NATIONAL GENERATORS FORUM

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The Chairman
Australian Energy Market Commission
PO Box H166
Australia Square, NSW 1215

Submission by email: submissions@aemc.gov.au

Dear Dr Tamblyn,

Enforcement & Compliance with Technical Standards under the National Electricity Rules

On the 25 January 2006, the AEMC published an Issues Paper entitled 'Enforcement and Compliance with Technical Standards under the National Electricity Rules' in response to the Ministerial Council on Energy (MCE) Direction and Terms of Reference dated 22 November 2005.

The National Generators Forum (NGF) welcomes the opportunity to comment on this important review, given the potential ramifications for generators operating within the National Electricity Market. We believe that, if system security is the core concern of the MCE, the terms of reference you have been given are inappropriate in achieving this result

It should be noted that the NGF and each of its members support the use of technical standards as a means of achieving the NEM objectives, including the emphasis on reliability and security of supply in the interconnected national electricity system that the technical standards should be designed to promote.

However, there are major problems in the practical implementation of the requirements of the technical standards regime for generators. Further enforcement and compliance measures will not solve these underlying problems nor achieve the desired increase in system security. In our view a major revision is needed to the existing National Electricity Market Rules ("Rules") and processes in order to achieve a set of practical, workable and cost effective outcomes.

In order to further explain our views we have attached a detailed submission consisting of the following Appendices:

Appendix A - listing our key issues for consideration
Appendix B - addressing the 22 points raised in the AEMC Issues Paper
Appendix C - elaborating on the 3 system events that have, in part, sparked this review
Appendix D – consideration of the appropriateness of the current penalties for breaching the Rules
Appendix E - copy of the NGF letter to the MCE regarding system security.

Whilst each of these Appendices elaborates the detail of our views, the following list summarises our key concerns:

1. The NGF does not believe there is any justification for an increase in the penalties for non-compliance given that market and plant risks are very strong drivers on generators to ensure reliable operation. The current penalty regime is not the problem.

2. A focus on the enforcement and compliance element of the technical standards framework will do little other than provide a means of finding parties to blame for poor security outcomes. Importantly, it will not maximise the chances of maintaining a secure power system. (Refer to the NGF letter to MCE as attached in Appendix E).

3. The most critical aspect that underpins the MCE concerns is the requirement for generators to be able to “ride through” faults on the transmission network.
This capability is impossible to guarantee at all times and extremely difficult and largely impractical to be tested beforehand.

4. The Terms of Reference (TOR) developed by the MCE does not acknowledge nor address the long standing issue of onerous and ill-defined technical standards for generators for which total compliance is not feasible. Furthermore, the current formulation of these standards is not consistent with the objectives of the NEM.

Appendix 3.3.2 of the TOR allows for any matter relating to the NEM or the operation and effectiveness of the National Electricity Rules to be considered. The NGF therefore urges the AEMC to consider the need for a major overhaul of the current technical standards regime. In order to achieve its aims, this current review must set in motion changes to the technical standards regime that result in practical, achievable outcomes that do improve the security of the power system in a cost effective way.

5. The TOR contains unfair and incorrect criticism of generators in relation to their performance during these nominated 3 system events and the subsequent perceived commercial advantage derived from non-compliance. A detailed analysis of these events is attached so that the AEMC has a fuller understanding of the causes and outcomes.

6. In focusing on generator compliance the TOR ignores the lack of any performance standards or penalties applied to Transmission Network Service Providers (‘TNSPs’) for the design, operation and maintenance of the high voltage network under the Rules. Such an omission is, in our view, material because it is arguable that the majority of the most significant power system shutdown events in electricity systems around the world are attributable to transmission faults coupled with incorrect operation of TNSP protection systems. A regime of compliance to technical standards similar to that for generators should be considered.

7. The technical standards and their compliance regime constitute a set of very complex technical requirements that can only be made to work by a co-operative approach between NEMMCO, TNSPs and market participants to manage system reliability and security in a cost effective manner.

If you have any questions in relation to this submission, please call me.

Yours faithfully

John Boshier
Executive Director

APPENDIX A – KEY ISSUES TO BE CONSIDERED

1. PROBLEMS WITH THE CURRENT TECHNICAL STANDARDS

There are many problems with the current technical standards as they apply to generators. In particular the following issues with the technical standards need resolution:

1. Is the current set of performance standards the correct set for the market?

   As highlighted in the AEMC Issues Paper, "technical standards" is not a defined term under the Rules. At a fundamental level, this question needs to return to the original NECA review of performance standard concept which was to determine the minimum set of standards for all participants that would deliver a desired level of system performance in the NEM. That review also identified that the performance standards had two roles; one to ensure system performance and a second to ensure that NEMMCO was able to predict the outcomes of system events.

   That said, the AEMC has identified the following standards which impose a compliance obligation on generators as relevant technical standards for the purposes of their review:

   - performance standards for Generators 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 Generators set out in schedule 5.2, which form the basis for performance standards; and
   - obligations of Generators under clause 5.2.5, which includes an obligation to comply with system standards, an obligation to comply with the reasonable requirements of a Transmission Network Services Provider in respect of equipment design requirements and an obligation to permit inspection and testing of facilities.

   The NGF is of the view that there are no additional technical standards in the Rules that should be considered by the AEMC as part of this review.

   For the purposes of this submission, the NGF has adopted this range of Rules requirements as generator “Technical Standards”.

2. Has the grandfathering process resulted in an equitable solution for existing generators that have been connected to the NEM without major system security or reliability issues?

   From the inception of the National Electricity Market (NEM) it was generally accepted by NECA that generators should not be required to undertake expensive plant modifications and upgrades to satisfy any new plant performance technical standards that NEMMCO or the Reliability Panel subsequently considered

necessary or desirable for adoption in the new NEM. This NECA position reflected the prevailing positions adopted by the participating jurisdictions in the NEM who required the inclusion into the National Electricity Code of specific jurisdictional derogations to, among other matters, grandfather existing plant performance standards of existing generators where they could not meet the proposed new NEM standards.

When NECA, responding to the Code requirement to undertake a review of technical standards within two years of market commencement further considered this matter, it reconfirmed this position.

The ACCC's original grandfathering of existing generators attempted to imbed a position whereby generators did not face increasing obligations both in an economic sense to upgrade plant or a technical aspect of having to meet standards it was not previously obliged to meet.

When the ACCC reviewed NECA's application to amend the Code with respect to technical standards, it noted:

> ***"The objective is not to impose new obligations upon existing plants*** (our emphasis) *but rather to ensure that all plants have clearly defined obligations for the future"* [1]

The ACCC authorised these Code changes on 26 February 2003 (see applications for authorisation Nos A90834, A90835 and A90836 made on 3 June 2002). The performance standard grandfathering provisions under the Code were clauses 4.13 and 4.14.

The Code changes that NECA developed to achieve this grandfathering and the authorisation by the ACCC did not however adequately achieve this intention with the end result that the Code changes actually increased the performance requirement for generators.

In early 2003, NECA gazetted amendments to the National Electricity Code ("**Code**") arising from its review of Code technical standards. The amendments, which became effective on 16 November 2003, introduced:

- new clauses 4.13 and 4.14, providing for the determination of performance standards for plant existing as at 16 November 2003 and their registration with NEMMCO;
- new clauses 4.15, requiring participants to comply with performance standards, including implementation of compliance programs;
- new clause 5.3.4A, providing for negotiation of access standards for new plant, having regard to automatic access standards and minimum access standards, to become registered performance standards; and

[1] ACCC: Applications for Authorisation; Amendments to the National Electricity Code - Technical Standards; 26 February 2003 Authorisation Nos: Commissioners: A90834 Fels, A90835 Jones, A90836 Bhojani, at page 32

- amendments to the chapter 5 schedules including new schedule 5.1a defining system standards and amendments to schedule 5.2 regarding conditions for connection of generators.

The NGF is of a view that the fundamental premise of grandfathering existing plant has been lost to the market through a faulty Code change process and a compromised negotiation framework that sets the generator against NEMMCO and TNSP's who are conflicted in their roles.

3. Are the standards drafted so that all parties can use them?

The standards obviously have to be able to be used to determine connection agreements, performance standards and the resulting equipment design before construction. They also must be drafted in such a way that they can be measured to assure compliance, including defining how and what should be tested. However, the standards in places are poorly drafted and are not well integrated, with interactions between the standards ignored. The compliance framework is therefore based on a faulty and inefficient technical standards regime which does not support the true technical capabilities of generators. As a result the compliance framework currently being implemented by NEMMCO and that is the subject of this review will not achieve its objectives and can only be deemed to be detrimental to generators.

The standards should be drafted as standards against which the unit can be tested for compliance. The obligations ought to be to test regularly for compliance; notify non-compliance where this becomes known (either by testing or during operation); rectify during the reasonable period notified by NEMMCO; and (if the unit cannot be rectified during the period notified by NEMMCO) then not operate the plant commercially after that period until the plant has been rectified.

4. What are the correct regulatory roles in compliance and how often should compliance be demonstrated?

We believe that NEMMCO has the prime role in analysing system events and that the performance of plant during these events provides an assessment of compliance. A Rules breach ought not arise unless the Generator fails to perform the compliance program obligations; fails to notify NEMMCO of known non-compliance; or commercially operates the unit (ie other than for testing purposes) after the rectification period notified by NEMMCO whilst knowing that the unit is non-complying. The AER's role should be limited to examining reports of breaches of Rules obligations defined in these terms.. This does not limit the AER's proper role of asking participants whether they have the necessary programmes in place to meet their compliance needs.

5. How are changes to the TNSP network managed?

The original NECA review established the principle that a connected entity, once connected, should only be required to augment or change its plant during major (and related) refurbishments or modifications. It was accepted that system requirements could change but had to allow for currently connected parties.
It has been brought to the attention of a number of generators that the TNSP's believe that even though technical standards may be registered (effectively

providing the benchmark for generators to comply with) that as the network changes around the generator, the TNSP is able to request the generator to upgrade its plant beyond original design capability to ensure future compliance.

2. FAILURE OF GRANDFATHERING OF TECHNICAL STANDARDS TO ACHIEVE THE STATED OBJECTIVE

While the individual performance standards for new generating units are a matter for negotiation prior to construction, all existing generators were proposed to have existing performance "grandfathered". To quote from NECA as reported in the AEMC issues paper:

"Existing plant should be able to treat its current performance as its registered performance standard."

Further, in its final determination granting authorisation to the technical standards Code changes, the ACCC indicated

"For existing plant, in determining the applicable performance standards, it will be deemed to have effectively met the access standards applying at the time of connection. Where standards of performance provided in the connection agreement or where the derogation contains sufficient detail, the standards set out in connection agreements and existing derogations will effectively become registered performance standards. However, in the case where the performance is not suitably specified in the connection agreement or derogation, the responsible party for the plant must agree the plant performance standards with NEMMCO. Performance standards will be registered with NEMMCO to enable them to use the information contained to operate the power system.."[2]

The grandfathering process defined in the Rules, as administered by NEMMCO and the TNSPs, has widely failed to deliver this outcome. These failures include many performance standards beyond the current design performance of the plant, and also many cases where performance standards remain undefined.

The problems need to be rectified and performance standards in accordance with this stated intention should be put in place, before the issue of conformance can be properly addressed. The rules need to be clear and possible to comply with, before changes to enforcement are considered.

It is also necessary to emphasise the critical importance of this issue in relation to the NEM objective as there is a danger that "grandfathering" may be seen as a favour to existing generators.

This is not the case, and the true issue here is one of sovereign risk. The application of new technical standards to existing generators is wrong for much the same reasons as any retrospective legislation or regulation is likely to be wrong.

If the regulatory regime of the NEM were to allow unplanned costs to be imposed on generators because of new technical requirements, then any potential investor contemplating generator construction would have to allow for similar imposed costs in future. This would raise an additional hurdle to investment, potentially delaying

[2] ACCC final determination on technical standards , Op Cit page 32

investment thus worsening reliability of supply and increasing its cost, contrary to the NEM objective.

It should be noted that it is the possibility of such unpredictable cost impositions that creates the harm, and this harm would be done even if the power to impose retrospective requirement was never actually used.

The power to impose higher technical standards on existing generators is not only harmful, it is also unnecessary. Any changed requirements can be dealt with by alternatives including investment in the transmission network. In accordance with the objective of the NEM, an economic choice should be made between these alternatives, rather than using technical standards to compulsorily acquire the service. In other words, economic efficiency requires that services be acquired by commercial arrangements, not compulsory acquisition.

To achieve the NEM objective, the grandfathering of existing plant performance must be made fully effective. Related protections should also be provided to new generators against future cost impositions.

3. FAULT "RIDE THROUGH" REQUIREMENTS (AVOIDANCE OF CASCADE FAILURES)

The MCE concerns raised in the Terms of Reference and the penalties applied to various generators by the National Electricity Tribunal (NET) for three particular system events all relate to the ability of the generating plant to 'ride through' external faults on the transmission system. In essence such ride through capability is seen by these parties as the only technical standard of importance even though it is the most difficult to guarantee. Such narrow focus also dismisses the large number of issues with technical standards outside of the ride through requirement. The narrow focus on generator response also ignores the causal factors behind such faults.

Clause S5.2.5.3 of the NEM Rules requires that generating units be able to withstand disturbances in the power system, including under the *"Automatic access standard, a voltage dip caused by a transmission system fault which causes voltage at the connection point to drop to zero for up to 0.175 seconds in any one phase or combination of phases, followed by a period of ten seconds where voltage may vary in the range 80-110 percent of the nominal voltage, and a subsequent period of three minutes in which the voltage may vary within the range 90-110 percent of the nominal voltage"*.

In effect the above requirement is for a generator to be able to withstand a three phase fault condition on the transmission system lasting for a specified duration without the generator tripping off-line (which could compound the consequences of the fault).

Large coal-fired generating units are very common in the NEM. Such units consist of a large number of complex auxiliary drives, transducers and controllers which are sensitive to voltage and frequency excursions. It is impossible to ensure that a generator will at all times be able to withstand an external fault condition because it is not possible to test such a condition. Apart from checks and tests that can be done when a unit is out of service for maintenance, the only other measure is to monitor actual system faults that occur and for which generators do not trip.

Such ride through of actual system faults is after all the 'ultimate compliance test' and should be used as the measure of compliance. To only focus on system incidents that cause load shedding is inappropriate. To ignore the origin of such faults and whether these factors could be better addressed is also inappropriate.

Additionally, even the appropriateness of this specific "ride through" requirement has been questioned by at least one TNSP during the Code change process that led to this change. This concern was specifically addressed in the ACCC's final determination on technical standards. [3]

"Generating unit responses to disturbances in the power system

ElectraNet contends that the proposed automatic access standard requiring a generating unit to withstand a 3-phase short-circuit fault at the connection point for a period of 175ms is unrealistic and inappropriate, particularly given that the design fault clearing times at the connection point are based upon a credible contingency event which would be a 2-phase to ground fault.

Preliminary analysis undertaken by ElectraNet indicates that several large generating units in SA and Victoria would not remain in synchronism under some operating conditions if a 3-phase fault of 175ms duration was applied at the high voltage connection points of those units."

However, notwithstanding this expert advice from a TNSP, the ACCC did not remove this requirement but essentially deferred a review of the appropriateness of this requirement to a later review by the Reliability Panel. The NGF is not aware whether the Reliability Panel has reviewed this matter but notes that the standard has still not been changed with respect to this requirement.

"Generating unit responses to disturbances in the power system

The Commission notes ElectraNet's view that it is inappropriate for the automatic access standard to require a generating unit to withstand a three phase short circuit fault for 175 ms. The Commission considers that the Reliability Panel should review this matter in conjunction with the review of fault clearance times required by condition 4.10. [4]

[3], ACCC final determination on technical standards , Op Cit at page 26.

[4] Ibid

4. NO PERFORMANCE PENALTIES ON TNSPS

Under the NEM Rules, generators have performance standards, based on technical standards. Customers have technical standards, which indirectly affect Distribution Network Service Providers and also end-use customers. Market Network Service Providers also have technical standards.

TNSPs, uniquely, have no performance standards.

It is acknowledged that all market participants, including TNSPs, are required to conform to system standards, however these are not of the specific, detailed and enforceable nature as the technical standards and performance standards applying to generators and to market customers.

The absence of performance standards for TNSPs is not because the performance of these networks is of no consequence. In particular, there are two areas of operation where TNSP performance is critical to system security:

1. TNSPs need to ensure that their high voltage equipment does not fail in its own right or at least that in service failures are kept to the absolute minimum. (This includes both substation equipment and transmission line equipment).

2. TNSPs need to ensure that high voltage faults are cleared off the power system expeditiously by correct operation of TNSP protection systems and circuit breakers within the design clearance times.

Further it must be noted that the power system is not designed to withstand all possible fault incidents thus certain fault events will lead to power interruptions despite the best intentions of all parties concerned (eg non-credible contingencies). In particular, it is important to note that most major power system shutdown events around the world were caused by TNSP equipment NOT generation.

It is noted that TNSPs are required to meet the NEM network performance requirements under Schedule 5.1 of the Rules, and where their facilities may affect system security such as protection and control equipment, they must undertake routine testing. Their requirement to institute and maintain a compliance program as defined in section 5.7.4 of the Rules where they are only required to ensure their facilities “operate reliably” however, falls short of the onerous obligations imposed on generators to “provide reasonable assurance of ongoing compliance with each applicable performance standard” ((4.15(c)(4)).

In regard to the events mentioned in the reference for this review, all three had their origin in a transmission network event. We believe that in at least two of these events, the TNSP performance had a crucial role in determining the severity of the eventual outcome, and that this has not yet been adequately recognised in reports on these incidents. In each of these cases, generators have been penalised for failure to withstand faults on the TNSP networks, while the networks have not, we believe, been held accountable.

Transmission networks, unlike distribution networks, comprise large and discrete items of plant. In this sense they are similar to generators, but their control and protection systems are less complex. In our view, system security would be enhanced if TNSPs were subject to a similar regulatory regime to generators; that is, an ex-ante compliance with technical

standards. The light handed ex-post regime that is currently the practice is inconsistent and out of balance with the regime applying to generators.

The lack of performance standards applicable to TNSPs has a further indirect effect on the issue of generator technical standards including:

- Requirements for generators to withstand events originating in the transmission network, and to
- Requirements for generators to provide additional performance capabilities that could otherwise be provided by investment in the transmission network.

Clearly the TNSPs are not disinterested parties in relation to generator performance standards. This raises two major concerns.

Firstly, the original technical requirements were drafted by NEMMCO and the TNSPs with the intent of locking in technical performance. However the Rules were drafted in isolation with no input by generators and have thus resulted in the failure of the Rules to achieve a practical set of technical standards and compliance requirements. Further we have concerns as to whether a proper balance has been achieved between requirements on generators to withstand network events and requirements on TNSPs to limit the disturbances that their network events cause.

Secondly, the market rules grant the TNSPs a quasi-regulatory role in relation to the setting of performance standards for generators. This may allow them to shift costs from themselves to generators without any economic analysis and without any regulatory oversight.

If technical performance requirements and penalties only apply to generators and not to TNSPs then power system security within the interconnected system cannot be ensured.

5. PERCEIVED COMMERCIAL ADVANTAGE FOR NON-COMPLIANCE

In the Terms of Reference for this review, paragraph 1.4.2 mentions “commercial advantage to generators in South Australia”, while paragraph 1.5.3 refers to the “potential for perverse incentives”.

The obvious implication is that the rectification of technical performance was delayed for commercial reasons. This contention appears to be a major driving force behind this review.

This perceived ‘commercial advantage’ arises as a consequence of actions taken by NEMMCO following the incident in South Australia on 14th March 2005.

The NGF makes the following general observations –

- It should be noted that the transmission line fault (TNSP insulator flashover) was not caused by the generator concerned and that there are no penalties on the TNSP for lack of preventative cleaning of line insulators.

- Following the fault incident, NEMMCO (i.e. not the participant) then determined the form of the constraint consistent with its normal practice. Thus the outcome

regarding power flows and pricing in the relevant period was determined by action taken by NEMMCO, not the generator,

- Base-load power stations such as Northern Power Station are generally highly hedged. To the extent of such hedging the generator does not benefit from one-off events raising spot market price.
- Similarly, retailers purchasing from the NEM are generally highly hedged. To the extent of such hedging they are also not disadvantaged by one-off events raising spot market price.
- In any event, it is highly likely in this instance that other forms of intervention would have had more severe market impacts. It is paramount to the efficient operation of the NEM that NEMMCO retain its primary focus on system security, and continue to minimise the market impact of any interventions. NEMMCO is not a regulatory enforcement body, and should not be expected to act as such.

A bigger financial issue would arise if the reverse situation were to apply, ie if a generator was constrained to low generation levels due to non-compliance. In this case similar market price outcomes would occur however the generator could sustain huge financial losses due to being constrained to generation levels below their contract obligations

6. REGULATORY REGIME IS INCONSISTENT WITH OTHER INDUSTRIES

The regulatory regime for technical standards on generators is inconsistent and overly harsh compared to other regimes in other industries.

Some examples:

- were gas producers fined over the Moomba production failure?
- are gas producers and pipeline operators required to meet similar technical standards?
- are telecoms required to guarantee telephone services are not affected by power disruptions?
- are telecoms mandated to meet any demand for services such as during a national crisis or other high demand period?
- are electricity distributors fined for inability to 'ride through' a fault?
- are any regulated suppliers of products in any other industry required to effectively guarantee supply in the face of contingent events? (such as extreme weather, storms etc)?

As stated in the attached Appendix D with reference to the Rules requirement to comply with connection agreements or be possibly held in breach of the Rules:

“we can think of no other industry or form of contract where the legislature has imposed a legislative requirement to perform a private contract, or imposed legislative accessorial liability for performance of the contract”.

APPENDIX B – The 22 Issues Identified by the AEMC

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

Yes, there are only minimal technical standards for TNSPs and no compliance regime yet alone any penalty regime for non-compliance even though the majority of power system shutdowns around the world have been caused by faults on transmission networks and mal-functions to TNSP equipment to adequately clear the faulted equipment.

The status of 'precedents' established by the NET also needs to be clarified. In one of the recent cases cited, the NET in its judgement applied a particular interpretation to a generator performance standard (namely the meaning of 'continuous uninterrupted operation'). Does this ruling apply only to the particular generation unit, or more generally across the NEM? Can courts in future arbitrarily determine technical standard definitions under the NER? A more clearly defined process is required.

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?

The technical standards are too complex and ill-defined. While generators have developed compliance programmes, gaining necessary agreement with NEMMCO and meeting the requirement to 'ensure at all times' is proving difficult and generally impossible. In addition, there is little scope for effective negotiation on the standards with monopoly TNSPs under the current framework.

NEMMCO's role does need to be more clearly defined to ensure that even higher performance standards cannot be unreasonably invoked.

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?

The majority of generating plant currently installed in the NEM was designed and installed prior to the commencement of the NEM, to prevailing design standards. However, the Rules define that the performance obligations of the plant as defined at the time the performance standards regime came into place are the "agreed performance standard". Plant testing during compliance monitoring should be used to inform NEMMCO of the standards, but the emphasis is on defined obligations not performance.

A number of generators did not have accurate derogations, or performance standards imbedded as part of their connection agreement. The inability to therefore rely on actual capability as a means of grandfathering was ill-conceived and we believe acted contrary to the ACCC's authorisation. Consequently, the intent of the grandfathering process was lost.

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?

Performance standards must be allowed to develop to meet system needs. However, the principle that currently connected parties are not required to modify their plants to meet changed standards must be appropriately enshrined, retained and observed.

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

The current standards are unclear and still not defined in a technology neutral way. The standards are not only poorly drafted, but fail to recognise the interactions between them. Each standard applies as a stand-alone obligation, and therefore a breach of any nature is considered a per se offence, regardless of contributing factors or causes that may have even exceeded the limit of other obligations. It is also unclear how verification of plant performance should occur. The standards need to be assessed and redrafted before compliance issues are addressed.

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

Clause 5.7.3(b) of the Rules requires a Generator to negotiate in good faith with the relevant NSP and NEMMCO, a compliance monitoring program to ensure ongoing compliance with performance standards (and other connection and technical requirements). No obligation to negotiate in good faith is placed on the relevant NSP or NEMMCO. Given the lack of direction in the Rules regarding compliance program content, and given that a Generator suffers potential liability for failure to comply with performance standards, in our view a Generator should have final control over the content of its compliance program, rather than being required to reach agreement with the NSP or NEMMCO in respect of the compliance program.

In addition, even once performance standards have been set, NEMMCO has some ability to require a Generator to adopt further or more robust standards. Particularly, clause 4.15(b)(a)(3) of the Rules requires a Generator to ensure its plant ceases to be likely to cause a material adverse effect on power system security if advised by NEMMCO.

The NGF is of the view that if a Generator is complying with performance standards, then NEMMCO's scope for imposing additional standards because of likely, but not proven, adverse effects on system security should be limited (particularly given that NEMMCO also has power to issue system security direction under clause 4.8.9).

With these improvements, the compliance program framework then needs to be allowed a reasonable period of operation before effectiveness can reasonably be assessed, recognising that the compliance programs are only just being implemented.

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

Clause 4.15(a)(1) requires that a Generator must ensure that its plant meets or exceeds the performance standard applicable to its plant.

Failure to meet this is a breach of the Rules and a civil penalty provision.

Arguably, clause 4.15(a)(1) is breached immediately that a fault develops in the plant which would cause the plant to not meet its performance standard.

There is no contemplation in clause 4.15(a)(1) of compliance programs, reasonable rectification periods, maintenance, or taking the plant off–line until the problem is fixed. The liability under clause 4.15(a)(1) is strict and absolute. If the Generator does not meet the performance standard at any time, according to clause 4.15(a)(1) there is a breach of the Rules then and there, well before the issue is identified by any compliance program, and well before NEMMCO sets any period for required rectification.

It is virtually impossible for a Generator to be available and meeting its performance standards 100% of the time. It would be extremely inefficient to design plants in this way. On the contrary, plants are designed to have regular inspections and regular maintenance, including periods where the units are off-line and incapable of meeting the performance standards.

The issues which Clause 4.15(a)(1) is trying to address are much better addressed in 4.15(b), 4.15(f) and 4.15(j) of the Rules. When regard is had to these other provisions, it is realized that clause 4.15(a)(1) is redundant. Clause 4.15(a)(1) serves no useful purpose, and suggests that there is a strict liability where there ought not be a strict liability.

Therefore we are of the view that clause 4.15(a)(1) ought to be deleted.

Additionally, while an obligation is absolute, the assessment of fault needs to consider the circumstances. Standards have to be expressed in clearly defined terms and should be in the Rules. When NEMMCO reviews an event NEMMCO should identify when the absolute standards have not been met. The AER then needs to assess whether the breach was unreasonable and whether the participant had taken reasonable steps to avoid a breach.

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

Yes. It is important that the compliance and penalty regime does not reduce the current cooperative approach to the assessment of system events. Further, a participant reporting non-compliance detected during routine monitoring should attract no liability for breach, in order to encourage active reporting and ensure there are no perverse incentives.

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?

Yes, the AER should monitor compliance with technical standards. They are not, however, the correct body to examine the technical performance of the NEM. NEMMCO has a role to monitor the technical performance of the NEM and report it to all parties. The AER should enforce compliance when an issue is raised by NEMMCO, in consideration of all the facts and surrounding circumstances, as outlined above.

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?

Yes. The AER currently reports compliance quarterly and should continue to do so.

In this regard, it is important to recognise that technical compliance and major event analysis and reporting is far more transparent in the NEM than was ever the case historically. A clear case would have to be made before any further increase in reporting on generator plant performance and major incident investigation was considered.

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

Yes. NEMMCO must assess the technical issues and then set reasonably appropriate time table for rectification. The overriding focus of NEMMCO as the market operator should remain on system security, which provides clear guidance.

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

Yes, there already exists the potential for financial losses by generators (i.e. market losses and plant damage losses) much greater than any current penalty and which act as a very strong incentive to rectify any plant defect or non-compliance. Penalties under the NEM should be nominal only. Generators are of course not only open to financial penalty but come under severe scrutiny of the public and governments and as a result do everything in their power to ensure compliance.

The new NEL (s68) introduces a new liability of aiding abetting, counselling or procuring a breach or being in any way directly or indirectly knowingly concerned in or party to a "civil penalty provision" by a relevant participant. That is, external contractors, advisers and consultants to market participants can now be liable in respect of the civil acts or omissions of their participant clients. Employees of participants can also be liable under this new provision. There is no equivalent under the previous regime.

S85 of the NEL specifies that officers of a participant are concurrently liable with the relevant participant, for both offences and civil penalty provisions.

S77A of the existing NEL and ss 119 and 120 of the new NEL define "officer" with reference to s9 of the Corporations Act. However, s85 (and 86) of the new NEL defines "officer" more broadly, which also increases the scope of persons who may be liable for acts of the corporation under the new s85.

The new accessory provision (s68), and the new officer liability provision (s85), are new methods by which an employee who is not an "officer" (as defined under the existing NEL) could be prosecuted for a breach of the Rules by the corporation for which the employee works.

The new NEL does not properly recognise that the vast body of the Rules is procedural in nature, setting down how the market and an industry is intended to operate. In most other industries, these procedures and rules would be the subject of contractual or industry code provisions, and not matters for which officers, employees, contractors or consultants of corporations or participants would become personally liable for the performance by the corporation.

Piercing the corporate veil by legislation, and making employees officers, contractors and consultants personally liable for the acts of the corporation, is normally warranted only for serious offences. S68 is tantamount to using a sledgehammer to crack a nut.

Comparisons with the Corporations Act, the TPA or environmental protection legislation, are not relevant or appropriate. Those instruments deal only with the most serious matters, whereas so much of the Rules is procedural.

In fact at the time of introduction of the new provisions, the NGF identified a number of risks in imposing accessory liability on all "persons" within (or contracting to) the participant organisation, as this may:

- create uncertainty as to which persons within the organisation will fall under the remit of the regime with the result that internal procedures are likely to require substantial revision;
- cause difficulties with workplace relations in that all persons within the organisation may feel "at risk" of becoming subject to the liability regime;
- create a culture of persons not questioning or enquiring why they are carrying out instructions for fear of becoming "indirectly involved" in a breach;
- cause an increase in costs if "persons" at risk require a "risk premium" to be paid in addition to their current salaries;
- create staff shortages if a risk premium is not forthcoming; and
- cause behaviour which is opposite to that sought, for example traders within generator organisations may be reluctant to enter rebids (even where these are at lower prices) for fear of incurring personal liability, thus increasing costs to the industry as a whole.

If the policy intent was to introduce an accessory liability regime comparable to other legislative accessory liability regimes then this should distinguish between serious offences which affect the integrity of the market as a whole and for which the added deterrent of personal liability is deemed necessary and conduct which is essentially regulatory in nature.

Against this backdrop of increased liability, and the recent creation of the AER with its expanded investigation and enforcement powers under the new NEL, it would appear somewhat premature to be revisiting the current penalty and enforcement regime. The new arrangements remain largely untried and untested.

It is also noted that all of the recent prosecutions for breach of performance standards took place under the previous framework. Both NECA and the NET were active and vigorous in their enforcement of the performance standards. The AER has similarly expressed its intention to actively enforce the standards.

Consequently, there is no evidence to suggest that the current enforcement and penalty regime is in any way inadequate. As above, the focus should be on ensuring that the standards themselves are expressed with sufficient clarity that they can be complied with and enforced as legal obligations.

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?

NEMMCO should only refer actual compliance issues to the AER not potential non-compliance. Additionally, if you read Clause 4.15(j) of the Rules on its own, you would form the view that it is a reasonable expression of liability – If a Generator's plant remains in breach of a performance standard for longer than a period within which NEMMCO has determined is the period within which a Generator may rectify the breach, NEMMCO must notify the AER of the breach of the performance standard.

That is, a breach of a performance standard is identified, a period is given for the breach to be rectified, and if the breach is not remedied within the required period then the AER is notified of the breach and presumably the AER can then take enforcement action. However, many of the other Rules contain no opportunity for rectification (or even an opportunity for the Generator to become aware of the breach) before the breach of the standard becomes a Rule breach actionable by the Australian Energy Regulator as a civil penalty provision.
NEMMCO should also have discretion to extend the period for rectification based on the circumstances, consistent with its overriding objective of maintaining system security.

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

- The lack of an effective compliance regime for TNSPs and the lack of penalties on TNSPs.
- The incompatibility of the grandfathering process with what the existing generators are actually technically capable of achieving.
- The inequitable negotiation process between the generator, NSP and NEMMCO. This arises because the TNSP and NEMMCO have the ability to reject/accept standards but also have the conflict of interest of ensuring that the generators provide the highest possible level of technical support to the transmission network.
- The interactions between the standards.
- Subsequent remedial action and efforts undertaken.
- System interactions and the causes or contributing factors.

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?

Yes. The AER role is to monitor the market (in particular market price outcomes) and to enforce the NEM Rules. As such NEMMCO in conjunction with TNSPs and market participants should investigate system incidents at a technical level and put in place necessary corrective actions to improve the operation of the NEM. The AER then reviews reports to determine whether any enforcement matters have arisen and then investigates whether any enforcement action is required.

As above, investigation and enforcement powers have only recently been expanded with the creation of the AER under the new NEL.

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?

Up to the present time the market has been run in a co-operative approach between NEMMCO, TNSPs and market participants. If penalties are to be increased then the co-operative approach can only suffer. As stated elsewhere, the NGF believes there are already substantial drivers on generators to ensure that their plant performs in a reliable manner.

There is also nothing to suggest that generators have co-operated on anything other than a best endeavours basis with system incident investigations. The issues are inherently complex, interactions across the integrated system must be considered, and detailed technical investigations can involve significant time and cost. Information is not always readily available immediately after an incident, but often only comes to light through detailed investigation, analysis and expert advice.

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

Given the financial risks generators face from external network faults causing generating plant damage and/or market losses due to tripping of generating units, it is considered that there are already substantial incentives for generating companies to ensure that their generating plant is fully functional and performs securely.

Experience also suggests that multiple breaches can arise as a consequence of a single incident, potentially leading to numerous penalties for the participant. The damage sustained through negative publicity should also not be underestimated.

As discussed above, penalties and liabilities have only recently been increased under the new NEL, subsequent to the major system incidents which gave rise to this review. It would be premature to revisit the level of penalties at this stage given that firstly, there is no evidence that penalties are in fact insufficient, and secondly the new enforcement regime remains untested at this stage. Increasing of compliance obligations and penalties is also contrary to the ACCC's authorisation of the technical standards.

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?

No. It is not apparent at all that a breach of technical standards is any worse than any other breach in the NEM. It is also not true that the potential costs of a breach were not considered in development of the penalty.

Penalties in the NEM were previously graded depending on the impact of non-compliance on the system (and therefore customers) into classes A, B and C. The National Electricity Tribunal then applied an assessment of the relative impact of the breach within those classes in determining the actual penalty, including disconnection. Under that regime, minor breaches attracted fines of less than $10,000.

The MCE made a policy decision to remove that grading in favour of judicial discretion within a larger range, which was determined to be $0 to $100,000 (except for rebidding).

The new regime only commenced in the second half of 2005 and has not yet been applied. It is therefore too early to assess either the approach or the level of the fines.

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?

No, the current penalties are already excessive. If anything, greater emphasis should be placed on warnings and rectification notices to encourage a cooperative approach to compliance, with pecuniary penalties imposed only a last resort for serious, flagrant and repeat offences.

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?

No, as with all other matters of market operation, NEMMCO manages system security and not market price outcomes. NEMMCO's role is to dispatch plant in the most economically efficient manner possible whilst meeting system security standards. If NEMMCO was required to operate the market so as to achieve an outcome that also considered a participants' commercial outcome then this would put NEMMCO in an invidious position and would represent a dangerous departure from its independent role.

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

Yes, more than clear.

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

This perceived issue arises as a consequence of actions taken by NEMMCO following the incident in SA on 14 March 2005 and is very misguided in its thinking. Firstly it must be noted that neither the initial fault (TNSP insulator flashover) nor the subsequent market operation (NEMMCO) were caused by the generator concerned. Secondly, NEMMCO determined the form of the constraint consistent with its normal practice, not the participant, and is required to minimise the market impacts of its interventions.

A bigger issue would arise if the reverse situation were to apply, ie if a generator was constrained to low generation levels due to non-compliance and as a consequence could sustain huge financial losses with no relief.

APPENDIX C – THE 3 SYSTEM EVENTS

The AEMC Issues Paper refers to three System Events that were identified to be of concern to the MCE and for which any lessons learnt should be used to guide the review.

Firstly, whilst the NGF is obviously just as concerned as the MCE about these system events (listed as 'severely impacting on system security') there are substantial misconceptions in the MCE discussion of these incidents. As such the NGF must state its views on these events to ensure that the AEMC can ensure a balanced and practical assessment of enforcement of technical standards. This is required to ensure an appropriate outcome from any changes in the regulatory regime in regard to the enforcement and compliance regimes.

In particular it should be noted that the modifications to generator plant control and protection systems were complex and time consuming to investigate and determine corrective actions. It was not simply a matter of changing a setting or acting differently.

The NGF is concerned about such system events because of the following:

- The complete absence of any penalties let alone any criticism of the TNSPs for the role they played in these events. Complex system interactions in such events can not be ignored.
- The risk of substantial plant damage to generating plant arising from events occurring in the transmission network – damaged turbines are much harder to fix than transmission lines or switching equipment.
- The risk of substantial financial losses to one or more generators should their generating plant be forced off-line and market prices escalate to high levels.
- The risk of ongoing financial losses should plant be forced out of service for lengthy periods.

8 MARCH 2004 – BUSHFIRE AT PARA

> *"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."*

The units at Northern PS are fitted with protective devices designed to operate to momentarily reduce the output of each unit in the event of extreme fluctuations in order to prevent damage to the plant from over speed. This particular fault caused a large load swing of sufficient magnitude to initiate operation of this equipment to trigger turbine runback (the process of rapidly reducing generation). The settings of this equipment were determined at the time of commissioning.

This event leads to the following questions:

- If the generator behaved as would be expected for the conditions that arose, how could the technical standards and compliance regime be so miss-appropriated that it resulted in performance standard non-compliance by the generator?
- Given that the protection settings were originally established in conjunction with the TNSP, why did the TNSP not recognise that bushfires in the area concerned could cause the sequence of events that occurred and take action to prevent it?

13 AUGUST 2004 – CT FAILURE AT BAYSWATER SWITCHYARD

> *"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."*

This event was precipitated by the internal failure of a TransGrid 330kV current transformer (CT) in the 330kV switchyard at Bayswater PS. The faulty CT was then isolated by the operation of protection systems and opening of associated circuit breakers thus removing the fault off the power system. However, TransGrid control equipment then initiated a reclose onto the faulty CT causing it to explode and catch on fire. This second fault was also cleared off the power system but in turn was followed by a second reclose onto the faulty CT.

> **In other words, there were three separate high voltage busbar faults each of increasing severity.**

Clause S5.2.5.3 of the NEM Rules requires that generating units be able to withstand disturbances in the power system, including under the *"Automatic access standard, a voltage dip caused by a transmission system fault which causes voltage at the connection point to drop to zero for up to 0.175 seconds in any one phase or combination of phases, followed by a period of ten seconds where voltage may vary in the range 80-110 percent of the nominal voltage, and a subsequent period of three minutes in which the voltage may vary within the range 90-110 percent of the nominal voltage"*.

At Bayswater the first fault was indeed 'withstood' as required by the Rules however it was the second and third voltage dips from the reclosure that tripped the units due to the fault conditions greatly exceeding the fault ride through requirements of this clause.

The extreme fault conditions at Bayswater caused three Bayswater units to trip out of service due to complex transient current signals with DC off-sets arising from the fault. Several other generators also tripped due to the multiple fault conditions. Fortunately, after load shedding restored a supply-demand balance, the power system hung together thus avoiding a cascade failure that could have ended in a system shutdown.

This event leads to the following questions:

- Why was there no condition monitoring installed on these CTs to forewarn of an impending failure? (similar CT failures elsewhere)
- Why is reclosure installed for a busbar fault – the most severe fault that can occur in a power system?
- Why were there two reclosure attempts? (TransGrid has apparently disconnected the second reclosure feature after this event).
- Finally and most importantly, why are there no technical performance standards and no compliance programs applying to TNSPs and, consequently, no penalties on TNSPs?

A further issue for generators arises from the intention of NEMMCO to push for the technical standards to be altered to now require generators to be able to withstand the effects of multiple reclosure onto faults.

Additionally, even the appropriateness of this specific "ride through" requirement has been questioned by at least one TNSP during the Code change process that led to this change. This concern was specifically addressed in the ACCC's final determination on technical standards [5]:

> ***"Generating unit responses to disturbances in the power system***
> *ElectraNet contends that the proposed automatic access standard requiring a generating unit to withstand a 3-phase short-circuit fault at the connection point for a period of 175ms is unrealistic and inappropriate, particularly given that the design fault clearing times at the connection point are based upon a credible contingency event which would be a 2-phase to ground fault.*
>
> *Preliminary analysis undertaken by ElectraNet indicates that several large generating units in SA and Victoria would not remain in synchronism under some operating conditions if a 3-phase fault of 175ms duration was applied at the high voltage connection points of those units."*

However, notwithstanding this expert advice from a TNSP, the ACCC did not remove this requirement but essentially deferred a review of the appropriateness of this requirement to a later review by the Reliability Panel. The NGF is not aware whether the Reliability Panel has reviewed this matter but notes that the standard has still not been changed with respect to this requirement.

> ***"Generating unit responses to disturbances in the power system***
> *The Commission (ACCC) notes ElectraNet's view that it is inappropriate for the automatic access standard to require a generating unit to withstand a three phase short circuit fault for 175 ms. The Commission considers that the Reliability Panel should review this matter in conjunction with the review of fault clearance times required by condition 4.10. "* [6]

[5] ACCC: Applications for Authorisation; Amendments to the National Electricity Code - Technical Standards; 26 February 2003 Authorisation Nos: Commissioners: A90834 Fels, A90835 Jones, A90836 Bhojani, at page 26.

[6] ACCC final determination on technical standards, Op Cit page 7

14 MARCH 2005 – INSULATOR FLASHOVER AT PLAYFORD SUBSTATION

> *"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 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."*

This event was precipitated by the flashover of insulators at the Playford Substation. Contrary to some suggestions, the causes of the generation reduction in this incident were entirely different and unrelated to those causing the March 2004 incident.

This event leads to the following questions:

- Why is there no preventative maintenance program by the TNSP to clean polluted insulators?
- Why has no network action been taken to reduce the likelihood or severity of such an event? (eg extended auto-reclose times, as originally recommended by NEMMCO)

APPENDIX D – Review of the Rules and Penalties

The NGF has engaged Johnson Winter Slattery ("JWS") to provide a review of the Rules and penalties relating to technical performance standards for generators. The following extract is from that review:

2. Liability for failure to meet performance standards

The obligations on Generators under the Rules concerning performance standards are essentially of two kinds:

- those which go towards setting the standards; and
- those which go towards compliance with the standards.

2.1 Existing obligations going towards compliance with standards

The obligations of a Generator under the Rules which go towards compliance with the standards include:

- Clause 4.15(a)(1) – a Generator must ensure that its plant meets or exceeds the performance standard applicable to its plant;
- Clause 4.15(a)(2) – a Generator must ensure that its plant is not likely to cause a material effect on power system security;
- Clause 4.15(a)(3)(a) – a Generator must immediately ensure that its plant ceases to be likely to cause a material adverse effect on power system security if it reasonably believes that it is likely to cause such an effect (even if the plant otherwise complies with its performance standards);
- Clause 4.15(a)(3)(b) – a Generator must immediately ensure that its plant ceases to be likely to cause a material adverse effect on power system security if NEMMCO advises the Registered Participant that it is likely to cause such an effect (even if the plant otherwise complies with its performance standards);
- Clause 4.15(b) – a Generator must institute and maintain a compliance program compliant with clause 4.15(c), which requires that each of these provisions be met:
  - the compliance program must monitor the performance of the plant in accordance with the provisions of the compliance program [Clause 4.15(c)(1)];
  - the compliance program must ensure that the plant complies with the relevant compliance standard [Clause 4.15(c)(2)];
  - the compliance program must be in accordance with good industry practice [Clause 4.15(c)(3)]; and
  - the compliance program must provide reasonable assurance of ongoing compliance with each applicable performance standard [Clause 4.15(c)(4)].
- Clause 4.15(e) – the Generator must maintain compliance program records and deliver them to the AER when requested;

- Clause 4.15(f)(1) – a Generator must notify NEMMCO if the Generator becomes aware that the plant is breaching a performance standard;

- Clause 4.15(f)(2) - a Generator must notify NEMMCO if the Generator becomes aware that the plant is likely to breach a performance standard;

- Clause 4.15(k) – If a Generator's plant remains in breach of a performance standard for longer than a period within which NEMMCO has determined is the period within which a Generator may rectify the breach, NEMMCO must notify the AER of the breach of the performance standard.

- Clause 5.2.5(a) – A Generator must ensure that its facilities are operated to comply its connection agreement, all applicable performance standards, and the system standards.

Each of the 10 above identified Rules is a "civil penalty provision" [see schedule 1 of the National Electricity Regulations for a list of civil penalty provisions], for which serious consequences can follow for the Generator and/or its officers, employees, contractors, consultants or other agents.

2.2 Problems with the existing Rules

There are some significant problems with the existing Rules identified above which we believe should be addressed, including:

- some of them are redundant, or overlap or conflict with other Rules;

- some of them are impossible to comply with;

- some of them impose "strict liability" and have no regard to the knowledge or behaviour of the Generator or its officers or staff; and

- some of them impose liabilities where other civil remedies exist and are more appropriate.

These issues are examined in specific detail in the following paragraphs.

2.3 The time when breach occurs

If you read Clause 4.15(j) of the Rules on its own, you would form the view that it is a reasonable expression of liability – If a Generator's plant remains in breach of a performance standard for longer than a period within which NEMMCO has determined is the period within which a Generator may rectify the breach, NEMMCO must notify the AER of the breach of the performance standard.

That is, a breach of a performance standard is identified, a period is given for the breach to be rectified, and if the breach is not remedied within the required period then the AER is notified of the breach and presumably the AER can then take enforcement action.

However, many of the other Rules contain no opportunity for rectification (or even an opportunity for the Generator to become aware of the breach) before the breach of the standard becomes a Rule breach actionable by the Australian Energy Regulator as a civil penalty provision.

2.4 Clause 4.15(a)(1) – strict liability and immediate breach

Clause 4.15(a)(1) requires that a Generator must ensure that its plant meets or exceeds the performance standard applicable to its plant.

Failure to meet this is a breach of the Rules and a civil penalty provision.

Arguably, clause 4.15(a)(1) is breached immediately that a fault develops in the plant which would cause the plant to not meet its performance standard.

There is no contemplation in clause 4.15(a)(1) of compliance programs, reasonable rectification periods, maintenance, or taking the plant off–line until the problem is fixed. The liability under clause 4.15(a)(1) is strict and absolute. If the Generator does not meet the performance standard at any time, according to clause 4.15(a)(1) there is a breach of the Rules then and there, well before the issue is identified by any compliance program, and well before NEMMCO sets any period for required rectification.

It is virtually impossible for a Generator to be available and meeting its performance standards 100% of the time. It would be extremely inefficient to design plants in this way. On the contrary, plants are designed to have regular inspections and regular maintenance, including periods where the units are off-line and incapable of meeting the performance standards.

The issues which Clause 4.15(a)(1) is trying to address are much better addressed in 4.15(b), 4.15(f) and 4.15(j) of the Rules. When regard is had to these other provisions, it is realized that clause 4.15(a)(1) is redundant. Clause 4.15(a)(1) serves no useful purpose, and suggests that there is a strict liability where there ought not be a strict liability.

Therefore clause 4.15(a)(1) ought to be deleted.

2.5 Clause 4.15(a)(2) – strict and immediate liability

Clause 4.15(a)(2) requires that a Generator must ensure that its plant is not likely to cause a material effect on power system security.

Failure to meet this is a breach of the Rules and a civil penalty provision.

Like clause 4.15(a)(1), clause 4.15(a)(2) is arguably breached immediately that a fault develops in the plant which would cause the plant to have a material effect on power system security.

No regard is had to the Generator's knowledge of the fault, or the steps that it has taken to prevent the fault arising.

The way that clause 4.15(a)(2) is worded, there is arguably a strict liability for the fault, whether or not the Generator knows of it.

It would be better that clause 4.15(a)(2) is deleted, and instead reliance placed on the existing obligations in clause 4.15(a)(3) for the Generator to take immediate steps to rectify the problem where it is identified, and also rely on the other provisions which require compliance programs to prevent and detect such faults.

2.6 Clause 4.15(c)(2) – compliance program must work

Clause 4.15(b) requires Generator to institute a compliance program in relation to performance standards, and clause 4.15(c) sets out the necessary qualities of the compliance program.

Clause 4.15(c)(2) is unduly absolute in its terms - the compliance program **must ensure** that the plant complies with the relevant compliance standard.

No efficient compliance program can absolutely ensure that the plant will comply 100% of the time with the relevant standard. The compliance program can be designed towards that goal (which is what clause 4.15(c)(4) requires), and it can detect non-compliance at an early stage, but it is not possible to design a compliance program which absolutely prevents non-compliance or absolutely ensures compliance.

If a fault does develop in a plant and is identified, then even if it is rectified quickly it is arguable the compliance plan has not complied with clause 4.15(c)(2), because it has not ensured that the plant complies.

It would be better that clause 4.15(c)(2) were deleted, and instead that reliance was placed on the existing requirements in clauses 4.15(c)(1), (3) and (4), which better express the intention of the compliance programs.

2.7 Clause 4.15(k) – contemplation of off-line rectification

If a Generator's plant remains in breach of a performance standard for longer than a period within which NEMMCO has determined is the period within which a Generator may rectify the breach, NEMMCO must notify the AER of the breach of the performance standard.

A plant which is off-line for maintenance ought not be required to meet the performance standards for operational plants. This is perhaps an obvious statement, but it is not explicitly recognised in the current drafting of the Rules.

To ensure that this is the case, the word "operating" should be inserted between "remains" and "in breach" in clause 4.15(k), so that is opening words read "If the plant of a Registered Participant remains operating in breach of a performance standard…".

2.8 Clause 5.2.5(a) – overlap with contractual liability

Under clause 5.2.5(a) of the Rules, there is an additional requirement that a Generator must ensure that its facilities are operated to comply with its connection agreement, all applicable performance standards, and the system standards.

Clause 5.2.5(a) is a civil penalty provision.

To the extent that clause 5.2.5(a) relates to compliance with performance standards and system standards it is redundant, because those obligations are already dealt with in Chapter 4 of the Rules, in much more detailed form and with the relevant compliance programs and times for rectification. Clause 5.2.5(a) has none of the nuances and details for compliance that are contained in the Chapter 4 obligations discussed above.

So far as compliance with the connection agreement is concerned, clause 5.2.5(a) overlaps with the Generator's contractual obligations owed to the Network Service Provider under the connection agreement, and the contractual remedies available to the Network Service Provider. In this respect, clause 5.2.5(a) is effectively an attempt to legislate for compliance with a private contract.

Also, by making clause 5.2.5(a) a civil penalty provision, employees and associates of the Generator can be made liable for the Generator's performance of the contract.

We can think of no other industry or form of contract where the legislature has imposed a legislative requirement to perform a private contract, or imposed legislative accessorial liability for performance of the contract.

Also note that, whilst Generators and Customers are obliged to operate their plants and facilities so as to comply with the connection contract, the Rules do not impose a reciprocal legislative obligation on Network Service Providers to perform the connection contract.

The performance standards and system standards components of clause 5.2.5(a) of the Rules are already dealt with in Chapter 4, and the performance of the obligations of the connection contract are appropriately matters for contractual remedies between the parties.

Clause 5.2.5(a) ought therefore be deleted.

2.9 Summary of proposed amendments

The amendments which we propose be made to the existing Rules can be summarised as follows:

- delete clause 4.15(a)(1);
- delete clause 4.15(a)(2);
- delete clause 4.15(c)(2);
- insert the word “operating” between “remains” and “in breach” in clause 4.15(k); and
- delete clause 5.2.5(a).

3. Existing liabilities for breach

What are the liabilities and remedies under the Rules and the Code in respect of a breach of the standards?

There are five mechanisms already available under the National Electricity Law and Rules for enforcement of performance standards:

- direction by NEMMCO;
- issue of an infringement notice by the AER;
- Court order;
- officer liability;
- accessorial liability of employees and contractors.

3.1 NEMMCO direction

Where NEMMCO becomes aware of, or believes there is, breach of a performance standard, NEMMCO may require the Registered Participant to rectify the breach within a specified period. If the plant remains in breach for longer than this specified then NEMMCO must notify the AER of the breach (clause 4.15(i)).

NEMMCO may also require a Generator to conduct tests to demonstrate that a relevant generating unit complies with performance standards (clause 5.7.3(d) and (e) of the Rules).

3.2 AER infringement notice

Some of the key changes made by the MCE to the governance structure for the national electricity market, was the abolishment of NECA, the creation of the Australian Energy Regulatory as the body responsible for monitoring compliance with, and bringing proceedings in respect of breach of, the National Electricity Law and the Rules, and the conferral of jurisdiction on the courts to impose penalties and issue orders for breach of the Law and the Rules.

Clause 74 of the National Electricity Law empowers the AER to issue an infringement notice for breach of a 'civil penalty provision'. 'Civil penalty provisions' are defined in the *National Electricity (South Australia) Regulations*, and include clause 4.15(a) and clause 5.2.5(a).

By infringement notice, the AER may require a body corporate in breach of these clauses to pay an amount up to $20,000.

3.3 Court order

Part 6 of the new National Electricity Law authorises the Court (either the Federal Court or the Supreme Court of a NEM participating jurisdiction) to make range of orders where a participant is found to be in breach of the Rules, including payment of a civil penalty for breach of a civil penalty provision of an amount not exceeding $100,000 and an amount not exceeding $10,000 for every day during which the breach continues.

Accordingly, if a Generator were found by a Court to have failed to ensure that is plant meets plant performance standards or that its facilities are operated to comply with facility performance standards, that Generator is potentially liable for a penalty of $100,000 and of $10,000 for each day the breach occurred.

The Court may also order that the Generator take action to remedy the breach or prevent reoccurrence of the breach i.e. the Court may order that the Generator take action to ensure that its plant meets and is operated to meet performance standards.

The Court may, however, determine that a lesser amount than $100,000 and $10,000 per day of breach by paid by the Generator in breach. In determining the civil penalty payable, clause 64 of the new National Electricity Law provides that regard must be had to:

- the nature and consequences of the breach;
- the nature and extent of any loss or damage suffered as a result of the breach;
- the circumstances in which the breach took place; and
- whether the relevant participant has engaged in similarly conduct.

In this regard, clause 4.15(1) of the Code also required that the effectiveness of a compliance regime established in accordance with clause 4.15(b) be taken into consideration in any proceeding against a Registered Participant for a breach of clause 4.15(a).

To some extent, therefore, the Rule enforcement regime allows Generators to minimise the extent of their liability by ensuring they have in place effective compliance monitoring regimes, by ensuring there is a focus on compliance with significant performance standards that are required to be met for system security and by taking prompt action in the event of breach.

3.4 Officer and manager liability

Section 85 of the NEL provides that “officers” of a participant are concurrently liable with the relevant participant, for both offences and civil penalty provisions (including but not limited to rebidding civil penalties).

The officer liability provisions are accessorial in nature. To establish liability of the officer, it is only necessary to prove:

- *the contravention or breach was committed by a corporation;*

- *the person was an officer of the corporation; and*

- *the officer knowingly authorised or permitted the contravention or breach.*

The maximum penalty which can be imposed on a natural person for a civil penalty provision that is not a rebidding provision is $20,000, plus an amount of $2,000 for each day that the breach continues.

The standard of proof for civil penalties is not the criminal standard, but an easier standard for the prosecution to establish. The prosecution does not need to prove guilt beyond reasonable doubt, it only need establish the officer's liability on the balance of probabilities.

The officer can be proceeded against even if the corporation is not proceeded against.

The officer arguably can be obliged to testify on oath and does not have a privilege against self-incrimination.

The definition of "officer" for the purposes of section 85 of the NEL is broader than the Corporations Act, and extends to "a director of the corporation **or a person who is otherwise interested in its management**".

Therefore, officers and managers of a Generator already face significant personal liability for breaches of performance standards and compliance program obligations in relation to those performance standards.

3.5 Employee and consultant accessorial liability

The NEL reforms in 2005 (section 68(1)) introduced a new liability of aiding abetting, counselling or procuring a breach or being in any way directly or indirectly knowingly concerned in or party to a "civil penalty provision" by a relevant participant.

That is, external contractors, advisers and consultants to Generators can now be liable in respect of the civil acts or omissions of their participant clients. Employees of participants can also be liable under this new provision, even if they are not "officers" or "managers".

The civil accessorial liability under s68 is in addition to the accessorial liability for offence provisions of the NEL, and the officer liability provisions for both offence and civil penalties.

The person that is an accessory can be proceeded against for the same civil penalty provision as the person that is assisted by the accessory (the principal).

There is no requirement that the accessory be proceeded against only if the principal is prosecuted.

The maximum penalty which can be imposed on a natural person as accessory for a civil penalty provision that is not a rebidding provision is $20,000, plus an amount of $2,000 for each day that the breach continues.

The standard of proof for civil penalties is not the criminal standard, but an easier standard for the prosecution to establish. The prosecution does not need to prove guilt beyond reasonable doubt, it only need establish the officer's liability on the balance of probabilities. The accessory arguably can be obliged to testify on oath and does not have a privilege against self-incrimination.

APPENDIX E - NGF Letter to MCE

23 March 2006

The Hon Ian Macfarlane MP
Minister for Industry, Tourism and Resources
MCE Secretariat
GPO Box 9839
Canberra ACT 2601

Dear Minister

Your letter to the Chairman of the Australian Energy Market Commission dated 22 Nov 2006 concerning the enforcement of, and compliance with, the technical standards under the National Electricity Rules refers.

The National Generators Forum (NGF) is very concerned by the current approach by the Ministerial Council on Energy (MCE) to system security and its implications for generators' technical performance standards under the National Electricity Rules. Generators consider that the current approach has too narrow a focus and consequently will not benefit the security of the electricity system.

The NGF recognises the primary importance of maintaining system security and the central role which generators, transmission network operators and the National Electricity Market's manager and system operator (NEMMCO) play in its maintenance. The NGF is consequently well attuned to the level of importance which governments attach to system security.

4. Terms of Reference of Compliance Review

Governments have expressed this most recently through the collective MCE process by directing the AEMC to review one element of the system security framework - the enforcement and compliance regime for technical standards for generators. Given the importance of system security, it is essential that any review encompasses all issues affecting the various elements of the framework so that a common and comprehensive understanding of any problems can emerge.

The NGF is very concerned that the current review's terms of reference unnecessarily restrict the AEMC from considering issues of material significance pertaining to the other elements in the system security framework. Generators believe that such a limited review carries the great risk of overlooking or misconstruing matters so that any resulting changes will not promote, and may even detract from, system security.

The NGF understands the system security framework as the regulatory and institutional arrangements through which generators, network operators and NEMMCO perform functions to ensure a secure operating state. The NGF has the view that the framework has significant flaws in respect of the following matters:

- the allocation of responsibilities and accountabilities for ensuring the maintenance of system security among the parties who jointly comprise the system;

- incentives to maximise the cooperation of those parties to ensure system security;
- investor certainty; and
- consistency with the Market Objective.

A major objective of the recent MCE-driven changes to the NEM's legislative and governance arrangements was the achievement of clear lines of responsibility and accountability for NEM institutions. Although this has been partially achieved in respect of most aspects of the roles of the AER, AEMC and ACCC, the imprecise definition and poor allocation of responsibilities and accountabilities for system operation and security between NEMMCO, network operators and generators remains a major problem.

5. Network Problems and System Security

The National Electricity Law and Rules allocate NEMMCO the chief role of maintaining power system security. However, NEMMCO must co-opt network operators to perform certain system operation functions. Often NEMMCO and network operators have conflicting or overlapping approaches to system security. Notwithstanding NEMMCO and the network operators, generators carry the larger part of the accountability for system incidents, even though problems often begin within the transmission network (as has been the case recently).

Many of these problems were highlighted in the NEM governance and liability review of 1999 and were considered by the Market and System Operator Review Committee. These issues are still unresolved, so that network operators are not subject to any performance standard regime consistent with that applying to generators.

The NGF believes that system security will be best served when each relevant party is obligated to take responsibility for matters under its control and to co-operate with the other relevant parties to achieve a secure system. The current misallocation of responsibilities and accountabilities interacts with the threats of significant damage to reputation and financial penalties to discourage the necessary co-operation.

6. Investment Uncertainty

The regime presently imposes significant uncertainty on investors. In respect of some of the technical performance standards, plant built by various respected manufacturers cannot comply in its standard 'off-the-shelf' form. In other cases, it simply is not physically possible for generating plant to comply with a standard.

Investor uncertainty is exacerbated by the imposition of standards for which testing is not practicable, standards which are poorly drafted so that obligations are not clear, and by the *retrospective* application to existing and committed projects of new, more onerous standards. These issues contribute significantly to investor uncertainty, add substantial costs and risks to new projects, and can result in inefficient investment to meet demand.

7. Free Services

Finally, generators are required under the Rules to provide a certain levels of system security services at no charge to the market while being subject to significant reputation damage and financial penalties if unable to provide those services. The NGF believes it is consistent with the Market

Objective to compensate generators for those services if they provide them. This also will provide an appropriate basis for investment in plant to either meet or exceed the required minimum level of performance for connection and access to the network.

8. Broader Review Needed

These issues lie at the core of the framework and its capacity to deliver a secure operating electricity system. They indicate a need for a broader review of the framework than that which the AEMC is now conducting. A focus on the enforcement and compliance element of the framework will do little other than provide a means of finding parties to blame for poor security outcomes – it will not maximise the chances of maintaining a secure system.

The NGF is responding to the AEMC's issues paper on the enforcement and compliance regime. Nonetheless, generators consider that our shared goal of an effective system security framework would be much better served by the withdrawal of the relevant terms of reference and their replacement with a new set for a broader strategic review in a revised time frame.

In closing, the NGF would like to comment on the implication apparent in the present terms of reference to the AEMC, that generators are subject to perverse incentives in respect of compliance with their performance standards. On the contrary, and entirely consistent with the original intention behind the establishment of the NEM, generators have enormous commercial incentives to maximise their availability to earn spot and financial market revenue. When unavailable, a generator forgoes spot market revenue while potentially suffering significant losses because it cannot back the financial contracts into which it has entered.

The NGF wishes to discuss this important matter with you and your colleagues. I have copied this letter to the chairs of the AEMC and AER for their information.

Yours sincerely,

John Edelsten
Chairman