

**NEMMCO**

National Electricity Market  
Management Company Ltd

ABN 94 072 010 327

Sydney Office

4 June 2008

Dr John Tamblyn  
Chairman  
Australian Energy Market Commission  
PO Box H166  
South Sydney NSW 1235

Dear John,

**Minor Change to Technical Requirement for Generators – Clause S5.2.5.3(c)(6)**

NEMMCO requests the Australian Energy Market Commission (**AEMC**) to consider making a Rule under section 91 and section 96 of the *National Electricity Law (NEL)*. The proposed Rule change seeks to correct a minor drafting error with respect to clause S5.2.5.3(c)(6) in the *National Electricity Rules (Rules)*.

NEMMCO considers that the proposed Rule change is non-controversial in nature as it is unlikely to have a significant effect on the national electricity market (**NEM**), as is required for an expedited consultation process under s.96 of the NEL.

A description of the proposed Rule, statement of the issues concerning the existing Rules, and how the proposed Rule addresses those issues consistent with the National Electricity Objective (**NEO**) is in Attachment A.

NEMMCO would be pleased if you could have these matters considered by the AEMC. For further details, please do not hesitate to contact Taryn Maroney on (02) 8884 5609.

Yours sincerely,



Brian Nelson  
Head of Regulatory Affairs and Compliance

Enc. Attachment A: Request for Rule change

**Mansfield Office**  
PO Box 2516  
Mansfield QLD 4122  
Tel: (07) 3347 3100  
Fax: (07) 3347 3200

**Melbourne Office**  
Level 12  
15 William Street  
Melbourne VIC 3000  
Tel: (03) 9648 8777  
Fax: (03) 9648 8778

**Norwest Office**  
PO Box 7326  
Baulkham Hills BC NSW 2153  
Tel: (02) 8884 5000  
Fax: (02) 8884 5500

**Sydney Office**  
Level 22, Norwich House  
6-10 O'Connell Street  
Sydney NSW 2000  
Tel: (02) 9239 9199  
Fax: (02) 9233 1965

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**Attachment A****1. Statement of Issues**

This section outlines the relevant background, provides a summary of the current provisions and identifies the issues with the Rules regarding clause S5.2.5.3(c)(6). Additionally, NEMMCO's proposed solution to this issue is discussed.

**1.1 Background**

In February 2006, NEMMCO requested the AEMC make a Rule change that provided for technical standards for wind generation and other generator connections.<sup>1</sup> One of these changes was to the technical standards for generator connections. This change required the deletion of clause S5.2.5.3 and NEMMCO proposed that this should be replaced by three clauses S5.2.5.3A, S5.2.5.3B and S5.2.5.3C which created automatic, minimum and negotiated access standards. In particular, clauses S5.2.5.3A(d)(5) and (6) proposed that the minimum access standard for a generating system must be capable of continuous uninterrupted operation for frequencies in the:

- (5) upper bound of the normal *operating frequency band* to the upper bound of the *operational frequency tolerance band* for at least 10 minutes including any time spent in the ranges under clause S5.2.5.3A(d)(6); and
- (6) in respect of a *generating unit* that:
  - (i) is a part of a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more; or
  - (ii) does not have a *protection system* to trip the *generating unit* if the *frequency* exceeds a level agreed with NEMMCO.<sup>2</sup>

The AEMC accepted NEMMCO's proposed clause S5.2.5.3 in its Draft Determination, amended to include VenCorp's proposed clause S5.2.5.3D.<sup>3</sup> NEMMCO's drafted clause S5.2.5.3A(d)(6)(i) contained a minor error where the "or" after "of 30 MW or more" should have been "and". Given this, NEMMCO's submission to the Draft Determination submitted that the drafting of clause S5.2.5.3(c)(6)(i) should be amended to address the identified error by replacing the "or" with "and".<sup>4</sup>

However, the AEMC's Final Determination did not specifically address the issue raised by NEMMCO regarding clause S5.2.5.3(c)(6)(i) and did not make the suggested variation. NEMMCO notes that the AEMC agreed with NEMMCO's submitted changes to clause S5.2.5.3(c)(5) and made the suggested variation.<sup>5</sup> This suggests that the AEMC considered NEMMCO's changes but may have overlooked the suggested changes to clause S5.2.5.3(c)(6)(i). The Rule commenced operation on 15 March 2007.

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<sup>1</sup> NEMMCO, *Request for Rule: Technical Standards for Wind generation and Review of Existing Provisions*, 10 February 2006.

<sup>2</sup> *Ibid.*, p. 26.

<sup>3</sup> AEMC, *Draft Rule Determination: National Electricity Amendment (Technical Standards for Wind and other Generator Connections) Rule 2006*, 10 October 2006, p.20.

<sup>4</sup> NEMMCO, *Submission: Technical Standards for Wind Generation*, 24 November 2006, p. 23.

<sup>5</sup> AEMC, *Rule Determination: National Electricity Amendment (Technical Standards for Wind and Other Generator Connections) Rule 2007*, 8 March 2007, p. 32.

## 1.2 Summary of current provisions

Under Chapter 2 of the Rules, one of the eligibility requirements for registration as a Generator is that the person registering the generating system must satisfy NEMMCO that the generating system will be capable of meeting or exceeding performance standards. This requirement is important for maintaining the security of the power system which must be operated within secure operating limits.

Broadly, Chapter 5 of the Rules specifies the procedures for establishing or modifying a connection, inspection and testing requirements, and the schedules which specify the conditions for new generating facilities to either a transmission or distribution network and access to the national grid. Specifically, clause 5.2.5 requires that a Generator must plan and design its facility to ensure that it is operated to comply with the performance standards, its connection agreement and the systems standards. As a part of this, a Generator must submit an application to connect a new generating facility and enter into a connection agreement with a Network Service Provider. Generators seeking connection of a generating system to the power system must also satisfy the additional requirements and conditions as set out in schedule 5.2.

This Rule change proposal is only concerned with the technical standard which is set out in clause S5.2.5.3 for a generating unit's response to frequency disturbances. Performance standards record the performance capability of each plant and set the specific requirements that can be enforced by the Australian Energy Regulator. NEMMCO's proposed Rule change seeks a minor amendment to clause S5.2.5.3(c) which deals with the minimum access standard that a generating unit must meet in response to frequency disturbances. With respect to the minimum access standard, the Rules require that a generating system and each of its generating units must be capable of continuous uninterrupted operation in a number of frequency bands for specified periods. The proposed Rule change concerns clause S5.2.5.3(c)(5) and (6) which state the generating system must be capable of continuous uninterrupted operation where:

- (5) the upper bound of the normal frequency tolerance band for at least the recovery time including any time spent in the ranges under subparagraph (6) unless the generating system has a protection system to trip a generating unit if the frequency exceeds a level agreed with NEMMCO; and
- (6) In respect a *generating system*:
  - (i) of 30 MW or more; or
  - (ii) that does not have a *protection system* to trip *the generating unit* if the *frequency* exceeds a level agreed with *NEMMCO*,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits including and "island" condition) for at least the transient frequency time.

## 1.3 The issue with the current provisions

Currently under the clauses S5.2.5.3(c)(5) and (6), if a Generator was able to fulfil the requirements of S5.2.5.3(c)(5) then it would be unable to fulfil the requirement of clause S5.2.5.3(c)(6)(ii). This occurs because clause S5.2.5.3(c)(5) enables a generating system to trip their plant if the frequency exceeds a level that is agreed with NEMMCO. This frequency level must be between the upper bound of the operational frequency tolerance band and the upper bound of the extreme frequency excursion tolerance band. On the other hand, clause S5.2.5.3(c)(6) requires a generator to have the capability to maintain continuous uninterrupted operation for at least the transient frequency time of 9 seconds

between the upper bound of the operational frequency tolerance band and the upper bound of the extreme frequency excursion tolerance band if either clauses S5.2.5.3(c)(6)(i) or (ii) is satisfied.

This is illustrated by the following example. A person registering a 30 MW generating system would negotiate the frequency trip setting with NEMMCO under clause S5.2.5.3(c)(5) to trip the plant, this assists in maintaining the safety and security of the power system following a system event. However, because this generator also satisfies clause S5.2.5.3(c)(6)(i) it must also be capable of maintaining continuous uninterrupted operation for at least the transient frequency time (i.e. 9 seconds). Since one clause allows the plant to trip and the other requires it to maintain continuous uninterrupted operation and it is not physically possible to do this at the same time, NEMMCO considers that there is a drafting error in the performance requirements between clauses S5.2.5.3(c)(5) and (6). In addition, the account of the Rule change identified in section 1.1 supports this view.

NEMMCO considers that in order to resolve the above issue the “or” in clause S5.2.5.3(c)(6)(i) should be deleted and replaced with “and”. Consequently, both clauses S5.2.5.3(c)(6)(i) and S5.2.5.3(c)(6)(ii) would need to be satisfied in order for a generating system to have the capability to satisfy the transient frequency operating time requirements.

With respect to the above example, if there was an “and” in place of the “or” then clause S5.2.5.3(c)(6)(ii) would not be satisfied since it would have a protection system to trip the plant under clause S5.2.5.3(c)(5). The capability to maintain continuous uninterrupted operation for at least the transient frequency time would not be required and the plant could trip under clause S5.2.5.3(c)(5).

## 2. Proposed Rule

This section provides a description of the proposed Rules developed by NEMMCO, the power for NEMMCO to submit the proposed Rule changes to the AEMC, the power that NEMMCO considers that the AEMC has to consider this proposed Rule change and NEMMCO’s request that the Rule be considered non-controversial under section 96.

### 2.1 Description of Proposed Rule

The proposed Rule change ensures that a generating system that is 30 MW and above and does not have a protection system that trips the generating system when the frequency exceeds that agreed with NEMMCO must also be capable of maintaining continuous uninterrupted operation for at least the transient frequency time. NEMMCO suggests the following drafting to achieve this change:

(6) In respect of a generating system:

- (i) of 30 MW or more; and ~~or~~
- (ii) that does not have a *protection system* to trip *the generating unit* if the *frequency* exceeds a level agreed with *NEMMCO*,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits including and “island” condition) for at least the transient frequency time.

## **2.2 Power of NEMMCO to Submit this Proposal**

NEMMCO is requesting that the AEMC make this proposed Rule in accordance with section 91 of the NEL.

NEMMCO has the following relevant functions under the NEL:

- to operate and administer the NEM;
- to promote the development and improve the effectiveness of the operation and administration of the NEM; and
- to maintain and improve power system security.

Under section 91(1) of the NEL, the AEMC may make a Rule at the request of any person, the MCE or the Reliability Panel. As such, NEMMCO may request the AEMC make a Rule.

## **2.3 Power of the AEMC to Make the Proposed Rule**

The subject matters about which the AEMC may make Rules are set out in section 34 of the NEL and, more specifically, in Schedule 1 to the NEL.

NEMMCO considers that the proposed Rule falls within the subject matters that the AEMC may make Rules about, as it relates to the operation of the national electricity system for the purposes of the safety, security and reliability of that system and the activities of persons participating in the NEM or involved in its operation. Specifically, the proposed Rule is within matters set out in Schedule 1 to the NEL, as it relates to access to electricity services provided by means of transmission and distribution systems.

## **2.4 Request for a Non-Controversial Rule**

NEMMCO requests that the AEMC reviews this Rule change proposal under section 96 of the NEL. Section 96 applies if the AEMC considers that a request for a Rule is a request for a non-controversial Rule. A non-controversial Rule means a Rule that is unlikely to have a significant effect on the NEM.

NEMMCO considers that section 96 applies to this proposal as the Rule would:

- correct a minor error to the Rules which involves a non-material change;
- only affect persons registering generating facilities; and
- have an insignificant effect on the market as a whole.

## **2.5 Consultation**

NEMMCO has not formally consulted on its proposed Rule change. However, NEMMCO has been informally advised that a number of generators would be unable to meet the requirements of clauses S5.2.5.3(c)(5) and (6).

### **3. How the proposed Rule is likely to contribute to the National Electricity Objective and the Expected Costs and Benefits**

Before the AEMC can make a Rule change it must apply the rule making test set out in the NEL which requires it to assess whether the proposed Rule will or is likely to contribute to the NEO. Clause 7 of the National Electricity Law states the NEO is:

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

- (a) price, quality, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

NEMMCO submits that the proposed Rule satisfies the requirements of the rule making test. The remainder of this section discusses the expected benefits and costs of the proposed Rule and how it contributes to the NEO.

#### **3.1 Analysis of the Proposed Rule against the National Electricity Objective**

The proposed Rule change is a minor amendment that seeks to correct what NEMMCO considers to be a drafting error made with respect to the minimum access requirements for a generating system in response to a frequency disturbance. As such, NEMMCO submits that although the proposed Rule is an incremental improvement it is likely to promote the NEO because it improves the clarity and consistency of clauses S5.2.5.3(c)(5) and (6), as discussed in section 1.3.

NEMMCO considers that clauses S5.2.5.3(c)(5) and (6), in concert, create a barrier to entry for persons seeking registration of a generating system. As discussed, if Generators have an agreed frequency trip setting with NEMMCO under clause S5.2.5.3(c)(5) then they should not be required to meet the requirements of clause S5.2.5.3(c)(6)(ii) which requires the generating system to be capable of operating at the upper bound of the extreme frequency excursion tolerance limits for the transient frequency time. In practice, this requirement is both impractical and unrealistic and is likely to reduce the amount of efficient investment in certain types of generating facilities as these requirements cannot be met.

NEMMCO submits that proposed Rule change would change the existing requirement to ensure that only generators above 30MW or more and that do not have a protection system would be required to operate at the upper bound of the extreme frequency excursion tolerance limits. Given this, NEMMCO considers that the proposed Rule reduces the barrier to entry for persons wishing to register generating facilities by promoting certainty and creating a regulatory environment where efficient investment is facilitated. NEMMCO submits that the proposed Rule change satisfies the NEO as it is likely to promote efficient investment in electricity services.

In addition, NEMMCO is responsible, as the market and system operator, to promote the development of, and improve the effectiveness of the operation of the NEM. NEMMCO submits that the proposed Rule change promotes power system security by clarifying the technical requirements that Generators must achieve in order to participate in the NEM.

#### **3.2 Expected Benefits and Costs of the Proposed Rule**

NEMMCO expects that the proposed Rule change would benefit persons who wish to connect generating systems to the national grid because the proposed changes would allow them to meet the minimum access standard requirements of clauses S5.2.5.3(c)(5) and (6).

As discussed in section 1.3, under the existing Rules some generators would be unable to meet these minimum access requirements.

NEMMCO does not expect that any other party would be adversely affected by this proposed Rule change.

**GLOSSARY**

<b>Term or Abbreviation</b>	<b>Explanation</b>
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
NEM	National Electricity Market
NEO	The national electricity objective as stated in section 7 of the NEL.
NEL	National Electricity Law
Rules	National Electricity Rules