

Security and Reliability Council ::: Meeting Number 16

Venue ::: Level 7, ASB Bank tower, 2 Hunter Street, Wellington

Time and date ::: 9:30 am ::: 15 March 2016

Minutes

Members present

::: Mike Underhill (Chair)
 ::: Barbara Elliston
 ::: Erik Westergaard
 ::: Guy Waipara
 ::: Nigel Barbour (by telephone)

Apologies - Albert Brantley, Vince Hawksworth, Bruce Turner

In Attendance

Electricity Authority (Authority):

::: Carl Hansen, Chief Executive
 ::: Fraser Clark, General Manager Market Services
 ::: Grant Benvenuti, Manager Market Operations
 ::: Callum McLean, Adviser System Operations
 ::: Rory Blundell, General Manager Market Performance (10.35 am until 12.00 pm)

Transpower:

::: Stephen Jay, General Manager Grid Development (from 10.35 am until 11.46 am)
 ::: John Clarke, General Manager System Operations (from 10.35 am until 12.03 pm)
 ::: Bennet Tucker, Senior Analyst Market Operations (from 10.35 am until 12.00 pm)
 ::: Murray Henderson, Senior Analyst Market Operations (from 11.50 am until 12.00 pm)

Others:

::: Bill Heaps, Principal Consultant Strata Energy (from 9.38 am until 10.20 am)

The meeting opened at 09:32 am.

1 Welcome and apologies

1. The Chair welcomed members to the sixteenth meeting of the Security and Reliability Council (SRC).
2. The Chair noted the apologies from Albert Brantley, Vince Hawksworth and Bruce Turner.

Administration

2 Changes to disclosure of interests

3. The Chair reviewed the latest interests register and approved members to act despite those declared interests.

ACTION POINT

1. The secretariat to remove Judi Jones from the interests register.

3 Previous minutes

1. The secretariat noted it had added action #8 to the 22 October 2015 minutes since the SRC last reviewed them.
2. The minutes of the 22 October 2015 and 9 November 2015 meetings were accepted as true and accurate records. *Barbara Elliston moved, Erik Westergaard seconded*

4 Action list

3. The SRC reviewed the current action list.
4. In relation to action item #1, an Authority representative confirmed the System Operator Service Provider Agreement (SOSPA) has been signed with provision made for new performance indicators. The Authority expects that the performance indicators will be developed over time as the parties learn from process of setting indicators and reviewing system operator performance.
5. The Chair requested that action item #2 not be cancelled, but that the secretariat work with the Chair offline to narrow the scope and assign a due date.
6. A member suggested that loss of system inertia in South Australia would be a good example for the secretariat to use for action item 15.

ACTION POINTS

2. The secretariat to ensure action item #2 is not cancelled and to work with the Chair to redevelop the item so that it has a narrower scope and can be assigned a due date.

5 Correspondence

7. There were no questions in relation to the correspondence tabled.
8. The SRC expressed its thanks to Judi Jones for her contribution to the group, commenting that her departure is a loss to the New Zealand industry. Her contribution was characterised by strong customer perspective gathered from her experience with customer complaints.

ACTION POINTS

3. The secretariat to prepare a thank you letter to Judi Jones.

Reliability of supply

6 Further development of the SRC's risk management framework

Bill Heaps joined the meeting at 9.38 am

1. Bill Heaps, the facilitator, thanked the SRC for the workshop in October 2015. It was a useful step to further development of the risk management framework (RMF). In summary, he was happy with how the RMF hangs together.
2. A member noted the RMF is moving in the right direction. Members discussed the RMF with the facilitator, noting that:
 - a. economic cost to consumers is the key measure rather than just ICPs affected, especially with the 'Loss of supply to a rural area > 30,000 ICPs for 5 days or longer' event
 - b. the relatively low priority of 'three or more events within a one year period of loss of supply to a residential area of more than 100,000 ICPs for three days or longer' compared to an extended reserve activation ought to be corrected
 - c. the prioritisation generally needed to increase the focus on consumers
 - d. even a short official conservation campaign appeared low priority compared to losing 100,000 ICPs for three days, as consumers would still be able to utilise electricity during the campaign
 - e. there are some regional particularities about the timing and duration of outages that could create unusually high economic impact (such as regions supporting the dairy industry)
 - f. there is scope to add a new risk event that covered regional disruptions that may not trigger the 30,000 ICP threshold but that would still be of high consequence. Examples might include the loss of supply to Eastland or the West Coast. The economic cost to the region should be the driver of this risk
3. A member queried what it is that communities do to mitigate these types of risk. What are the costs to mitigate the risks, and the options available? Members noted that:
 - a. this risk mitigation is primarily at the distribution level
 - b. opportunities exist to improve community resilience through backup generation at community hubs (such as an ambulance bay)
 - c. in many rural areas, farmers share stand-by generators
 - d. such mitigations could be captured on right-hand side of the RMF bowties.
4. A member noted it would be useful to catch solutions by building from the bottom up. The facilitator advised the Bow-tie Method allows for, and works best with a combination of top-down and bottom-up approaches.
5. The members and attendees discussed the scope and detail of the RMF, noting that:
 - a. the SRC (including its secretariat) need to be careful about where to stop when populating detail into the RMF, especially on the right-hand side of the bowties, in order to avoid delving into individual firms' responsibilities
 - b. the SRC's role could include identifying gaps (like Penrose or in relation to the management of medically dependent consumers) and advise the Authority Board
 - c. the process flushes out a level of information that is not well or widely known

- d. most industry players will have their own emergency response plans
 - e. the process of identifying gaps will help set the level of detail
 - f. the SRC do not believe their role is to police participants' risk management
 - g. inconsistency of language for risk management across the whole industry will make the SRC's RMF a challenge
 - h. driving good risk conversations in the industry is a desired outcome
 - i. risk owners are responsible for identifying what they need to do to mitigate risks.
6. The Chair commented that media attention in recent years has been on distribution-level outages. The Authority Chief Executive advised reliability monitoring is a renewed focus for the Authority's market performance team.
 7. A member noted people and organisations have a tendency to be better at managing low- or medium-risk events that they regularly encounter, but it is harder to focus on black swan events like a major Wellington earthquake.
 8. The SRC addressed the questions posed in the paper as follows:
 - a. question 1: the SRC suggested that the ICP thresholds in the risk events should be refined during further development. The SRC questioned whether normalising outages to aggregate economic cost might help with the relative prioritisation of some of the types of outages in the risk register. The SRC would like the secretariat to consider adding a risk regarding a regional outage that can cause significant economic cost but doesn't trigger the 30,000 or 100,000 ICP thresholds of the other risks
 - b. question 2: the SRC were generally happy with the criteria for assessing probability and consequence, though the RMF should take environmental or social consequences into account. The secretariat was also requested to look at the assessment of the two risks "Short period of conservation" and "Extended Reserve activation" and review whether their categorisation is correct in comparison to some of the other loss of supply risks
 - c. question 3: the SRC's earlier discussion highlighted that consumer impacts were generally underweighted relative to system risks. The tendency for people to underestimate risk was also noted
 - d. question 4: no challenges were made to the risk event categorisation method (the colour-coding in Figure 2)
 - e. questions 5-7: the SRC agreed with these questions relating to the presentation of the bowties
 - f. question 8: the SRC considered it was too early to be able to answer whether the information in each bowtie was appropriate, but noted it was important that the risk accountabilities were plainly visible
 - g. question 9: the SRC agreed the RMF development is on the right track and is expected to be beneficial/useful
 - h. question 10: the SRC noted new health and safety legislation might have adverse effects on the duration of outages and sought comment from the secretariat. The new legislation may impact on the ability of lines company to do work on 'live' lines

- i. question 11: the SRC considered that its earlier advice to the Authority was sufficient and that no additional advice is needed until there is something more substantial to report.:-

Bill Heaps departed the meeting at 10.20am.

ACTION POINTS

- 4. Secretariat to comment on new health and safety legislation and what this may mean in the context of reliability outcomes
- 5. Secretariat to consider engagement with industry and the Commerce Commission in further development of the RMF
- 6. Secretariat to assess what the threshold should be for a risk that the SRC 'can live with', and incorporate into further development of the RMF.

7 Industry arrangements for information security

- 9. The secretariat introduced the paper, noting that plenty of industry players are interested in participating in an information security exercise, though the secretariat perceive that there is some inertia to overcome for such an exercise to actually proceed.
- 10. The SRC briefly discussed the Authority's role with respect to information security, noting that while it appears the Authority is not the lead government agency in this regard, the Authority should nonetheless expect questions from the media if a serious information security incident occurs in the electricity sector.
- 11. The SRC addressed the questions posed in the paper as follows:
 - a. question 1: in terms of strategies to encourage participants to organise an information security exercise, the SRC suggested the Authority observes how NIST engage the industry to learn lessons. Members also noted that the lines of responsibility are not clear, individual organisations run their emergency response plans, and that in the early 1990's, the industry came together in a collaborative way to develop the wholesale market, and this sort of industry self-organisation may be able to be encouraged again
 - b. question 2: The SRC agreed that the proposed actions in section 3.2 of the paper seemed appropriate
 - c. question 3: The SRC agreed that the Authority taking no further action on the matters set out in section 3.3 of the paper was appropriate. A member noted the abundance of internal audits being undertaken within the industry and that the risk seems low
 - d. question 4: The SRC requested no further information from the secretariat
 - e. question 5: The SRC did not identify any further advice to give to the Authority.

Security of supply

8 Thermal generation decommissioning

John Clarke, Bennet Tucker, Stephen Jay and Rory Blundell joined the meeting at 10.35 am.

- 12. The Chair invited Transpower representatives to introduce their thermal generation
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decommissioning papers. Transpower noted that:

- a. there have been three reports from Transpower on this topic, the latest of which is from Transpower's grid development area and highlights constraints on the grid
 - b. if Huntly's Rankine units are retired and nothing happens by 2019, there will be issues for security of supply (with respect to voltage stability, energy security and capacity security)
 - c. if Huntly's Rankine units and Tiwai both leave the power system in 2019, energy security won't be a problem for approximately 5 years, but North Island capacity will still be an issue
 - d. the location of new generation build is important to reduce the risk of grid constraints.
13. The Chair noted that the reports appeared to be a call to action. A Transpower representative agreed, adding Transpower is careful not to scaremonger while highlighting options and associated impacts.
 14. A member noted transmission investment is quite binary and queried if Transpower would be delving into a detailed cost benefit analysis of a variety of options. A Transpower representative stated they would develop a case for investment in the upper-North Island given feedback that new generation near Auckland is unlikely. In the absence of credible generation options on the table it is hard to develop cases for other generation location options.
 15. A member queried how Huntly's eventual decommissioning would be accounted for in terms of the transmission network. A Transpower representative advised that Transpower anticipates that some investment will be required in the upper North Island, but until they know the location of any confirmed replacement generation it is challenging for Transpower to justify an investment case with the Commerce Commission.
 16. An Authority representative queried if there were many accumulating conservative assumptions built in, for example in the 'prudent forecast' that could lead to the final calculations being overly conservative. A Transpower representative advised that the Commerce Commission's grid investment test process will test all assumptions, including demand forecasts. A member asked if the 'prudent forecast' was a suitable assumption; a Transpower representative discussed the challenges in demonstrating how prudent the forecast might be, given the factors that might affect the outcome. Delaying an investment application due to under-forecasting is high risk; approval too early can result in higher costs if the investment is committed.
 17. A Transpower representative noted it was good to have transmission investments approved and ready to go, as once approved there is the ability to slow down delivery or accelerate an investment based on the most up-to-date information available.
 18. A member asked Transpower to consider the view that new technology and different supply-side options would reduce demand, that modelling Huntly necessarily has some very binary scenarios, and that Tiwai could start running its equipment to failure.
 19. Members asked several questions of the system operator:
 - a. A member observed that the assumption of hydro lake levels on 1 January is fairly important and queried the assumption. The system operator agreed, noting that there is another assumption behind it – that hydro generators would be extra-conservative with water in a situation where they knew there would be no Huntly Rankine units from 1

January 2019.

- b. A member queried if the hydro risk curves could be better adapted to account for contingent storage. The system operator responded that if a major resource consent change were made to permit access to contingent storage ahead of conservation campaigns commencing, a review could be appropriate.
 - c. A member queried whether the loss of combined cycle gas turbines (CCGTs) would change the likelihood or severity of under-frequency events. The system operator responded that there would generally be lower system inertia with less CCGTs on the system, but that it has plenty of experience managing the system with low inertia as it happens overnight on most days.
20. In terms of reporting, the SRC agreed that:
- a. if security of supply is to be solved by market solutions, this needs to be supported by the publication of timely and relevant analysis
 - b. information is valuable for industry decision-makers, but is also valuable for investment analysts
 - c. Transpower's reports are necessarily focussed on technical information, but readers of these reports should bear in mind that there is another layer of market/commercial matters that are also important
 - d. the market will be awaiting future reporting with interest.
21. A Transpower representative advised a further report is planned to show the sensitivity of transmission investment to different generation locations.
22. The SRC summarised the concerns raised in Transpower's reports as:
- a. national energy security
 - b. North Island capacity security
 - c. Upper-North Island capacity security.
23. A Transpower representative noted that even if Genesis reversed its decision on the Huntly Rankine units, if the Tiwai smelter subsequently exits the market, then the Huntly Rankine units may well also exit at short notice due to oversupply of energy. This would still result in capacity security concerns in the North Island.
24. The SRC agreed that generators factor political risks into their decision-making and they will be keen to avoid a high-profile situation of under-supply.
25. The SRC addressed the questions posed in the paper as follows:
- a. question 1: The SRC agreed that the grid owner's report enhances the industry's understanding of the transmission issues involved, but (as the grid owner intended) is just the first stage of information
 - b. question 2: The SRC agreed that the system operator's report provides a thorough analysis of a variety of 2019 security of supply scenarios
 - c. question 3: The SRC wishes to be kept updated with information related to thermal generation decommissioning

d. question 4: The SRC's advice to the Authority is to include the following matters:

- Transparency of information is vital as it will enable industry players and investors to make the most-informed decisions they can in the circumstances.
- At this stage, the SRC believes there are still a range of options available (generation build, transmission enhancements, demand-side alternatives), though each requires some lead-time if they're to assist in a timely manner. The SRC understands that some bulk-supply solutions would need a 'green light' by late 2016 in order to be in place for winter 2019.
- The SRC is concerned that owners of such options may not be aware of the transmission constraints highlighted in the grid owner's report and what impact that may have on their construction lead-times.
- The Authority should continue to monitor the emerging security of supply situation closely. The Authority should have plans in place to be able to respond to security of supply issues.
- The public and media interest in this issue will pose ongoing communication challenges.

Stephen Jay departed the meeting at 11.46 am

ACTION POINTS

7. Secretariat to prepare a letter of advice to the Authority

9 2016 annual assessment of security of supply

26. A system operator representative introduced the paper, noting that the scenarios it examines are only as good as the assumptions.
27. Given the extensive discussion on paper #8, the SRC had no questions for the system operator. The Chair noted the annual assessment was a well-written and informative paper.
28. The SRC addressed the questions posed in the paper as follows:
 - a. question 1: The SRC had no suggestions for how to avoid or lessen the system operator having to make assumptions about when future generation is modelled to come online
 - b. question 2: The SRC did not request any further information from the secretariat
 - c. question 3: The SRC had no advice for the Authority, but noted its satisfaction with the system operator's reporting.

ACTION POINTS

8. Secretariat to note the SRC's satisfaction with the annual assessment in the SRC's advice of the Authority

10 The National Winter Group's report on winter 2016

Murray Henderson entered the meeting at approximately 11.50 am

29. A system operator representative introduced the findings, noting that capacity margin for 2016
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is the second highest margin produced by any National Winter Group.

30. The SRC addressed the questions posed in the paper as follows:

- a. question 1: The SRC is confident the power system capabilities for winter are suitable
- b. question 2: The SRC did not request any further information from the secretariat
- c. question 3: The SRC agreed to advise the Authority of its confidence in relation to winter 2016.

ACTION POINTS

9. Secretariat to note the SRC's satisfaction with the National Winter Group's findings in the SRC's advice to the Authority

Bennet Tucker, Murray Henderson and Rory Blundell departed the meeting at approximately 12.00 pm

Performance of the system operator

11 The system operator's performance for the year to 31 August 2015

31. An Authority representative introduced the report.
32. The SRC agreed with the Authority's report comments seemed fair and that it was a good year.
33. The Chair was noted the high quality of security of supply reporting from the system operator during the year.
34. The SRC addressed the questions posed in the paper as follows:
 - a. question 1: The SRC did not request any further information from the secretariat
 - b. question 2: The SRC's advice to the Authority will note its satisfaction with the performance of the system operator and the fairness of the Authority's report.

John Clarke departed the meeting at approximately 12.03 pm

General Business

12 General Business

35. The secretariat explained that the Authority has published the joint Vector/Transpower action plan arising from the Penrose substation fire and intends to publish the associated six-monthly updates against the action plan. This information will not be provided to the SRC unless there are specific matters the Authority seeks the SRC's advice on.
36. The secretariat gave the SRC an update on recent appointments to the SRC. The Authority will publicise all appointments once confirmed.
37. The Chair noted he had recently met with the Chief Executive and Chair of the Authority to discuss the activities of the SRC. The Chair noted he is keen that the SRC continue to enhance how it proactively identifies risks to the Authority. A member asked whether smart grid technology will alter this role; the Chair responded that will be addressed in a paper at the 21 June 2016 meeting.

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38. The secretariat noted that it has formed a preliminary view that the SRC is not a 'Person Conducting a Business or Undertaking' for the purposes of the Health and Safety at Work Act 2015. The secretariat will be seeking further advice on this issue.

ACTION POINTS

10. Secretariat to provide further advice to the SRC on the application of the Health and Safety at Work Act on the SRC's activities.

13 Administration

39. There were no administrative matters discussed.

14 Meeting close

40. The meeting was closed at 12.12 pm.