

2005 REVIEW AND ASSESSMENT OF SYSTEM OPERATOR'S PERFORMANCE

August 2005

Review and Assessment of System Operator's Annual Performance

This paper outlines the Commission's review and assessment of the system operator's performance in meeting its contractual and rule obligations in the review period 1 March 2004 to 28 February 2005.

A. Introduction

- 1 The Electricity Governance Regulations (Regulations) and the Electricity Governance Rules (Rules) require the Electricity Commission Board (Board) to review the performance of the system operator once every financial year.

B. Purpose

- 2 The purpose of this report is to provide a review and assessment of the performance of the system operator in accordance with the requirements of the Rules and Regulations.

C. The Board's requirements in conducting the review and assessment

- 3 Provisions relating to reviewing the system operator's performance are set out in both the Regulations and the Rules.
- 4 Regulation 47 requires the Board to review the performance of the system operator at least once in each financial year and the review must concentrate on the system operator's compliance with:
 - a. its obligations under these rules and regulations;
 - b. the operation of these regulations and the rules;
 - c. any performance standards agreed between the system operator and the Board; and
 - d. the provisions of the system operator's agreement.
- 5 Regulation 48 requires the Board to show that it has taken account of the following matters when conducting the review:
 - a. the terms of the system operator agreement;
 - b. the reports from the system operator to the Board;
 - c. the performance of the system operator over time in relation to Part C of the rules;
 - d. the extent to which acts or omissions by other parties have impacted on the system operator's performance;
 - e. reports or complaints from any person;
 - f. the fact that real time co-ordination of the power system involves a number of complex judgments and inter-related incidents;

- g. any disparity of information between the Board and the system operator;
and
 - h. any other matter the Board considers relevant.
- 6 Rule 14 of section II of part C of the Rules¹ requires the Board to review and assess the performance of the system operator in the period of the then current policy statement. The Board's review and assessment of the system operator is required to be published within ten business days after the meeting at which it completed the review and assessment.

D. Approach used to conduct review and assessment

- 7 This review is intended to meet the requirements of Regulations 47 and 48 and rule 14 in section II of Part C, and is the first under the new governance arrangements. It covers the period 1 March 2004 to 28 February 2005.
- 8 The system operator provides monthly performance reports and has also provided the Board with its own annual review of its performance, which is attached as Appendix 1. The system operator is required to present this to the Board at the same time as the draft policy statement (rule 14 in Section II of Part C). As it was the first such self-assessment presented, Commission staff and the system operator discussed the form and content of the report prior to its preparation.
- 9 The self-assessment provides a commentary on many aspects of the system operator's performance and is an important input into this review by the Commission. To improve the content of future reviews, Commission staff have published the system operator's self-assessment and will publish the Commission's own review and invite comments from interested parties.

E. Review and assessment of the system operator's performance

Introduction

- 10 In completing the review and assessment of the performance of the system operator, Commission staff had regard to the requirements of the Regulations

1 ¹ Rule 14 states, "At the same time as the **draft policy statement** is submitted to the **Board** pursuant to rule 10, the **system operator** will also submit to the **Board** a review and assessment of its performance in the period of the then current **policy statement**. This self-review will contain such information as the **Board** may reasonably require from time to time to enable the **Board** to review the **system operator's** performance in carrying out its functions with respect to the **policy statement** during this period. The **Board** will review and assess the performance of the **system operator** in that period having regard to that self-review and such other matters as the **Board** considers relevant. The **Board's** review and assessment of the **system operator** will also be **published** within **ten business days** after the meeting of the **Board** at which it completed the review and assessment."

and the Rules, and, in particular, the matters the Board is required to take into account.

- 11 The performance of the system operator was reviewed and assessed under the following headings:
 - a. meeting principal performance obligations and other rules;
 - b. review and implementation of policy statement and procurement plan;
 - c. system security forecast;
 - d. disaster recovery plan;
 - e. other duties and roles;
 - f. “going the extra mile”;
 - g. relationship building; and
 - h. looking forward.

Meeting principal performance obligations

- 12 The system operator has been found to be prudent and reasonable in its obligation under rule 2.1 of Section II of Part C of the Rules, to avoid cascade failure of assets resulting in the loss of demand, arising from either excursions of frequency or voltage, or imbalances of supply and demand. There have been no instances of loss of demand arising from either excursions of frequency or voltage, or imbalances of supply and demand during the review period.
- 13 Frequency excursions were maintained within the annual frequency limits specified in rule 2.2.3 of Section II of Part C of the Rules and no excursions occurred below 48 Hz or above 52 Hz in either island.
- 14 There were five instances of time error exceeding the +/- five second limit specified under rule 2.2.5 of Section II of Part C of the Rules, although there were no instances where the daily time error elimination required under rule 2.2.6 was not achieved.

System operator breaches

- 15 According to the system operator’s own annual review, it has self-reported 26 breaches of the Rules. The circumstances and number of instances that the system operator reported a self-reported breach are presented in the table below.

Circumstances	Number
Constraint modelling errors	1
Dispatch instruction errors	4

Accidentally operating equipment beyond advised capability	2
Frequency keeping dispatch errors	3
Grid emergency management	1
Information provision to other service providers	5
Outage constraint modelling	8
Reserve modelling	1
Other	1

- 16 The system operator explains in its self-review that, in respect of the breaches relating to frequency keeping dispatch errors and information provision to other service providers, new processes and tools have been implemented that greatly reduce or eliminate the chance of similar breaches occurring again.
- 17 However, the greatest number of self-reported breaches (8) has occurred from mistakes made in modelling outage constraints. The majority of these breaches relate to outage changes notified to the system operator at short notice. It is accepted that the number of breaches is small relative the total number of outage changes in the year of approximately 5000. The system operator has recorded that it is concerned about the number of similar breaches in this category and is developing a strategy to reduce the occurrence of such errors to the lowest possible level. The Commission supports the initiative taken by the system operator to reduce the number of breaches of this type.
- 18 The Commission is also concerned about the total number of breaches and those breaches that have occurred as a result of seemingly elementary failures in processes and tools. However, on the positive side, the system operator is to be commended for the high standard of integrity it has shown by self-reporting its own mistakes and by its willingness to find and fix the root of any problem.
- 19 According to the system operator's annual review, in addition to the 26 self-reported breaches, there have also been nine breaches alleged against the system operator by other participants, all of which the system operator has denied. Three of these cases relate to the obligation on the system operator to use reasonable endeavours to provide notification of permanent and temporary outage constraints to participants as soon as possible. This is an issue that has also been the subject of debate in the review of the policy statement.
- 20 The system operator has presented an approach to address its own issues and the notification requirements of participants and it is hoped resolution of the matter can be reached.
- 21 Two breaches relate to two occasions when the system operator reduced the reserve requirements to zero when there were insufficient generation offers and/or reserve offers and a feasible dispatch solution could not be obtained

using SPD. This is an issue that has caused debate over the wording contained in sections of part G of the Rules. An outcome of the resulting breach settlement agreement is that the Commission is actively pursuing options to resolve this issue. Wording of the policy statement has been amended as an interim measure until the Commission has completed its investigation into the matter and changes are implemented.

Breaches alleged by the system operator against other parties

- 22 While conducting its duties, the system operator has also alleged 56 breaches against other parties most of which related to:
- Under-provision of contracted interruptible load as reserves;
 - Non-compliance with dispatch instructions; and
 - Failure to acknowledge dispatch instructions.

Review of the Policy Statement and Procurement Plan

- 23 The Policy Statement and Procurement Plan are both very important schedules in the Rules that the system operator is required to review annually². Their review and consultation require a considerable amount of time and effort. The system operator has reviewed each document during the review period (1 March 2004 to 30 June 2005).
- 24 The Policy Statement describes the policies and means the system operator intends to observe and use to comply with its principal performance obligations in the next twelve months. It also outlines the policies and means by which the scheduling and dispatch are adjusted to meet the dispatch objective.
- 25 The Procurement Plan specifies, for each ancillary service, the principles that the system operator will apply, and outlines the process it will follow, in making an assessment of the quantity required to be purchased.
- 26 The system operator has submitted all relevant documents on time, and is to be commended for following an open and transparent consultation process with industry participants in each case prior to forwarding the documents to the Commission. The system operator has listened to and, in many cases, followed the advice of submitters. This cooperative attitude has made the subsequent Commission consultation and review process smoother and less divisive.
- 27 However, there have been a small number of issues in each draft document arising from changes the system operator has pursued and to which groups of submitters objected. Key issues that have arisen from the review of these documents include:

² For the policy statement and procurement plan this requirement is contained Rule 10 in Section II of Part C and Rule 4 in Section IV of Part C, respectively.

- a. monitoring of instantaneous reserve (procurement plan);
 - b. limitation of liability and force majeure provisions for ancillary service agents (procurement plan);
 - c. setting reserve requirement to zero when there are insufficient generation offers and/or reserve offers (policy statement); and
 - d. notification of permanent and temporary constraints (policy statement).
- 28 Monitoring of instantaneous reserve, (a) above, concerned the frequency with which samples of demand or output are provided to the system operator. The requirement was increased in the first draft procurement plan. There was much debate within the industry on this proposed change and it was agreed that, rather than change the requirements in the procurement plan, the sample frequency required would remain until such time as the system operator could demonstrate that the change had benefits that would be greater than the costs.
- 29 Participant's views of the first procurement plan were that the provision of ancillary services was an open-ended risk because ancillary service agents had no provision in the Regulations to cap their liability. Nor was there any defence for ancillary service agents against allegations of non-provision for reasons of force majeure. The Commission agreed to recommend changes in the Regulations to provide limitation of liability and force majeure provisions for ancillary service agents.
- 30 Perhaps unsurprisingly, the issues in (c) and (d) in clause 27 have also been the subject of a number of breaches referred to in the previous section. Both are issues the Commission expects to be resolved by rule changes.
- 31 Overall, the Commission is pleased with the process by which the industry and the system operator regularly review the two documents to improve the policies, processes, and means by which the system operator intends to procure ancillary services and comply with the PPOs.
- 32 The Commission notes that implementation of the policy statement has been largely successful, though, as mentioned below, there have been a number of issues (zeroing reserve requirements, timeliness and accuracy of constraint notifications) that have caused the system operator to amend parts of the policy statement to improve clarity and accuracy.
- 33 The Commission also notes that implementation of the procurement plan was successfully completed for all five ancillary services. It also commends the system operator for the successful development and consultation on the standard form ancillary service procurement contracts.
- 34 The Commission is pleased that a Black Start testing regime is being developed and notes that a successful first test was completed in conjunction with Mighty River Power in May 2005.

System Security Forecast

- 35 Another significant body of work is the system security forecast (SSF). The system security forecast is a forecast of the system operator's ability to meet its PPOs over the ensuing ten-year period. Rule 15 in section II of part C of the Rules requires the system operator to prepare, publish, and provide to the Board a SSF once every two years. It is also required to revise the forecast every six months should, in the reasonable opinion of the system operator, changes to the power system so warrant.
- 36 The system operator produced its first SSF on time on 1 December 2004.
- 37 The SSF has been found to be extremely useful by Commission staff and anecdotal evidence suggests that the industry finds the SSF a valuable reference resource.
- 38 The system operator plans to publish the first set of updates to the SSF during August.

Meeting requirements of the System Operator Service Provider Agreement

- 39 The System Operator Service Provider Agreement (Agreement) contains a number of obligations pertinent to this review. In particular, the Contract requires the system operator to:
- a. have in place and comply with daily back-up procedures for all data and processed data held by the system operator;
 - b. transfer back-up data and processed data to a location at least 100km away from its premises at least once a week;
 - c. keep copies of any software required to provide the services at a location at least 100km away from the premises it (normally) uses to provide its services;
 - d. have in place and comply with disaster recovery plans to cope with the destruction of the system operator's premises, which will enable the system operator to continue to fulfil its duties with the minimum of disruption.
- 40 The system operator has certified that it meets the requirements (a), (b), and (c) above. The system operator has produced a disaster recovery plan and obtained the approval of the Commission for the plan as required under the terms of the Agreement.

Other duties and roles

- 41 In addition to its regulatory obligations, the system operator has provided advice on exemptions and also made a valuable contribution to the rule change process. It has promoted a number of rule changes and made submissions on many others. It has also been asked to provide advice on issues that have not been the subject of a rule change.

- 42 Commission staff were satisfied with the quality of the system operator's work during the review period. Some reports produced by the system operator in its capacity as a consultant to the Commission were not as timely as Commission staff would have liked. It is recognised that the system operator has had difficulty resourcing work at times and has moved to correct this problem by employing additional full time staff .
- 43 Commission staff and the system operator meet monthly to discuss outstanding issues and the prioritisation of activities requested of the system operator by the Commission.
- 44 The system operator actively supported the Commission's system operations committee at its monthly meetings.
- 45 In addition to its other roles, the system operator has a number of administrative roles provided in the Rules including:
- a. assess and issue dispensations;
 - b. handle and assess asset capability statements;
 - c. handle and assess asset test plans;
 - d. manage planned outage coordination process.
- 46 It also has bilateral arrangements provided for in the Rules to, for instance, provide outage assessments for participants.
- 47 Each of these processes has been managed in a professional manner.

“Going the extra mile”

- 48 The system operator has provided leadership in organising industry support and advice in regional security issues in both the upper South Island and upper North Island areas. Since the first regional security issues appeared in the upper North Island in 1998 and the upper South Island in the winter of 2004, the system operator has actively informed stakeholders of any emerging security issues. The resulting stakeholder working groups have been successful in providing stakeholder participation and agreement to ensure regional security issues are managed effectively and efficiently.
- 49 The system operator has also been proactive in considering changes in its policies and processes. This approach is demonstrated by:
- a. the development of its business performance charter referenced in the 2005 Policy Statement;
 - b. the twice yearly industry workshops to which it commits itself;
 - c. the face-to-face consultation meetings it has conducted; and
 - d. staff availability for Commission advisory groups.

Relationship building

- 50 In its first sixteen months, the system operator has quickly recognised the importance of communication and relationship-building for it to be effective in its various duties under the Rules and its Service Provider Agreement. It has demonstrated that it is working hard to ensure that there are no surprises and actively engages with the industry on all relevant topics.
- 51 The Commission also appreciates the manner in which the system operator has accepted the Commission's decisions when they have been counter to its own views.
- 52 The Commission is keen to see this commitment continue and grow.

F. Attachments

- 53 A copy of the System Operator Annual Review 2004/05 is attached as Appendix 1.

G. Summary

- 54 In summary, the Commission considers Transpower has performed well in the first sixteen months as provider of the system operator contract. As system operator, Transpower has:
- a. met all its deadlines to complete work prescribed in the rules; and
 - b. provided the necessary processes and tools required to meet its obligations under Part C and G of the Rules.
- 55 Looking forward, the Commission would like to see:
- a. fewer system operator breaches;
 - b. less reliance on manual processes which should lead to fewer breaches of the Rules.