



Whirinaki Dispatch Query – 15 June 2010

Background

On 15 June 2010, the System Operator dispatched the Whirinaki Power Station (Whirinaki) between trading periods 21-24 (10:07 - 11:44).

The System Operator has been asked what led to the dispatch of Whirinaki on 15 June 2010. Following an initial report into the event (published on 23 June 2010), the System Operator has conducted an internal investigation into the event and the real time actions taken by the System Operator in response.

This report updates the initial report by including the details of the event and summarising the findings from the internal investigation. The report concludes by addressing a number of questions asked of the System Operator regarding the use of Whirinaki on 15 June.

Details of the Event

On the morning of 15 June 2010, the unavailability of HVDC Pole 1 and reduced generation offered from Otahuhu B and Southdown power stations led to low forecasted North Island residual generation between 10:30 and 12:00.

Between 09:00 and 10:00 there were a number of bona-fide reductions in offered generation from Huntly and Tokaanu. As a result of these bona-fides, residual generation reduced to ~200 MW for the trading periods between 10:30 and 12:00. Standby residual check notices issued prior to 10:00 showed this low residual generation.

At 09:49 Genesis advised that there were “issues” with a further 200 MW of generation from Huntly Unit 2 and Huntly Unit 2 may have to be removed from service later in the afternoon prior to the evening peak.

Given there was low residual generation for the trading periods between 10:30 and 12:00 and, coupled with concern that further bona fide reductions may be received from those generators who had already reduced their generation or from Huntly Unit 2, the System Operator coordinator determined that had a further bona-fide reduction been received that there would have been a situation where there was insufficient supply to meet demand. Huntly Unit 6 was already scheduled (as indicated in the 9:30 SDPQ) to be run on merit at ~22 MW and ~28 MW respectively between 10:30 and 11:30.

Due the slow start and slow ramp capability of both Huntly Unit 6 and Whirinaki, the coordinator considered it prudent to dispatch both Huntly Unit 6 and Whirinaki prior to 10:30 to avoid a further 15 – 20 minute delay associated with slow ramping generation.

Accordingly, at 10:07 Whirinaki was dispatched to a minimum level of 25 MW and then up to 75 MW from 10:26. Huntly Unit 6 was dispatched to 15MW at 10:26.

The discretion on Whirinaki was ended at 11:44 as load was slowly reducing and residual generation was increasing. The plant started to be dispatched down from 11:30.

The discretion on the Huntly Unit 6 remained until 11:50.

Review of Actions Taken

The internal review has analysed the decision on 15 June to constrain on Huntly Unit 6 and Whirinaki between 10:07 and 11:50. In this regard, our review looked at the information made available to the co-ordinator in making the decision to constrain on both Whirinaki and Huntly Unit 6 and the wider context in which the decision was made.

Based on our review, we have concluded that the following factors were considered by the coordinator in making his decision to constrain on Huntly 6 and Whirinaki:

- the residual generation was forecast to be low;
- advice of a number of issues occurring with large generators (Huntly, Otahuhu B and Southdown), and corresponding bona-fide reductions, raised concern regarding the risk of further bona-fide reductions;
- advice from Genesis regarding Huntly Unit 2 was interpreted as there being a risk of a bona-fide reduction from Huntly Unit 2;
- Huntly Unit 6 was already scheduled to run (on merit) from 10:30 - 11:30;
- any further bona-fide reductions (or increase in demand) would have likely required both Huntly Unit 6 and Whirinaki to be scheduled to meet demand;
- the slow start and slow ramping characteristics of Huntly Unit 6 and Whirinaki necessitates these generators being dispatched 15-20 minutes prior to being required.

Given the co-ordinator's perception of the immediacy and seriousness of the risk of insufficient supply to meet demand (i.e. system security was at risk), an urgent decision (as a discretionary action) was made to manage security by constraining on Huntly Unit 6 and Whirinaki.

Questions and Answers

There have been a number of questions asked of the System Operator relating to the event. The answers to these questions, which are not otherwise addressed in the report above, are set out below.

1. Why was the HVDC restricted to ~400 MW?

The HVDC was limited to ~400MW for economic reasons. Whilst there were more than 400MW of North Island Sustained Instantaneous Reserves offered at that time the price of these reserves was such that it was not economic to schedule more than ~400MW across the HVDC link.

2. Does the reserve market cover the risk of Huntly Unit 2 tripping?

Yes, the reserve market does cover additional risks (such as the risk of Huntly Unit 2 tripping) however in this event the System Operator constrained on generation due to the lack of residual generation. The only remaining offered generation was slow ramping generation.

3. Could Huntly Unit 6 and Whirinaki be constrained on at a minimum and then let SPD schedule them from then on:

Yes, this is what did occur during this event. Huntly Unit 6 was started and dispatched to its minimum operating level of 15 MW. The coordinators had advised Whirinaki that they would be dispatched to full load but only ended up dispatching them to 75 MW (minimum operating limit of 25 MW per unit for the three units). It is noted that Huntly Unit 6 was already scheduled to run between 10:30 - 11:30.

4. What response to the SRC notices did the System Operator see from participants?

A review of offer changes, both increases (+) and decreases (-), which also includes intermittent generation, through the period of 08:45 – 11:45 on 15 June saw the following changes: -

Trading Period	Time	Total Offer Changes
19	09:00 – 09:30	0 MW
20	09:30 – 10:00	-220 MW
21	10:00 – 10:30	-173 MW
22	10:30 – 11:00	-179 MW
23	11:00 – 11:30	-234 MW
24	11:30 – 12:00	-224 MW

Table of Offer Changes

The System Operator is happy to answer any further questions the industry may have on this event.