRC to examine and monitor all security and reliability risks. The SRC can add value by being aware of a subset of the risks – the risks that it

believes are relevant and material to providing advice to the Authority on security and reliability matters.

- 2.3.2 Previous SRC feedback as set out in paragraphs 1.2.2 and 1.2.3 gives important guidance for what sorts of risks the SRC may wish to consider.
- 2.3.3 Establishing metrics will help to set the boundaries within which SRC will operate and, through this, determine the security and reliability risks that it is most interested in. The boundaries need to be defined clearly enough to enable the SRC to fulfil its role as an adviser to the Authority on security and reliability issues.

3 How the workshop session will be run

3.1 Preparation for the workshop

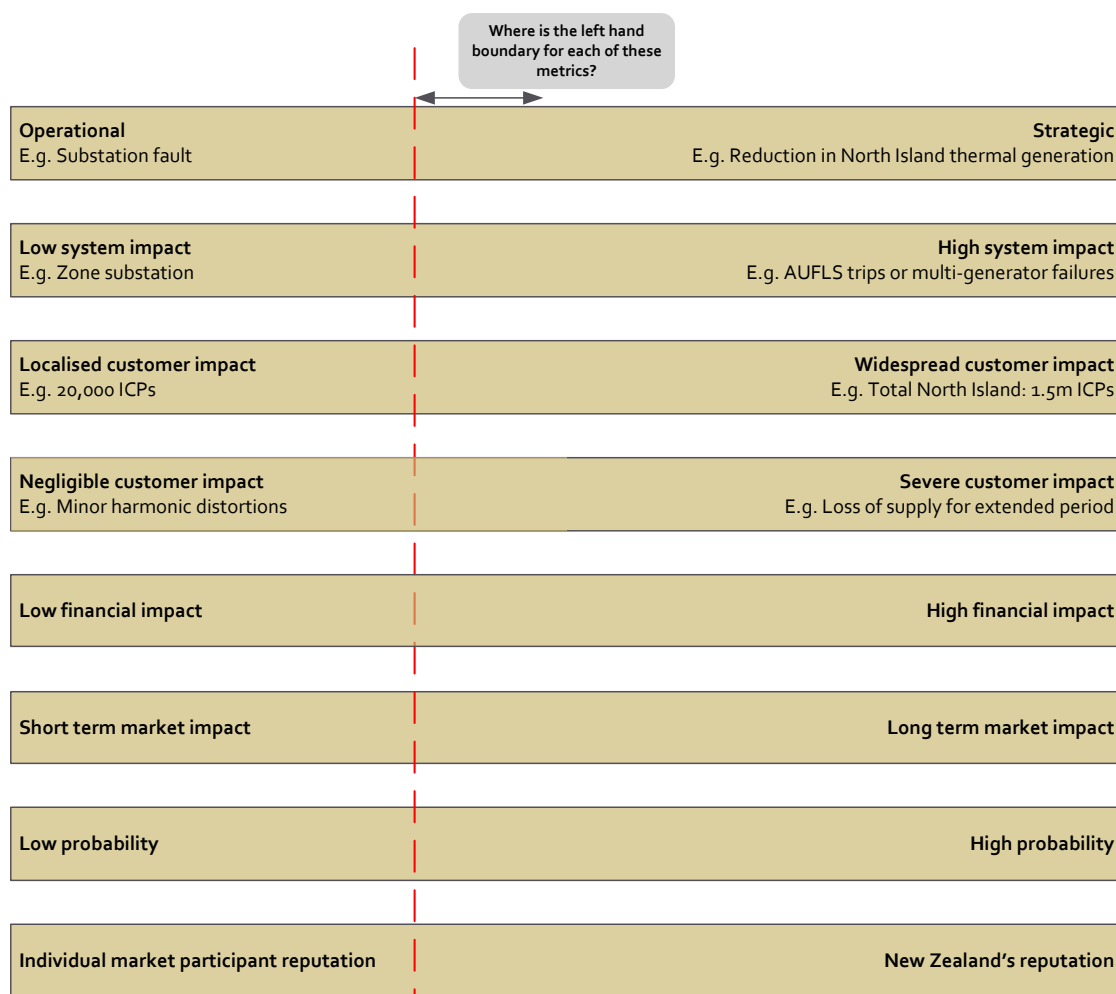
- 3.1.1 In preparation for the workshop on 22 October, SRC members are asked to brainstorm a selection of risks for the SRC to consider. A template for this has been provided in Appendix A.
- 3.1.2 When developing a list of risk examples, SRC members should think quite broadly about the risks that could be considered. It will be better if the risks listed are not limited to risks that definitely fall within the SRC's terms of reference. In order to test the robustness of the metrics, it would be good if some risks are considered to be:
 - a) on the margins of being within the scope of the SRC
 - b) outside the scope of the SRC.
- 3.1.3 It would be appreciated if SRC members could send through their list of risks to the secretariat **before 5pm on Monday 19 October.**

3.2 Initial metrics will be developed further at the workshop

- 3.2.1 In order to facilitate discussion, Figure 2 provides a brief list of potential metrics that the SRC could consider. A scale is included with some examples. The scales have been set deliberately wide and an assumption has been made that it is likely the SRC will be interested in those risks that sit nearer the right-hand side of the scale.
- 3.2.2 The workshop discussion will be facilitated by Bill Heaps on behalf of the secretariat. While the secretariat has a plan for how to structure the workshop discussion, it is mindful that the session needs to be responsive to SRC discussion that starts to narrow down any options under discussion. That plan is as follows:
 - a) Firstly, to discuss, identify and confirm the metrics that are considered to be important by the SRC. This stage may also identify some possible metrics that can be ruled out from further consideration.
 - b) Secondly, to establish a sense of scale for each metric. This will be achieved through consideration of a sample range of risks to identify where they might fit on each metric's scale. This discussion should shed some light on how workable and valuable the metrics are if they were adopted into the RMF.
 - c) Thirdly, to establish what combinations of a risk's categorisation against the metric scales would warrant that risk receiving:
 - i) detailed consideration to enable complete categorisation and prioritisation

- ii) detailed description of the controls and mitigations for the risk in accordance with the Bowtie method.

Figure 2 - Possible metrics to prompt SRC discussion at the workshop



3.3 The output of the workshop is discussion that offers insight for further RMF development

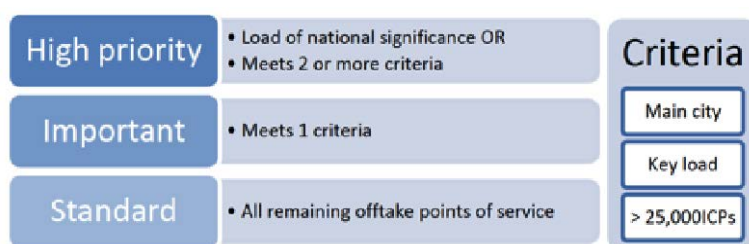
- 3.3.1 The secretariat anticipates that the workshop will stimulate discussion that provides insight on:
- marginal risks that fall either side of particular metrics
 - risks that rate significantly differently on the metrics. If there is no variation seen we could conclude that the range of metrics identified is not required.
 - different perspectives on individual risks and how this manifests in differences in risk ratings applied by individual SRC members.
- 3.3.2 This insight will assist the secretariat with further development of the RMF.

4 Further analysis will be undertaken following the workshop

4.1 Metrics will be presented as clearly as possible

- 4.1.1 The secretariat will use the output of the workshop to propose a set of criteria the SRC could use to determine the risks it will apply its focus to. Should the SRC decide to recommend further development of the RMF, clear and unambiguous presentation of the metrics will be important, as it will communicate the SRC's intended scope to a broader audience.
- 4.1.2 For example, it may be that the SRC will have a set of criteria structured like that used by Transpower (see below) to establish priority ratings:

Figure 3 - Transpower's approach to prioritising risks

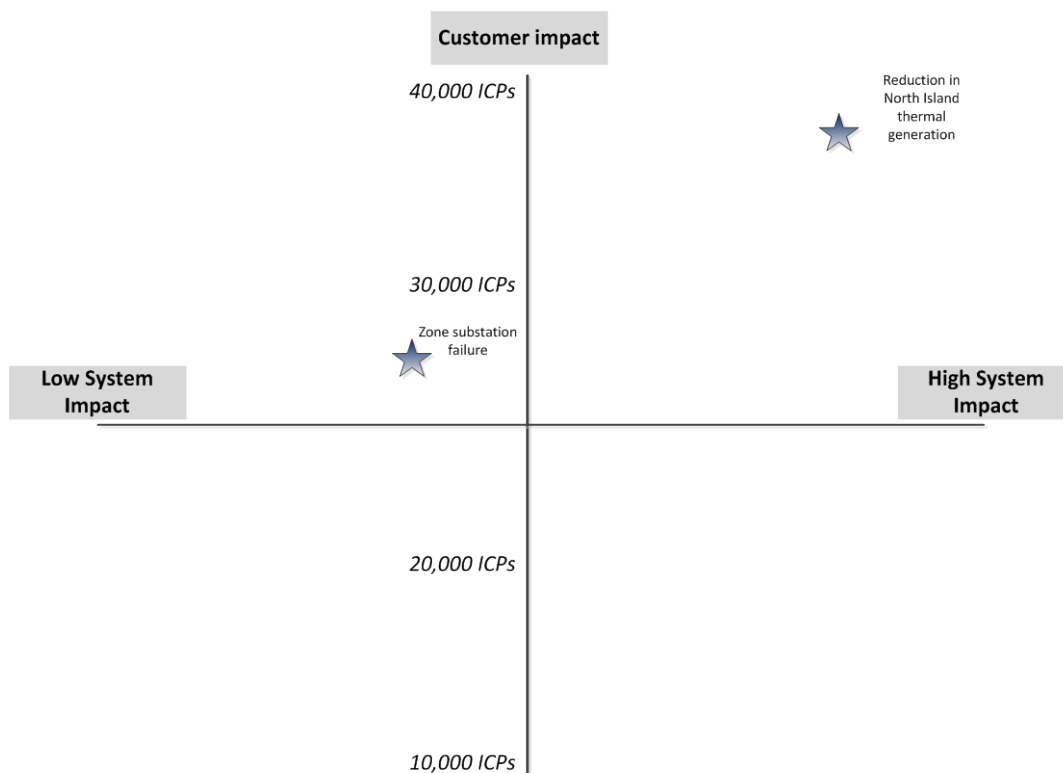


Source: Transpower's Expenditure Proposal for Regulatory Control Period 2 (December 2013)

4.2 Further analysis of the risks will be undertaken

- 4.2.1 The secretariat will seek to develop a useful visualisation of how the risks rate against a selection of the most important metrics. This can be valuable to improve understanding of the risks collectively and their similarities and differences.
- 4.2.2 An example of one possible visualisation is set out below in Figure 4. This example visualises just two metrics, though additional metrics (such as the value of lost load) could be included as appropriate by using other visual cues (such as the size or colour of the data points).

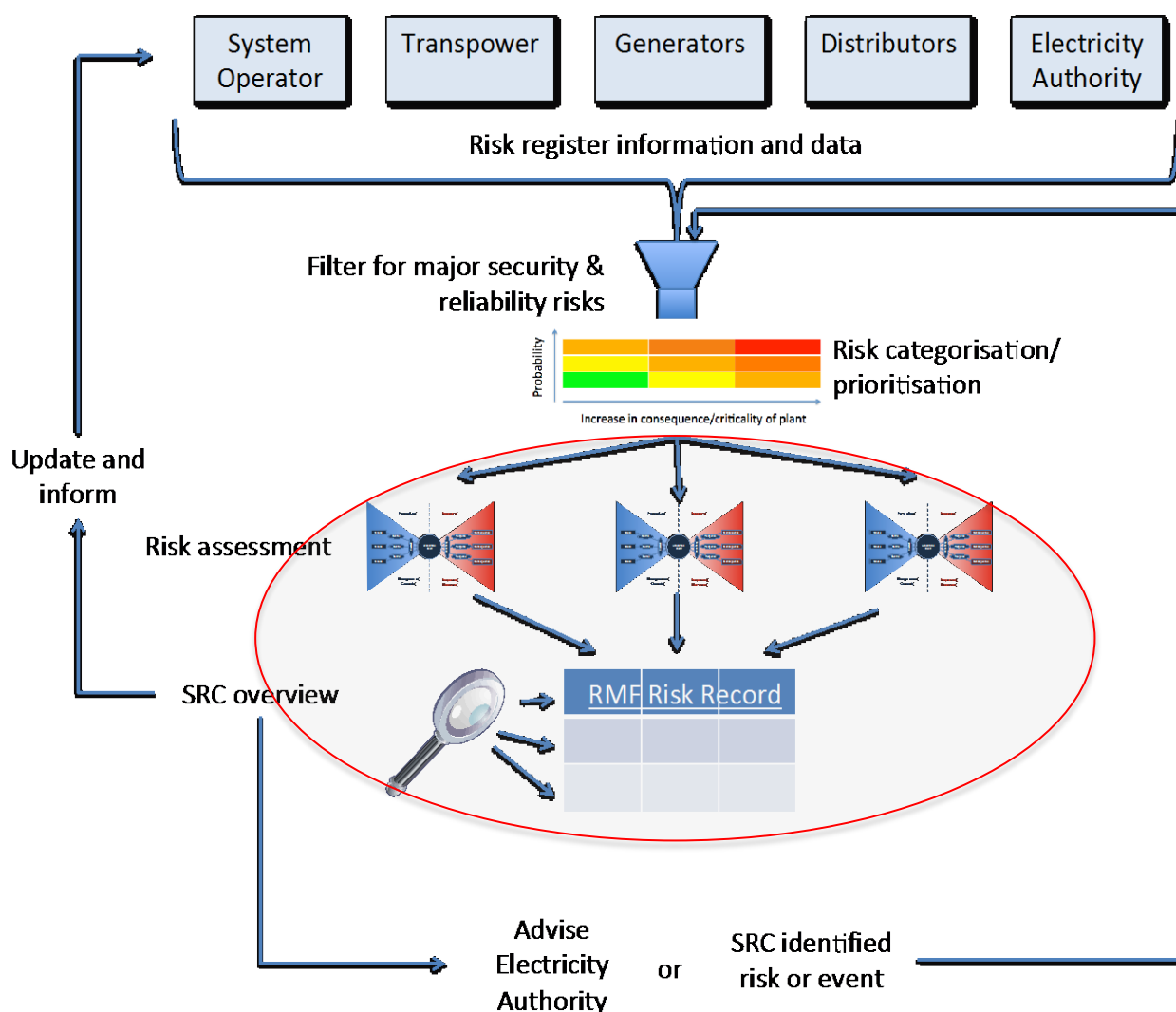
Figure 4 - Example of how workshop outputs could be presented



4.3 The results will inform the SRC's consideration on further development of the RMF

4.3.1 The next step in the development of the RMF will be to produce the procedure for assessing the shortlisted risks that have made it through the filtering. The highlighted area in Figure 5 indicates the next development step for the RMF.

Figure 5 – Next focus area for the development of the RMF



- 4.3.2 Following the workshop the secretariat will research and assess the SRC's most highly rated risks. At this stage research will be limited to publically available information.
- 4.3.3 For the purposes of keeping the development of the RMF small and exploratory, the secretariat will prepare briefing sheets on the top five risks only. The briefing sheets will include an assessment of each risk using the Bowtie method that the SRC has previously discussed.
- 4.3.4 The briefing sheets will be provided to the SRC when it next discusses the RMF. That will likely be an opportunity for the secretariat to seek the SRC's views on whether continued development is warranted and, if so, to seek further refinement of the scope and direction of the RMF development.

Appendix A: SRC member's risk list template

SRC member name:

Risk (one sentence)	Further description/qualifier/comment (optional)
Example 1: Catastrophic damage to major gas pipeline leads to loss of gas powered electricity generation	
Example 2: Volcanic eruption in central North Island causes disruption to northwards transfer of electricity and loss of some central north island geothermal generation output.	
Example 3: Double transformer failure at a CBD zone substation leads to extended loss of supply to the CBD.	

Please email the completed risk list to saltanat.cole@ea.govt.nz before **5pm on Monday 19 October**.