Customer Advice Notice

To: CAN NZ Participants
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Revision of:

Winter Initiatives - Changes to Variable Reserves

As part of the Winter Initiatives project initiated by the Electricity Commission, the System Operator is implementing a full variable reserves solution during a market system outage planned for Thursday 24th June 2010.

Currently when there are insufficient energy and reserve offers, the Scheduling, Pricing and Dispatch (SPD) application makes up the mismatch in demand and generation by breaking a generation constraint with a $100,000/MW of generation penalty (known as a deficit generation infeasibility). This means that when there are insufficient energy and reserve offers, the Contingent Event (CE) and Extended Contingent Events (ECE) are always covered and not necessarily the demand. This solution is not dispatchable and as a result the System Operator will modify the Reserve Adjustment Factors (RAFs) in 20% increments.

With the new solution, SPD will be configured so it will automatically break the reserve constraint before it breaks the generation constraint for CE risks, when there is a shortage of offers. This means that when there is insufficient energy and reserve offers, demand will be met and the ECE will be covered. The deficit in reserve covering a CE will be “met” with a $100,000/MW of reserve penalty. This will result in a dispatchable solution (as demand is being met).

If this situation occurs in final pricing, it will be treated as an infeasibility situation (known as a deficit CE reserve). This will normally be resolved by increasing the Net Free Reserve (NFR) variable to obtain a feasible final pricing solution.

To protect against cascade failure in such a situation, the reserve constraints for an ECE have been split out (i.e. there is now a constraint violation penalty associated with deficit CE reserve and with deficit ECE reserve) and are given priority. If there are not sufficient offers to cover an ECE risk, SPD will clear deficit energy before deficit reserve. This is not a dispatchable solution and in such a situation load shedding would be initiated.

Under normal operating circumstances, the RAFs will be set to 1. The RAFs will be set to 0 following an Interruptible Load (IL) event as the dispatched reserves are no longer available (spinning reserve has been converted to energy and IL has been tripped). Once the situation is stabilised and the IL is restored, the RAFs will be reset back to 1. RAFs will no longer be reduced for a shortage of offers.

The main changes to SPD are:

- SPD reserve 6s and 60s CVPs (Constraint Violation Penalties) will be split into 6s CE, 60s CE, 6s ECE & 60s

A revision of this notice will be issued if there is any change to the situation above.

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ECE.
- Updated SPD objective function to use the new CVPs.
- Updated and reordered CVP values. (Of significance; Deficit CE Reserve $100,000/MW, Deficit Energy $500,000/MW, Deficit ECE Reserve $800,000/MW)

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