

Reliability centred monitoring

The role of the Security and Reliability Council in relation to post-event reviews

27 September 2013

Summary

In response to SRC interest in being presented with a dashboard of reliability measures to enable them to assist the Authority with advice on reliability issues, the Electricity Authority (Authority) prepared a paper for the May 2013 SRC meeting that described the nature of failure in complex systems and the implications for reliability centred monitoring. The paper discussed that the nature of these failures meant that they could not be readily determined from a dashboard of system performance statistics, and instead recommended that the SRC focus on understanding the latent faults that caused or contributed to specific incidents.

The Authority has since worked with Transpower to understand what is already being done to monitor faults on the power system. The Authority, in its role as SRC secretariat, requested Transpower brief the SRC on the processes and safeguards in place to learn from power system events and the risks posed to system security and reliability.

The presentation is expected to cover:

- the processes that Transpower goes through to review faults on the power system
- how reports are commissioned and completed on more significant faults
- how data is captured, entered into a database and analysed
- how trend analysis is done.

The Electricity Industry Participation Code 2010 (Code) is largely silent on the subject of investigating and learning from system events. Apart from an overarching requirement for system operator to be reasonable and prudent, the only explicit requirements are in clauses 8.60-8.65 of the Code, which set out the process by which under-frequency events are investigated, the causer determined and the causer's payment of an event charge is rebated to relevant participants.

Based on discussions with Transpower, the Authority notes that:

- there is a wide variance of participant resourcing of investigations into system events and engagement with the system operator
- at least one system operator information request has been refused when the information existed but there is no regulatory requirement to keep it
- the lessons of international events are only ever learned from in an ad hoc way. Many Transpower staff attend a variety of international forums and conferences; they sometimes do bring back insights that are assimilated into Transpower's business process
- it is unclear whether international manufacturers are keeping New Zealand customers up-to-date on lessons about managing particular assets
- the system operator's event database lacks tools to support learning from any trends in reported events. In addition, the data is entered manually by system operator staff which carries a risk of error and inconsistency that impairs trend analysis.

The SRC may wish to consider the following questions.

Q1. Do Transpower's processes allow it and the industry to learn from actual events (individually, and collectively through trends) and to identify and follow up on any latent faults that are discovered?

Q2. What reporting might the SRC need to discharge its role?