

Date: 10th October, 2008

Mr. Ian Woodward
Chairman, Reliability Panel
Australian Energy Marketing Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Email: submissions@aemc.gov.au

Dear Sir,

**Frequency Operating Standards for Tasmania -
Interim Frequency Standard Determination Supplementary Submission**

This letter provides Gunns Ltd support for the interim determination by the Reliability Panel on the subject of the review of the Frequency Operating Standards in Tasmania. Gunns proposes that two issues require further consideration:

- 1) the need for an automatic access standard that does not discriminate against thermal plant (S5.2.5.3) and
- 2) setting a fixed MW limit as the mechanism for limiting generator contingency.

We strongly support the interim decision to compress the normal operating frequency tolerance bandwidth to 4Hz (48-52Hz) from the current 5.5Hz (47.5-53Hz). We are, however, disappointed that the upper end of the frequency operating band is set at 52Hz rather than 51.6Hz, despite information provided from Gunns that such operation is not possible for its proposed cogeneration plant in Tasmania. We acknowledge that the existing NER clause S5.2.5.3 will allow NEMMCO to facilitate connection of such plants and permit a trip at a frequency above the normal operating frequency band (51Hz in Island mode), and include them in the OFGSS scheme. In our view, this approach is at odds with the NEL Objective of achieving balance between investment and reliability (Economic Efficiency), because it does not give sufficient investment certainty to non-network investors, and makes them un-necessarily subject to the network operator's co-operation and agreement. The Rule needs to be changed or modified to address this.

While acknowledging that the new standard will provide a pathway to allow connection of CCGT and thermal generators into the grid in Tasmania, there are two key fundamental issues that, in our view, need to be clearly addressed in the final determination. These changes are critical to enable implementation

of the standard and to eliminate discrimination against thermal plant technology and the barrier to the entry of efficiently sized thermal cogeneration in Tasmania.

Application of NER S5.2.5.3 Generator Response to Frequency

Following publication of the interim decision, Gunns sought formal advice from NEMMCO regarding how they intend to interpret this clause with regard to our plant capability. NEMMCO has advised in writing that, although in principle it is feasible to apply this rule, it needs formal advice from Transend that it is practical to design the OFGSS scheme to accommodate our machine's characteristics.

The fundamental concern with this approach is that it provides no investment certainty and hence limits the likelihood of successful development of significant co-generation plants in Tasmania.

Our interpretation of clause S5.2.5.3 in NER is that if no changes are made to the Reliability Panel interim determination there will be no effective automatic access standard available for steam plant such as that proposed by Gunns. Without an effective automatic access standard there is significant commercial risk to the proponents of such a generating plant. This is certainly the case for the cogeneration plant that Gunns will install, and it poses a significant risk to its project. We have made it clear in our discussions with the Panel that, while our plant has significantly more capability than CCGT plants at the lower end of the frequency band (<47Hz) and hence can operate with a 5Hz band width, its characteristics are skewed such that it meets the 5Hz band between 46.6Hz and 51.6Hz, not 47 Hz to 52 Hz.

We believe that the standard should explicitly reflect such plant characteristics in its definition of an automatic access standard, instead of requiring a negotiated access process to address it. There is no recognition of this in the current determination and it is a major barrier to potential participants.

This situation presents difficulties for Gunns. Our discussions with Transend have further reinforced our concerns.

The major concern from our discussions with NEMMCO and Transend is the implication that both view clause S5.2.5.3 as allowing plant that fits into the OFGSS scheme to be connected, rather than modifying the OFGSS to facilitate connection of plant with adequate frequency range capability. Our view is that the proposed standard is not sufficiently robust to address cogeneration plants, while showing bias towards CCGT technology and existing Hydro generation. Such a discriminatory rule introduces uncertainty to Gunns proposal, however the following suggested modification eliminates such undesired outcomes.

We propose that the Frequency Operating Standard be redefined in terms of not only specific upper and lower frequency operating points, but also to include a band width clause for each type of plant. For example, CCGT: 47-52 HZ, Thermal Units(steam turbines): 46.6-51.6HZ; Wind Farms: 46-51HZ. This will:

1. Provide Automatic Access certainty, irrespective of plant technology.
2. Place obligations on NEMMCO and the TNSP to design the OFGSS, UFLSS, FCSPS control schemes to fit the plant declared capability, as part of its automatic access standard.
3. Eliminate investment uncertainty that comes from a plant required to go through a negotiated access process with no certainty of guaranteed access. This is a commercial risk to investors and will create a significant barrier to entry of co-generation units while standards favour CCGT technology.

Therefore it is requested that the Reliability Panel seriously consider altering the rule to specifically state the standard in terms of frequency bandwidth for automatic access. This modification, along with the existing clause S5.2.5.3 of the NER will put the onus on NEMMCO and Transend to design their control schemes to accommodate the plant capability, and thus derive the settings for each plant to manage security.

This is not a new concept as existing UFLSS schemes do exactly this by balancing reserve procurement based on selected settings to trip loads to recover frequency. Loads are required to compulsorily participate in such schemes. Further, the existing OFGSS in Tasmania was, we presume, designed initially to accommodate all the generators that were connected at the time of entry to the NEM, and if the proposed generators were connected at that time the scheme would have taken their operating characteristics into account.

Limiting Generator Contingency

The principle of addressing the system's capacity for handling generator contingency by setting a fixed maximum generator connection size is overly rigid and limits development of the supply side of the Tasmanian region with particular impact on co-generation opportunities.

The Gunns generator is sized 190MW although its net export to the grid is 60MW. The Reliability Panel has placed a hard limit of 144 MW as the largest unit in Tasmania, which means that a Gunns generator trip must always be accompanied by a simultaneous load trip to ensure that the contingency limit is maintained. Such a hard limit seems unnecessarily coarse and poses a real

threat to efficient cogeneration plants and thermal units to be installed in Tasmania.

The Reliability Panel has identified that it is necessary to limit the maximum generator contingency. In section 4.4.1 of the Report the Panel states:

“The Panel considers that ideally the size of the contingency should be determined dynamically following an economic trade off between the benefits of the resulting generation and the costs of the associated FCAS.”

Gunns strongly supports this policy position.

In spite of this policy preference the Panel has proposed a fixed limit on generator size (144MW). The basis of the 144MW seems to be that it is the existing limit. Analysis detailed in submissions posted on the AEMC website suggests significantly higher limits could apply for large periods of time (Alinta Energy (Tamar Valley) secondary submission).

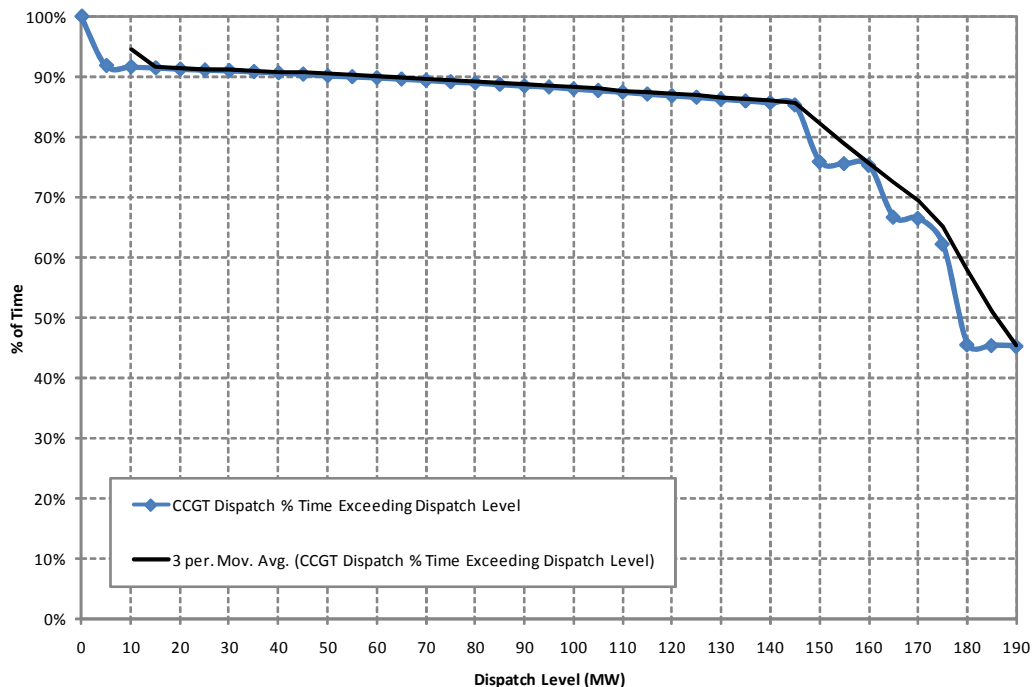


Figure 1 Co-optimised CCGT dispatch duration curve

Fixing the largest generating contingency is poor policy because it:

- 1 does not acknowledge the dynamic nature of the contingency issue;
- 2 restricts the possibility of market outcomes to the generator contingency limit;
- 3 requires a modification of the Frequency Operating Standard by the Reliability Panel rather than allowing the limit to be varied as part of the management process of the system.

In the Report the Reliability Panel states:

“The Panel also considered a variable contingency size limit that depended on variables such as system load and Tasmanian inertia, for example, a contingency limit of say 15% of the Tasmanian demand. The Panel notes that a disadvantage of a fixed limit of 144 MW is that at periods of high load, and higher FCAS availability, this may be overly restrictive on the operation of the higher efficiency generating unit, and thus is likely to be less efficient. However, the Panel notes that a variable contingency limit would still be arbitrary to some degree and may not necessarily reflect the economic trade off between contingency size and FCAS costs.”

We believe that formal authority should be given to NEMMCO to formulate a constraint equation to determine the maximum dispatchable generator in each trading period, for inclusion in the NEMDE dispatch process. This approach is also consistent with the way that similar size issues are managed currently by NEMDE. For example, constraints that limit generator output and loadings of transmission lines to be less than the ratings are managed by constraint formulations. There are no restrictions placed within NER or reliability standards on the size of transmission lines to be built or generators to be installed. Bigger sized transmission lines and generators are currently registered and effectively operated without any need to specify maximum size in the standard. The inclusion of a specific unit size of 144MW is a major departure from this, and will cause a significant barrier to bringing efficient plant into Tasmania.

In summary, Gunns recommend a number of modifications to the interim standard, and inclusion of additional clauses in the rules, to address the following:

- The standard should specifically state that a specified frequency bandwidth of operation is deemed to meet the automatic access standard (for example: 5Hz operating range).
- The frequency operating standard should be supported by an appropriate design of the OFGSS and UFLSS to accommodate specific frequency duration operating capability of Cogeneration, CCGT and other thermal units without any commercial disadvantage to new generators, and
- NEMMCO be given authority to develop appropriate constraints to dispatch the maximum generating capacity to a number of key measurements in Tasmania, particularly system load, Basslink flow, system inertia, and other factors (such as to facilitate Basslink reversal).

Gunns once again acknowledges and supports the significant step taken by the Reliability Panel to introduce a standard that can now accommodate CCGT units in Tasmania. However the lack of certainty of automatic access standards for

commercial thermal plants is problematic. Additional modifications to the Standard are proposed in this letter, and a recommended approach for managing the generator contingency size will eliminate barriers to entry of all types of efficient generating units and will ensure security of supply is maintained.

Please contact Greg Stanford or Pieter Blom if you have any queries on these matters.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'GR Stanford', is centered on the page. The signature is fluid and cursive, with the first two letters 'GR' being particularly prominent.

Greg Stanford
Infrastructure Manager
Gunns Limited