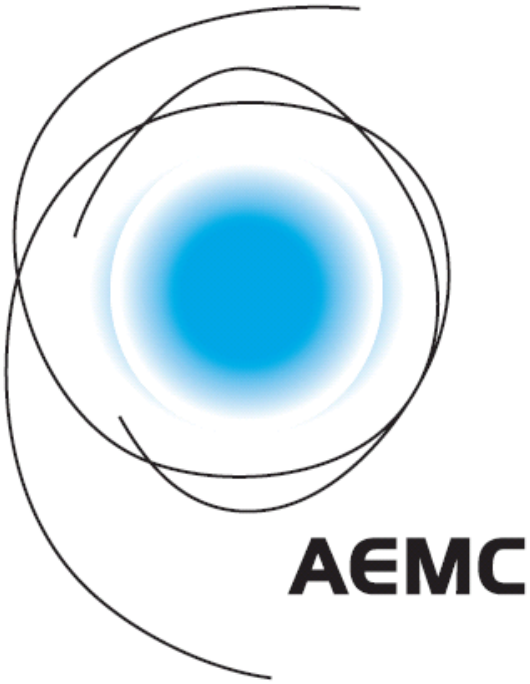

Australian Energy Market Commission

MCE Directed Policy Review

Issues Paper

Enforcement and compliance with technical standards under the National Electricity Rules

Date: ***January 2006***

Commissioners:
Tamblyn
Carver

Contents

Summary

The Ministerial Council on Energy (MCE) has directed the Australian Energy Market Commission (AEMC or Commission) to conduct a review of the enforcement of, and compliance with, technical standards under the National Electricity Rules (Rules). The review follows a number of incidents in the NEM where plant has failed to meet expected standards of performance, resulting in large amounts of load shedding.

While 'technical standards' is not a single defined term under the Rules, the Rules impose obligations on participants to meet a range of standards. These standards include, but may not be limited to, system standards, performance standards, and access standards. Failure to comply may be a breach of the Rules that attracts enforcement proceedings and penalties.

Technical standards play an important role in maintaining power system security. By requiring all Registered Participants (participants) to meet a set of agreed standards, the risk of a major incident endangering system security can be reduced.

The terms of reference from the MCE direct the Commission to consider the investigative, rectification and penalty provisions of the Rules, in the context of the importance of maintaining system security.

This issues paper seeks comment from interested parties to inform the Commission on issues that may be relevant to this review and to guide the Commission in its consideration of the issues and the preparation of a report to the MCE.

There are a number of issues which are relevant to this review. Broadly, these issues fall into the following categories:

- Ensuring that there is an appropriate and effective governance framework in place covering technical standards. This includes ensuring clear lines of responsibility for setting, monitoring, investigating and enforcing technical standards.
- Ensuring that there are appropriate incentives to achieve a high level of compliance with relevant technical standards. This includes consideration of the level and type of penalties available, compliance programs and the reporting of breaches of standards.
- Ensuring that the technical standards provisions efficiently contribute to maintaining system security. This recognizes the potential for perverse incentives on market participants and the costs and benefits of compliance with standards. It includes the interaction between technical standards and other methods of maintaining system security.

Interested stakeholders are invited to make comment on the issues outlined in this Paper. Submissions must be received by 5 pm on 27 March 2006. Submissions can be sent electronically to submissions@aemc.gov.au or by mail to:

Australian Energy Market Commission
PO Box H166
AUSTRALIA SQUARE NSW 1215
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1 Background

On 25 November 2005 the Commission received a direction from the MCE under s.41 of the National Electricity Law (NEL) to conduct a review on the enforcement of, and compliance with, technical standards under the Rules. The direction set out the terms of reference for the review (attached).

This issues paper seeks to inform the Commission's consideration of the issues and enable the Commission to take into account the comments of stakeholders in the process of preparing a draft report.

The paper identifies a range of relevant issues in order to elicit written comments and views from interested parties. To aid this process, a set of questions (and related context) have been provided. However, those wishing to make a submission to this review should not feel constrained by these questions.

The terms of reference set out a number of requirements concerning the timing of the review. With these requirements in mind, the Commission proposes the following timetable for the review:

- Issues Paper released 24 Jan 2006
- Submissions due 27 Mar 2006
- Draft Report to MCE 26 May 2006
- Final Report to MCE to be determined

1.1 Terms of Reference

The terms of reference for this review require the Commission to review three areas with regard to technical standards. These are investigative provisions, rectification provisions and penalty provisions under the Rules. These three areas are to be considered in the context of maintaining power system security and reliability.

The terms of reference also suggest a number of methods of ensuring compliance with technical standards – appropriate incentives, strengthened or altered institutional arrangements or increased penalties. While the Commission will consider these methods, there may also be other proposals which may be relevant solutions to issues or problems identified by the review.

The Commission is also required to give consideration to three power system events that occurred recently in the NEM – the 8 March 2004, the 13 August 2004 and the 14 March 2005 events. All three events resulted in a significant amount of load shedding. Significant investigations of these incidents have been conducted by National Electricity Market Management Company (NEMMCO), and in one case National Electricity Code Administrator (NECA) and the National Electricity Tribunal. The Commission does not intend to re-investigate these particular incidents, but to consider the broader policy and compliance issues raised by these incidents which could be addressed through changes to the Rules or legislation.

Under the terms of reference, the Commission may have regard to any other factors or consider any other event that the Commission considers relevant.

1.2 Legal Requirements

It is relevant to note the requirements applying to the Commission in undertaking a review of this type. The Commission must comply with the direction of the MCE in conducting the review, including any terms of reference provided (s.41(2) of the NEL). The Commission is also required to have regard to the NEM objective (see s.33 of the NEL), which states:

> *The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.*

Other than these requirements, the AEMC may conduct the review as the Commission considers appropriate, and may or may not include public hearings.

1.3 What are technical standards?

For the purposes of this review, the Commission considers that technical standards are those requirements under the Rules that specify the required performance of a Registered Participant's equipment where that equipment forms part of the national electricity system, or is connected to that system.

In the view of the Commission, the technical standards in the Rules that are relevant to this review are those standards that impose a compliance obligation on participants. The Commission considers that these are:

- *Performance standards* for *Generators, Market Customers (Customers)* and *Market Network Service Providers* (*MNSPs*) specified under clauses 4.13, 4.14 and 5.3.4A(g) that are required to be registered with NEMMCO;
- *Automatic access standards*, *minimum access standards* and performance criteria required for connection of *Network Service Providers(NSPs)*, *Generators*, *Customers* and *MNSPs* set out in schedules 5.1, 5.2, 5.3 and 5.3a respectively, which form the basis for *performance standards*; and
- Obligations of *NSPs*, *Customers* and *Generators* under clauses 5.2.3, 5.2.4 and 5.2.5

The Rules also contain some standards which set out the expected operation of the power system, but which do not impose a compliance obligation on Registered Participants. These are:

- The *system standards* for all *Registered Participants* specified in Schedule 5.1a of the Rules;
- The *power system security and reliability standards* as determined by the Reliability Panel.

The Commission does not consider that these standards are within the scope of this review.

1. Are there other technical standards that the Commission should consider as part of this review?

Technical standards essentially perform two roles. Firstly they act as a product specification for the provision of electricity services. They define the expected standard of service, quality and nature of electricity that other participants on the network and customers can expect from particular plant. This allows parties to invest in and operate equipment with a reasonable assurance of the quality and expected performance of other parties connected to the network.

Secondly, technical standards act as a method of maintaining power system security. By specifying the expected performance of equipment, the power system can be operated to those standards. Standards may cover such matters as the required ability of particular equipment to ride through power system disturbances or the quality of electricity. If these standards are adhered to by all parties, power system events should be less likely to cascade and become serious in nature, or more specifically less likely to endanger power system security. Events may also be less likely to occur.

1.4 Previous work on this issue

NECA was required to conduct a review under clause 5.2.6 of the National Electricity Code (Code), "on the technical standards to which generators must adhere" within two years of market commencement. In December 2001, NECA released the final report of its review of technical standards.

In that report, NECA proposed a framework for technical standards under the Code, (now Rules), covering the obligations of NEMMCO, network service providers, generators and customers. This framework included:

> *"system standards, based on consolidating and where necessary updating existing standards within the Code, that will establish the target performance of the power system overall; and*
>
> *access standards that will define the range within which plant operators could negotiate with NEMMCO and network service providers for access to the network. NEMMCO and the relevant network service provider would need to be satisfied that the outcome of those negotiations was consistent with their achieving the overall system standards. The access standards would also need to include minimum standards below which access to the network would be prohibited.*
>
> *The standards determined or negotiated for each plant should be publicly deposited with NEMMCO as registered performance standards. Existing plant should be able to treat its current performance as its registered performance standard."*[1]

The Reliability Panel subsequently drafted Code changes based upon NECA's report, which were authorised by the Australian Competition and Consumer Commission (ACCC) in February 2003.

The Performance Standards Commencement Date was 16 November 2003. Clause 4.13 of the Code allowed 1 month for Registered Participants to submit standards to NEMMCO and a further 11 months to negotiate and agree those standards. The final aspect was the establishment of compliance programs, which were required to be put in place within 6 months of registration of those standards with NEMMCO.

1 NECA Review of Technical Standards, Final Report, p3.

These Code changes established the framework for the technical standards requirements under the current Rules.

2 Current Requirements

2.1 Current Rules

The current Rules prescribe detailed requirements regarding technical standards. The Rules establish a hierarchy of overall system standards, performance standards for individual Generators, Customers and MNSPs and compliance programs. Performance standards are designed to achieve system standards and compliance programs are designed to ensure the achievement of performance standards.

This section includes a short overview of the technical standards requirements in the Rules, however this overview should be read with reference to the details included in the Rules themselves.

The system standards contained in schedule 5.1a of the Rules set out the high level targets for the performance of the power system. The Rules note that the standards are intended to be "necessary or desirable for the safe and reliable operation of the facilities of Registered Participants", but also "seek to avoid the imposition of undue costs on the industry or Registered Participants."[2]

The system standards cover frequency, system stability, voltage, voltage fluctuations, voltage waveform distortion, voltage unbalance, and fault clearance times.

The standards specified in the system standards are intended to be achieved through performance standards set for each Generator, Customer or MNSP. Subject to the grandfathering arrangements discussed in section 4.1, these performance standards are based on the automatic access standards or negotiated access standards that form part of the connection agreement between a Generator, Customer or MNSP and a NSP.

Schedule 5.1 establishes the planning, design and operating criteria that must be applied by NSPs.

Schedules 5.2, 5.3 and 5.3a establish the required conditions for connection of Generators, Customers and MNSPs respectively. Contained in these conditions are both automatic and minimum access standards for connection.

Automatic access standards are defined as a standard of performance for a plant such that if the plant meets the standard, it would not be denied access to the network because of that technical requirement. Minimum access standards are defined as a standard of performance for a plant such that if the plant fails to meet that standard it would be denied access because of that technical requirement[3].

Where the capability of a plant falls between the automatic and minimum access standard, a negotiated access standard can be established between the applicant and the NSP, in consultation with NEMMCO on particular issues.

2 Rules, S5.1a.1(a), S5.1a.1(d)
3 Rules, Chapter 10.

Under clause 5.3.4A(g) of the Rules, the negotiated or automatic access standard that forms part of the connection agreement becomes the performance standard for that plant. All performance standards are registered with NEMMCO[4].

Under clause 4.15, it is the responsibility of the Registered Participant to ensure that its plant meets its performance standard. Under clause 5.2.5, a generator is obligated to ensure that its facilities are operated to comply with its connection agreement, applicable performance standards and the system standards. Under clause 5.2.4, Customers are under the same obligations. Network service providers are obligated to comply with the standards specified in schedule 5.1 and those specified in any connection agreement with a Registered Participant.

The Registered Participant to which a performance standard applies must institute a compliance program within 6 months of a connection agreement or the commencement of operation of the plant, whichever is later[5]. In the case of a generator, that compliance program must be agreed with NEMMCO and the relevant Transmission Network Service Provider (TNSP).[6]

If the participant becomes aware of a breach of its performance standard, the participant must immediately notify NEMMCO. NEMMCO is then required to determine the period of time within which the participant must rectify the breach, taking into account both the issues associated with continuation of the breach and the reasonable time necessary to rectify the breach[7].

If the participant fails to rectify the breach in the time determined by NEMMCO, NEMMCO is then required to notify the AER to take action[8].

Clause 4.2.5(c)(10) also requires NEMMCO to take performance standards into account when determining the technical envelope used to achieve and maintain power system security.

2.2 Current NEL provisions

Under the NEL, the Australian Energy Regulator (AER) is charged with monitoring, investigative and enforcement responsibilities in relation to the Rules. In the case of a breach of a performance standard, like any other breach of the Rules or the NEL, the AER may institute proceedings against a participant for breaches (or possible breaches) of the Rules.

The Court may make a range of orders where a participant is found to be in breach of the Rules. These potential orders include[9]:

- payment of a civil penalty.
- an order that the relevant participant cease an act that constituted the breach;
- an order that the participant take action to remedy the breach or prevent reoccurrence of the breach of the Rules;

4 Clause 4.14(n)
5 Clause 4.15(b)
6 Clause 5.7.3
7 Clause 4.15(f) – (j)
8 Clause 4.15(k)
9 See Part 6 of the NEL

- an order that the participant implement a specified program of compliance

The available civil penalties are:

- in the case of a company, a maximum of $100,000 and a maximum of $10,000 for each day the breach continues.
- in the case of a natural person, a maximum of $20,000 and a maximum of $2,000 for each day the breach continues.

3 Relevant power system incidents

The terms of reference for this review refer to three specific power system incidents:

- 8 March 2004 which resulted in approximately 650MW of load shedding in South Australia
- 13 August 2004 which resulted in approximately 1500MW of load shedding across Queensland, New South Wales, Victoria and South Australia
- 14 March 2005 which resulted in approximately 700MW of load shedding in South Australia

The Reliability Panel summarised each event as follows[10].

8 March 2004

At around 11:30am a bushfire event occurred in the vicinity of the Para substation, close to Adelaide, which led to a series of transmission faults on one circuit of the Victoria to South Australia (Heywood) interconnector. Immediately following this, both units at Northern Power Station (NPS) reduced their output to zero momentarily. This sudden loss of generation significantly increased the import on the Heywood interconnection, beyond its safe limit, shutting down the interconnector. Loss of the interconnection resulted in the frequency in South Australia falling to 47.6 Hz and around 650 MW (or 40 per cent of South Australia demand) of under frequency load shedding (UFLS). The interconnector was restored at 12:11pm and the load was fully restored by 1:45pm.

13 August 2004

At 9:41pm, a current transformer at Bayswater power station in NSW developed an internal fault which later caused it to explode. This failure caused a rapid succession of power system disturbances and triggered the loss of five large generating units (Bayswater units 1, 2 and 3; Eraring unit 2; and Vales Point unit 6) and one medium capacity generating unit (Redbank). The simultaneous loss of six generating units reduced supply by about 3,100 MW and caused the interconnected power system frequency to fall to 48.9 Hz. This resulted in around 1,500 MW (or eight per cent of market-wide demand) of consumer demand to be shed automatically through the operation of under-frequency load shedding (UFLS) schemes. The load shedding occurred in Queensland, New South Wales, Victoria and South Australia. This automatic load disconnection together with the combined response from the remaining generating units successfully controlled the power system frequency and prevented a major power system collapse.

14 March 2005

At around 6.39am on Monday 14 March, an insulator flashover occurred at Playford substation, which is in close proximity to Northern power station in South Australia. Immediately following this, the generation level at Northern reduced from 527 MW to zero momentarily. This sudden loss of generation significantly

10 Reliability Panel – Annual Electricity Market Performance Review – Reliability and Security 2005

increased the import on the Victoria to South Australia (Heywood) interconnector, beyond its safe limit, and caused it to shut down. During the incident, generators at Ladbroke Grove and Pelican Point shut down.

The frequency in South Australia fell to 47.61 Hz. Around 700 MW of load, almost half the regional demand, was shed automatically to prevent further cascading of the event. The frequency remained within the multiple contingency standard during the separation, stabilising within 15 seconds. The interconnection was restored at 7.01am and load was fully restored by 8.25 am.[11]

NEMMCO declared the loss of generation from both NPS units as a credible contingency event, and invoked a set of special constraints, to ensure the security of the power system while the generators were working to identify and resolve the issues with their plant. These special constraints ensured that sufficient head room was maintained on the Victoria to South Australia interconnector to be able to withstand the loss of all NPS generation, without overloading the interconnector[12].

According to NECA[13], in certain circumstances, the effect of this reclassification and the consequent invoking of constraints was, potentially, a reduction in import capability across the Victoria - South Australia interconnector. When the NPS unit 1 and NPS unit 2 dispatch offer was below the Victorian regional reference price, which was the majority of the time, NPS unit 1 and NPS unit 2 would be dispatched in preference to the interconnector.

These constraints were subsequently removed on 1 June 2005 following advice from NRG Flinders that corrective measures had been taken.

In its report into the incident NECA stated:

> *NECA reasonably considers that this reclassification by NEMMCO led to reduced imports and higher prices in South Australia.*[14].

It should be noted that the 8 March 2004 and 13 August 2004 events occurred prior to the registration of performance standards with NEMMCO, while the 14 March 2005 event occurred before compliance-monitoring programs were required to be established.

Therefore while these events may provide little guidance regarding the effectiveness of the performance standards regime, it is relevant to consider whether the current technical standards regime would have prevented or significantly mitigated the impact of the incidents.

4 Issues

4.1 Setting performance standards

The process of setting standards is necessarily a balance between the benefits to the market of high standards and the technical capacity and cost to participants of complying with those standards.

11 Please note that times are quoted in market time, not local time.
12 NEMMCO, Power System Incident - 14 March 2005 - Final Report
13 NECA - Report into power system incident on 14 March 2005 in South Australia
14 NECA - Report into power system incident on 14 March 2005 in South Australia

The content of a performance standard may have a significant impact on the capability, and cost, for participants to achieve compliance and the capacity of the market to achieve the system standards.

New standards

Performance standards for new equipment connecting to the interconnected network are set through the process of establishing a connection agreement. Clause 5.3.4A(g) states:

> *An automatic access standard or, if the procedures in this clause 5.3.4A have been followed, a negotiated access standard that forms part of the terms and conditions of a connection agreement, is taken to be the performance standard applicable to the connected plant for the relevant technical requirement.*

NEMMCO may be involved in this process for matters allocated to it under clause 5.3.3(b1)(4), but generally this process is undertaken between the proponent and the NSP. Prior to registration a due diligence review is completed by NEMMCO to verify that the proposed connection satisfies the technical requirements of the Rules.

2. Is the process for establishing new performance standards effective in achieving desired outcomes for the power system. Is NEMMCO's role in the process effective or does it need to be more clearly defined?

Grandfathered standards

Under clause 4.13 of the (then) Code[15], Generators, Customers and MNSPs were required to submit proposed performance standards to NEMMCO by 16 December 2003.

Clause 4.14 of the Code defined the criteria that NEMMCO was required to use to evaluate a proposed set of performance standards. To resolve inconsistencies between the different criteria the following hierarchy was specified:

- a performance standard determined in accordance with a derogation;
- a performance standard determined in accordance with a connection agreement;
- a performance standard determined in accordance with the design performance of the plant; and
- a performance standard determined in accordance with schedules 5.1, 5.2, 5.3 and 5.3a.

Most derogations on plant performance were determined prior to the start of the NEM with no consideration being given to their use in formalised performance standards. For various reasons it is possible that for some plant the standard defined by these derogations may no longer be appropriate.

3. Are performance standards for existing plant, which were defined with reference to a derogation, an accurate representation of the capability of the plant? Are there events that should trigger a review?

15 Note that clause 4.13 of the Rules has now changed significantly.

Ability to change standards
Once a performance standard has been established, the only process available to revise it would appear to be through the modification of a connection agreement. System standards are subject to review by the Reliability Panel under clause 8.8.1(a)(6), and automatic and minimum access standards and performance standards are subject to review under clause 8.8.1(a)(7) although there is no time limitation on the Panel to undertake these reviews.

NECA noted in its report on technical standards that:

> *"Over time, the Reliability Panel should reassess the need for mandatory standards and the level of any standards where there are relevant ancillary services arrangements in place and working appropriately. This should lead to the eventual phasing out of certain standards as these markets develop".*[16]

4. Should there be a mechanism to modify a performance standard, either at the request of the participant or to take account of changes in the requirements on the power system?

It is also noted that, while the Rules specify that participants connecting new equipment negotiate a performance standard through the process of establishing a connection agreement and the grandfathering process established performance standards for existing plant, there appears to be no provision in the Rules directly requiring Generators, Customers and MNSPs to have a performance standard.

While the Commission considers that this review should be appropriately focused on compliance with and enforcement of technical standards, there may be issues regarding the content of standards that should be considered. For example, where the Rules impose an obligation on participants to meet a standard that is unclear, compliance with that standard may be difficult to achieve. Another issue may be clarity in responsibility for meeting a technical standard. Where it is unclear who is responsible for complying with a standard, compliance may not be enforceable.

5. Are there any aspects of the content of the various technical standards specified in the Rules that require clarification?

4.2 Monitoring and Compliance

Ensuring that a participant complies with its performance standards is critical to the maintenance of power system security. Without an assurance that performance standards are being met, or when breached are quickly rectified, any framework of technical standards will have limited value.

However, any practical framework of standards may need to recognise that compliance cannot be guaranteed at all times.

Compliance Programs
Registered Participants subject to performance standards are required to institute compliance programs under clause 4.15(c) to ensure initial and on-going compliance with their

16 NECA Final Report on Technical Standards, p11

performance standards. Under clause 5.7.3(a), prior to implementing a compliance program a Generator must provide evidence to NEMMCO and the relevant NSP that its generating units comply with the technical requirements of S5.2.5, the relevant connection agreement and performance standards. Generators are also required under clause 5.7.3(b) to negotiate in good faith to agree with NEMMCO and the relevant NSP on the compliance program.

Under clause 5.7.4(a1), NSPs are also required to implement compliance programs to ensure the performance of protection systems and various control systems in accordance with the requirements of schedule 5.1. [17]

6. Is the current framework for compliance programs effective in establishing and maintaining compliance with performance standards?

There may be an issue regarding the level of compliance required by performance standards. Under clause 4.15(a)(1), there is an absolute requirement for a participant to ensure that its plant *always* complies with performance standards. However, while the compliance programs required under clause 4.15(c) can verify compliance at the time of testing, they do not absolutely guarantee the maintenance of that compliance at other times. Therefore, institution of a compliance program may not of itself guarantee the absolute compliance with performance standards required.

7. Is it reasonable to expect a participant to meet an absolute standard of compliance when this cannot be guaranteed through a compliance program?

It may also be relevant to note that the performance standards regime applies to all Generators regardless of size. From a system security perspective, non-compliance with a performance standard by a small generator may be very unlikely to cause a threat to system security. However, the cost of compliance may be relatively large, relative to that risk.

Monitoring

Under clause 4.15(f), a Registered Participant is responsible for notifying NEMMCO if its plant is, or is likely to, breach a performance standard. This may raise an issue regarding the incentives for participants to disclose breaches of their plant.

The participant itself is likely to be in the best position to judge whether its plant is compliant or not. However in many cases, the costs of non-compliance are borne by the market as a whole as the power system may be less secure. If there are not strong enough incentives for participants to disclose information, it is possible that a participant may choose not to disclose that its plant is non-compliant.

8. Are there sufficient incentives to ensure that all breaches of performance standards are reported to NEMMCO by participants?

17 Clause 5.7.4(a1)

Under clause 4.15(d), the AER may also monitor compliance with the compliance program and performance standards.

9. Is the AER the appropriate body to monitor compliance? Is the AER's current approach to its monitoring role appropriate? To what extent should it monitor reactively or proactively? What other approaches to the monitoring role may be cost effective?

10. Should there be some form of public reporting on the outcome of the AER's monitoring role, including identifying non-compliance instances and what action has been taken to correct those non-compliances?

Rectifying a breach

Under clause 4.15(i), once notified of a breach of a performance standard, or NEMMCO reasonably believes that plant is in breach of a performance standard, NEMMCO is required to determine the period of time in which the breach must be rectified.

In determining the time that participant has to rectify a breach, NEMMCO is required to take into account:

> *(1) the time necessary, in NEMMCO's reasonable opinion, to provide the Registered Participant with the opportunity to remedy the breach; and*
>
> *(2) the need to act to remedy the breach given the nature of the breach.*[18]

It may also need to be recognised that there are costs involved with rapid rectification of a breach of a performance standard. For example, where a generator must be taken offline to rectify a fault, the costs to the Generator or market more generally during a period of high demand may exceed the benefit of rectifying the breach in the short term.

11. Is NEMMCO's role in determining the timeframe to rectify the breach appropriate and does NEMMCO have sufficient guidance in making that determination?

4.3 Enforcement

An enforcement regime for compliance with technical standards has a number of purposes. Enforcement orders not only compel a participant who is in breach of a performance standard to rectify the breach, but the very prospect of enforcement under an effective regime of the requirements in the Rules operates as an incentive for compliance.

Under section 59 of the NEL, the AER has sole responsibility for initiating proceedings in relation to an alleged breach of the National Electricity Law, Regulations or Rules.

12. Is the enforcement regime, including the powers of the AER adequate for the effective enforcement of breaches of performance standards?

18 Rules, 4.15(j)

A significant enforcement issue may be whether current performance standards are expressed with sufficient clarity that they are capable of being enforced. Effective enforcement regimes rely on clearly expressed rules.

The proceedings in the National Electricity Tribunal following the 14 March 2005 incident, while undertaken under the old National Electricity Law and Code, may be an example of these enforcement powers in action. NECA noted on its website that:

> "*NECA's investigation of this event and the National Electricity Tribunal's final determination of the matter took a total of 4 months from the date of the event. As NRG Flinders did not contest the application, the National Electricity Tribunal accepted joint submissions of NECA and NRG Flinders without requiring a long and protracted legal court case.*"

Under the current Rules, formal enforcement of a performance standard breach may be triggered by clause 4.15(k) under which NEMMCO is required to notify the AER if the participant fails to comply with a requirement from NEMMCO to rectify a breach of a performance standard within a specified length of time. However, it should be noted that a breach of 4.15(a)(1) requiring a Registered Participant to ensure that it plant meets the applicable performance standard, is also subject to the civil penalties provision.

13. Should NEMMCO be required to inform the AER of potential non-compliance earlier than at the end of the rectification period? Should NEMMCO refer the issue to the AER in all cases, or should NEMMCO have some discretion to extend the period for compliance?

Clause 4.15(l) of the Rules provides that the effectiveness of a compliance regime should be taken into account in any proceeding for a breach of a participant's responsibility to ensure that its plant meets or exceeds its registered performance standards and to ensure the plant does not have a material adverse effect on system security.

14. Are there other matters that the Rules should require to be taken into account in proceedings?

A credible risk of enforcement may also act as an effective deterrent to non-compliance. Where a participant considers that there is a high risk that non-compliance will be prosecuted, the incentives for non-compliance may be significantly reduced.

4.4 Investigative Powers

Investigation of a breach of a performance standard, like all other breaches of the Rules or NEL, are the responsibility of the AER. However, under clause 4.8.15 of the Rules, NEMMCO has a requirement to conduct reviews of significant operating incidents. In some cases, a significant operating incident may also give rise to an investigation by the AER in regard to a breach of technical standards provisions (such as the 14 March 2005 incident) as well as investigation by NEMMCO.

15. Are there good reasons for having two investigations into power system incidents? Does this dual process assist in resolving issues by separating operational matters from enforcement matters, or does it place an inappropriate burden on participants? Do the AER and NEMMCO have appropriate power to conduct their investigations?

The aim for each investigation is different. The aim of the investigation by the AER is to ensure that breaches of the Rules and the NEL are enforced appropriately, while the aim of NEMMCO's investigation is the maintenance of system security by speedy determination and subsequent rectification of all contributing factors.

These different purposes imply different approaches – enforcement investigations may be mandatory and adversarial, and therefore the participant being investigated may be less willing to share information. In a system security investigation, which is more co-operative in nature, all participants benefit from a thorough investigation into the causes of an incident to ensure that the cause can be understood, and avoided in the future. While these investigations have separate purposes and approaches, the evidence required by both investigations will be similar.

16. Does the threat of enforcement action by the AER act as a disincentive to provide information to NEMMCO on a co-operative basis, if it is to be shared between the two organisations?

4.5 Level of Penalties

The NEL specifies the level of civil penalties for breaches of the provisions of the NEL, the Regulations or the Rules. The National Electricity Regulations specify clauses of the Rules that are subject to civil penalties – "civil penalty provisions". The NEL sets out a statutory maximum penalty for civil penalty provisions, with the exception of rebidding civil penalties, discussed below. In the second reading speech of the new NEL, the Hon Pat Conlon MP, Minister for Energy, South Australia noted:

> *"[The] replacement of the current graduated civil penalty scheme should not be taken to indicate that all breaches of civil penalty provisions are of the same seriousness or that a breach of a provision that previously attracted a lower civil penalty should now be regarded as more serious and warranting a higher civil penalty. Rather, the changes have been made to simplify the civil penalties regime, and the Courts should determine the appropriate amount of the civil penalty having regard to the circumstances of each particular breach."*

While the NEL specifies the penalties for a breach of civil penalty provisions, it also specifies a much higher level of penalty for a breach of rebidding civil penalty provisions. A person breaching a rebidding civil penalty provision may be fined up to $1 million and up to $50,000 for each day the breach continues. The rebidding civil penalty provision applies in cases where scheduled Generators or market participants breach clause 3.8.22A of the Rules, by not making dispatch offers, bids or rebids in good faith.

In contrast, civil penalties for other breaches of the Rules are:

- in the case of a company, a maximum of $100,000 and a maximum of $10,000 for each day the breach continues.
- in the case of a natural person, a maximum of $20,000 and a maximum of $2,000 for each day the breach continues.

The purpose of the penalty provisions may also be a relevant consideration. The level of a penalty and the financial consequences of non-compliance have an impact on the incentive for non-compliance. On that basis, there may be a case for consideration of higher penalties for breaches of technical standards than for other breaches of the Rules with lesser consequences for Market Participants and end users.

If a penalty for failure to comply with technical standards is not set at a sufficiently high level, it may be commercially more attractive for a participant to pay the penalty and remain non-compliant. Higher penalties may be one means to provide incentive for participants to comply with technical standards, and help align the incentives for individual participants with the interests of the market as a whole.

This may be considered appropriate in view of the substantial cost and inconvenience that are imposed on end users by significant load shedding resulting from plant failures due to non-compliance with standards. Ensuring that penalties reflect these potential costs may be warranted.

17. Are the penalties for breaches of performance standards adequate?

18. Is there a case for determining a technical standards penalty provision which better reflects the potential costs for end users of non-compliance? If so, what should the level of that penalty be?

There are alternatives available to prosecution in Court for beaches of civil penalty provisions. The AER also has the power under section 74 of the NEL to issue infringement notices in relation to any civil penalty provision, where the AER has reason to believe they have breached that provision. Penalties of up to $4000 for a natural person or $20,000 for a body corporate are available.

Court proceedings can also require participants to cease the activity that is in breach, take action to remedy the breach or implement a specified program for compliance.

19. How might an infringement notice approach be applied in ensuring compliance with technical standards? Are there other orders which may assist in ensuring compliance with technical standards?

4.6 Perverse Incentives

The actions of a participant in failing to quickly remedy a breach of a performance standard can have a significant financial impact on the market. In particular circumstances, it is possible that a participant may be able to benefit from the circumstances caused by its breach of a performance standard.

NECA's final report into the 14 March 2005 event stated:
The impact of the new constraint on market participants was that there were lower imports to South Australia and correspondingly increased spot prices. Perversely, it is highly likely that NRG Flinders was not adversely impacted by the imposed constraint and even may have benefited through increased prices in South Australia.

> *An alternative choice of constraint, (which NEMMCO has used in the past) may have seen NPS backed off ahead of imports from Victoria – therefore potentially impacting NPS before other participants and not potentially allowing NRG Flinders to benefit from an increased South Australian spot price.*
>
> *This alternative, which could be achieved by NEMMCO requiring a generator to operate at a particular generated output, is available to NEMMCO under clauses 5.7.3 (e) of the Code in circumstances where each of the three limbs of clause 5.7.3(e) are met (one of which is NEMMCO being satisfied that a generating unit does not comply with one or more technical requirements). We understand that NEMMCO was not satisfied that the three limbs of clause 5.7.3(e) were met in the present case.*[19]

Clause 5.7.3(e) establishes three 'tests', after which NEMMCO may limit the output of a generator. The three tests are:

1. NEMMCO is satisfied that a *generating unit* does not comply with one or more technical requirements of clause S5.2.5 of schedule 5.2 and the relevant *connection agreement*;

2. NEMMCO does not have evidence demonstrating that a *generating unit* complies with the technical requirements set out in clause S5.2.5 of schedule 5.2; and

3. NEMMCO holds the reasonable opinion that there is or could be a threat to the *power system security* because of the performance of the *generating unit*,

It is relevant to note in clause 5.7.3(e), that the technical standard a Generator is required to conform to is not the registered performance standard of the Generator, but both S5.2.5 and their connection agreement.

S5.2.5 specifies both minimum access standards and automatic access standards for generators. Clause 5.7.3(e) is not clear on whether Generators are required to conform to more than the minimum access standards for the purposes of passing the test.

This clause places a relatively high hurdle for decisions by NEMMCO to limit the output of a generator if it suspects a breach of technical standards. In these circumstances it may be simpler for NEMMCO to maintain power system security by putting an alternative form of constraint in place which does not require NEMMCO to meet similar requirements to 5.7.3(e). However, such an option can affect market outcomes.

19 NECA, Report into power system incident on 14 March 2005 in South Australia, p9

20. **Should NEMMCO be required to consider the commercial incentives or opportunities provided by its actions in managing the impact on power system security of a breach of performance standards?**

21. **Is clause 5.7.3(e) sufficiently clear to allow NEMMCO to use this clause to manage a power system incident?**

22. **What other alternatives could be considered to address the issue of a participant gaining financially from a breach of its performance standards?**

Attachments

Terms of Reference

MCE

Ministerial Council on Energy

CHAIR
The Hon Ian Macfarlane MP
Minister for Industry, Tourism and Resources
Telephone: (02) 6277 7580 Facsimile: (02) 6273 4104

Dr John Tamblyn
Chairman
Australian Energy Market Commission
PO Box H166
AUSTRALIA SQUARE NSW 1215

RECEIVED
25 NOV 2005

22 NOV 2005

22 NOV 2005

Dear Dr Tamblyn John

As Chair of the Ministerial Council on Energy (MCE), I am writing to request that the Australian Energy Market Commission (AEMC) conduct a review on the enforcement of, and compliance with, the technical standards under the National Electricity Rules.

This request is pursuant to Part 4, Division 4 of the National Electricity Law (NEL), which provides that the MCE may, by written notice, direct the AEMC to conduct a review into:

- any matter relating to the National Electricity Market (NEM); or
- the operation and effectiveness of the National Electricity Rules; or
- any matter relating to the National Electricity Rules.

Terms of Reference for this review have recently been endorsed by the MCE and are included in the enclosed Notice of Reference. This resolution is dated 11 October 2005.

As outlined in the Notice of Reference, the AEMC should determine the extent to which the security of the national power system is maintained under existing arrangements and give consideration to improvements that could be made to the investigative and rectification provisions under the National Electricity Rules. In addition, it should review penalty provisions under the NEL with a view to more closely aligning penalty levels with the social and economic impacts associated with breaches of the National Electricity Rules.

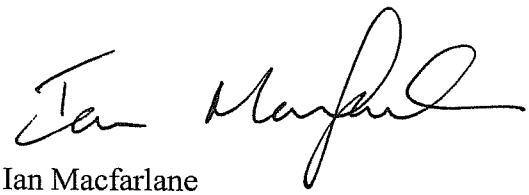
In conducting the review, the AEMC should identify ways of improving the security and reliability of the system that are consistent with improving the overall operation of the NEM. Ultimately, this may lead to the AEMC providing formal recommendations to the MCE that changes be made to aspects of the NEL and/or the National Electricity Rules.

The MCE will consider the results of the review and will announce its response as soon as possible after receiving the AEMC's final review report.

MCE Secretariat
GPO Box 9839 CANBERRA ACT 2601
Telephone: (02) 6213 7789 Facsimile: (02) 6213 6689
E-mail: MCE@industry.gov.au
Web Site: www.mce.gov.au

If you have any queries about this letter, then please contact Mr Vince Duffy from the South Australian Department for Transport, Energy and Infrastructure on (08) 8204 1724.

Yours sincerely



Ian Macfarlane

National Electricity (South Australia) Act 1996

NATIONAL ELECTRICITY LAW

NOTICE OF REFERENCE UNDER PART 4, DIVISION 4

Enforcement of, and compliance with, the technical standards under the National Electricity Rules

1. BACKGROUND

1.1 Whilst system security is a primary responsibility of the National Electricity Market Management Company Limited (**NEMMCO**), the maintenance of a secure power system relies upon all network service providers and each market participant ensuring that they meet their obligations under the National Electricity Rules (**Rules**).

1.2 There has been considerable development of the technical standards framework over the past 5 years in the recognition of the inadequacies of the technical performance arrangements. This framework came into effect in December 2004 with obligations on market participants to establish compliance-monitoring programs by June 2005.

1.3 Where the market operator considers that a participant is not, or may not, be meeting their obligations, immediate action must be taken to ensure security is maintained. That action needs to provide clear:

1.3.1 Direction as to what the perceived problem is and what actions are expected of the participant to remedy the potential breach and confirm that their plant does not represent a security risk; and

1.3.2 Commercial incentives which recognise the importance of compliance with technical standards and which motivate participants to give the highest level of attention to remedying the problem.

1.4 Several events in the market over the last eighteen months raise concerns as to the efficacy of the current arrangements to promptly and efficiently enforce technical standards critical to the security of the power system; including:

1.4.1 An incident on 8 March 2004, which resulted in approximately 650 MW of under-frequency load shedding in the South Australian region. Subsequent investigations by NEMMCO identified some possible actions by NRG Flinders and ElectraNet. None of those actions had been

implemented a year later and further investigations to resolve the issue did not appear to be proceeding with sufficient priority.

1.4.2 On 14 March 2005 the same equipment at the Northern Power Station again triggered an event, resulting in approximately 700MW of load shedding in South Australia. NEMMCO then declared that the event was a credible contingency and applied constraints in the market to ensure system security was maintained. Those constraints actually operated to provide commercial advantage to generators in South Australia and did not provide a formal process to remedy the situation in as short a time as possible. In this case it is recognised that NRG Flinders subsequently resolved the problem, and satisfied NEMMCO it had done so, in early June 2005.

1.4.3 An incident on 13 August 2004, which resulted in approximately 1500MW of under-frequency load shedding across the Queensland, New South Wales, Victorian and South Australian regions. As at early June 2005, rectification of the failure of three of the generating units involved in the incident is still to be undertaken, raising significant questions as to whether the system could withstand a similar technical fault.

1.5 These recent market events have highlighted inadequacies in the National Electricity Market (**NEM**) arrangements, particularly with regard to:

1.5.1 Enforcement of, and compliance with, the technical standards under the Rules;

1.5.2 The ability of those compliance arrangements to deal with any potential breach expeditiously;

1.5.3 The potential for perverse incentives on market participants; and

1.5.4 The level of penalties under the National Electricity Law (**NEL**).

1.6 Pursuant to Part 4, Division 4 of the NEL (a Schedule set out under the *National Electricity (South Australia) Act 1996* (**Act**)), the Ministerial Council on Energy (**MCE**) by written notice, may direct the Australian Energy Market Commission (**Commission**) to conduct a review into:

1.6.1 Any matter relating to the National Electricity Market; or

1.6.2 The operation and effectiveness of the Rules; or

1.6.3 Any matter relating to the Rules.

1.7 Participating jurisdictions under the NEL are:

The Commonwealth;

The State of New South Wales;

The State of Victoria;

The State of Queensland;

The State of South Australia;

The Australian Capital Territory; and

The State of Tasmania,

and have agreed to the reference set out below.

2. REFERENCE

We, the MCE, by resolution dated 11 October 2005, hereby direct the Commission to review the matter described in paragraph 3.1 of the Terms of Reference pursuant to Part 4, Division 4 of the NEL, in accordance with the Terms of Reference specified below.

3. TERMS OF REFERENCE

The following are the Terms of Reference for the review specified pursuant to section 41 of the NEL:

3.1 Given the importance of maintaining system security and reliability in light of recent market events, the Commission is to review the investigative, rectification and penalty provisions under the Rules to ensure an effective enforcement and compliance regime, including:

3.1.1 The current processes and timing, under Chapter 5 of the Rules, for ensuring the prompt rectification of any non-compliance with the technical standards, in addition to the formal Rule enforcement procedures;

3.1.2 Within the existing institutional structure, consider measures to strengthen NEM institutional roles (such as coordination and the allocation of responsibilities) for monitoring, investigating and directing compliance with technical standards under the Rules (including but not limited to the adequacy of Clauses 4.15 and 5.7.3 of the Rules);

3.1.3 Whether the courses of action available to manage network security in the event of non-compliance with the technical standards provide appropriate incentives to rectify faults and thereby minimise any adverse economic effects in the NEM; and

3.1.4 Whether the level of penalties currently prescribed in the NEL for breaches of Chapter 5 of the Rules are adequate, given the economic and social impacts of such breaches.

3.2 On completion of the review, the Commission may recommend Rule and NEL changes to the MCE;

3.3 In undertaking the review, the Commission is to:

3.3.1 Give consideration to the 8 March 2004, 13 August 2004 and 14 March 2005 NEM events and any other relevant events; and

3.3.2 Have regard to any other factors the Commission considers relevant.

4. CONDUCT OF THE REVIEW

4.1. Following the receipt of these terms of reference, the Commission's review process shall consist of at least the following:

4.1.1 The publication of a notice of review, as required pursuant to section 43 of the NEL, no later than 7 days following receipt of these terms of reference;

4.1.2 The release of an Issues Paper within 60 days of receipt of these terms of reference, in whatever form the Commission considers appropriate, setting out the information it requires Registered Participants to provide by a date specified in the Paper, and seeking comment on the key issues to be addressed in its review;

4.1.3 Registered Participants and other interested parties will have 60 days to comment on the Issues Paper and to provide information to the Commission as required;

4.1.4 The release of a draft Report to the MCE no later that 60 days following the close of submissions on the Issues Paper, which will include a Rule change proposal to the MCE, if required, and recommendations on the appropriateness of the penalties under the NEL; and

4.1.5 The submission of a final Report to the MCE.

4.2 The consultation process may consist of a public hearing, seminar or workshop but the Commission may receive and consider any written submissions as it thinks appropriate.