



Market Systems Loss of Service

4 December 2010

Introduction

The following report reviews a market system outage that occurred on Saturday 4th December.

This outage affected participants and the report endeavours to outline the sequence and nature of the events that occurred.

Summary of events

On Saturday 4 December, a problem with temperature control equipment in Transpower's Wellington computer room caused temperatures in the room to rise to over 30°C during a period of hot weather.

Having been alerted that at least one SAN switch had failed and there was significant risk to the continued operation of the computer room, the market systems support team commenced an urgent switchover of the market system to the standby site in Hamilton. On-call staff from Transpower, together with system support vendors, were called in to perform the normal, documented switch-over procedure.

Human errors were made in following this complex procedure. The errors resulted in a longer time to complete the switchover. The usual time for this procedure is approximately 45 minutes. On this occasion, it took two hours. There was no active Bid/Offer feed during this time. System dispatch from the NCC was via the Stand Alone Dispatch (SAD) tool.

When the switchover was complete, the procedural errors were found to have caused a problem with the outbound data feeds from the systems, preventing normal dispatch instructions being sent. The NCC co-ordinators elected to dispatch manually by phone while the data feed was restored. This extended the effective outage time of the market systems by approximately one hour.

Key Timings and Business Impacts

- The switchover commenced on 13:07 with system preparation work. Final system checking (following restoration) was completed at 18:30.
- SAD was online from 14:01 to 15:55.
- Phone dispatch was undertaken between 15:55 and 16:51
- Bids and Offers could not be received by the market systems between 13:47 and 16:05 (note: bids and offers from the market were received to NZX during this period).
- Real Time Pricing solutions for 13:55 and 15:50 inclusive were not produced owing to the database work being carried out.
- Four SDPQ solutions between 14:00 and 15:30 inclusive, the 14:00 SDS solution and 15:00 PDS solution were not published



Analysis and Key Actions

The trigger for the market systems switchover was the high ambient temperature in the computer room. While this did not cause the problems with the switchover, the urgent nature of the task placed pressure on the on-call staff. Early warning of a potential problem might have avoided the need to perform the switchover under urgency.

There are some review and remedial actions that, without further analysis, have already been identified for consideration.

Action 1. Confirm that the configuration of the alarms in the computer rooms provide appropriate warning of rising temperatures.

The difficulty in following the documented switchover procedure has highlighted a training/familiarity issue. Some of the on-call staff had not performed an urgent switchover before.

Action 2. Review the switchover procedure to confirm it is clear, complete and usable in practice.

Action 3. Confirm all on-call staff have received practical training in the switchover process.

Action 4. Ensure periodic refresher training is undertaken.

Action 5. Consider whether routine switchovers would be appropriate to assist in maintaining knowledge and skills in the switchover procedure.

Given the ongoing review of this event, it is likely that further analysis will reveal additional remediation actions that are appropriate.