

IN THE NATIONAL ELECTRICITY TRIBUNAL

No. 2 of 2005

BETWEEN:

NATIONAL ELECTRICITY CODE ADMINISTRATOR LIMITED**(ABN 18 073 942 775)**

Applicant

and

PELICAN POINT POWER LIMITED**(ABN 11 086 411 814)**

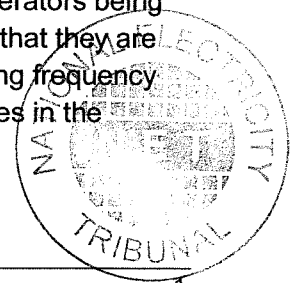
Respondent

Amended Agreed Statement of Facts and Positions**Events of 14 March 2005**

- 1 The National Electricity Code Administrator Limited ("**NECA**") and Pelican Point Power Limited ("**Pelican Point Power**") agree to the facts and positions set out in this statement made in support of NECA's Application to the National Electricity Tribunal dated 12 August 2005.
- 2 During the morning of 14 March 2005 there was a single-phase to ground fault on the Davenport 275 kV line at Playford sub-station at approximately 6:39am (AEST).
- 3 Following this fault, two generating units at Northern Power Station substantially reduced power output and the Vic-SA (Heywood) Interconnector opened, causing system frequency in South Australia to fall.
- 4 Following these events, the system frequency in South Australia fell at a maximum rate of around 1.5Hz/second to a minimum frequency of 47.61Hz (recorded at Para).
- 5 The frequency was between 47Hz and 49Hz for approximately 9.1 seconds.

Agreed Positions

- 6 In an interconnected electricity system, one of the key purposes of generators being required to comply with registered performance standards is to ensure that they are robust enough to 'ride-through' significant system disturbances, including frequency disturbances, so that such disturbances do not lead to cascading failures in the electricity system.



- 7 Clause 5.2.5(a)(2) of the Code places an obligation on Generators to ensure that subject to clause 5.2.5(a)(1), its facilities are operated to comply with its performance standards registered with NEMMCO.
- 8 Clause 3.3 of Pelican Point Power's performance standards requires that in respect of the generating units at the Pelican Point Power Station ("**Pelican Point**"):

'Each *generating unit* is capable of continuous uninterrupted operation during the occurrence of:

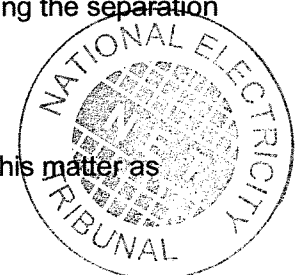
(1) *Power system frequency* at any level within the following ranges for the given duration:

Frequency range (Hz)	Duration
47 to 49	2 minutes
51 to 52	2 minutes
49 to 49.5	8 minutes
50.5 to 51	8 minutes
49.5 to 50.5	continuous

- 9 The power system frequency recorded at Para recorded at approximately 6:39am on 14 March 2005 was within the ranges specified in performance standard 3.3(1) in that at all times, the power system frequency remained either within the range 49.5Hz to 50.5Hz, or was in the range 49Hz to 49.5Hz for a period of less than 8 minutes or was in the range 47Hz to 49Hz for a period of less than 2 minutes.
- 10 The combined cycle facilities at Pelican Point include three generating units: two gas turbines and one steam turbine. The gas turbines provide waste heat to a heat recovery steam generator that in turn powers the steam turbine. By design, therefore, the steam turbine can only operate if one or both of the gas turbines are operating.
- 11 Prior to the fault at approximately 6:39am on 14 March 2005, one gas turbine and the steam turbine were operating. The gas turbine tripped approximately 2.5 seconds after the loss of the interconnector. The steam turbine was able to continue to generate for the further period of approximately two minutes on stored heat. Thermal inertia enabled the steam turbine to gradually ramp down its generation.
- 12 The gas turbine therefore did not provide continuous uninterrupted operation for the required duration as required by Pelican Point's performance standard. Because it shut down automatically approximately two minutes after the fault, technically the steam turbine also did not provide continuous uninterrupted operation on and from the time of the shutdown. Accordingly Pelican Point Power breached the Code by reason of the failure of the two generating units to comply with the performance standard.
- 13 Load shedding of 578MW was required to restore frequency following the separation of South Australia from Victoria.

Agreed process for determination

- 14 NECA and Pelican Point Power request the Tribunal to determine this matter as follows:



- 14.1 Without a hearing as the matter can be adequately dealt with by written submissions comprising the Application and this Agreed Statement of Facts and Positions;
- 14.2 Without a directions hearing;
- 14.3 The Chairman of the Tribunal determine this matter without the need to constitute a three person panel;
- 14.4 The matter be determined by the Tribunal as soon as practicable.

Appropriateness of order sought

- 15 NECA and Pelican Point Power seek orders in terms of the minutes attached.
- 16 NECA and Pelican Point Power submit that the order sought by NECA, in respect of the breach of clause 5.2.5(a)(2) of the Code at approximately 6:39am on 14 March 2005, for the imposition of a financial penalty of \$100,000, of which \$80,000 is suspended for a period of 12 months, is appropriate in the circumstances.
- 17 The penalty sought is appropriate, applying many of the factors set out by French J in *Trade Practices Commission v CSR Ltd (1991) ATPR 41-076* for assessing appropriate penalties under section 76 of the *Trade Practices Act 1974*. These factors, as applied in this case, include:
 - 17.1 Pelican Point Power has fully co-operated with NECA in its investigation of this matter;
 - 17.2 Pelican Point Power has not contested the Application;
 - 17.3 The circumstances leading up to the trip of Pelican Point included the non-credible failure of both Northern Power Station units to provide continuous uninterrupted operation and the opening of the Vic-SA (Heywood) Interconnector;
 - 17.4 It was not practically possible to test the response of Pelican Point to disturbances of the sort that occurred on 14 March 2005, neither during commissioning of Pelican Point nor since. Doing so would require the operation of the power system in an insecure state;
 - 17.5 As such, Pelican Point Power did not know that Pelican Point would trip if such a disturbance occurred and could not have taken any steps to prevent Pelican Point tripping on 14 March 2005;
 - 17.6 The steam turbine continued in operation for approximately two minutes after the loss of the interconnector, two minutes being the duration of continuous uninterrupted operation required of that generating unit following a reduction in power system frequency to 47.61Hz. As such, the steam turbine was robust enough to 'ride-through' the frequency disturbance that occurred at approximately 6:39am on 14 March 2005. The subsequent shutdown of that generating unit was a consequence of the design of the combined cycle facilities at Pelican Point, not the frequency disturbance, and occurred approximately 1 minute and thirty seconds after system frequency had recovered to normal levels at about 50Hz;
 - 17.7 While it is appropriate for the performance standard to apply separately to the steam turbine, because it is capable of independent response when one

or both gas turbines is delivering heat for steam, it would be inappropriate to separately penalise Pelican Point Power for a failure of the steam turbine to comply with the performance standard in circumstances where the shut down occurred, not in direct response to the system disturbance, but as a consequence of the steam turbine not having waste heat from one or both of the gas turbines and therefore not being capable of independent response;

17.8 In the attached letter from National Electricity Market Management Company Limited (NEMMCO) to NECA, which NECA received on 1 September 2005, NEMMCO has concluded that:

- it is most likely that the whole 240MW load block that was shed at 47.8Hz would have been shed whether or not the gas turbine had tripped; and
- if the gas turbine had not shut down, it is possible that the last 14.5MW of load actually shed at about 47.62Hz might not have been shed;

17.9 Given load shedding of 578MW was required to restore frequency following the separation of South Australia from Victoria, the possibility that 14.5MW was shed in response to the gas turbine trip is not material. Furthermore, NEMMCO has said that there is no guarantee that the conclusions it has reached are correct. Pelican Point Power should be the beneficiary of this doubt.

17.10 Following 14 March 2005, Pelican Point Power took immediate steps with the original equipment manufacturer to improve the response of Pelican Point to changes in frequency, and made modifications on 25 April 2005.

17.11 Pelican Point Power is unlikely to breach clause 5.2.5(a)(2) of the Code in the future; and

17.12 The financial penalty, together with the publicity surrounding this action will constitute sufficient general deterrence against further breaches of performance standards.

Phillips Fox

FILED: 7 September 2005

This Amended Agreed Statement of Facts and Positions was filed jointly on behalf of the NECA and Pelican Point Power by **Phillips Fox**, solicitors, of Level 44, 120 Collins Street, Melbourne, Victoria, 3000.

The address of Pelican Point Power is Level 37, Rialto North Tower, 525 Collins Street, Melbourne, Victoria 3000.

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